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**DEMORALIZATION IN EATING DISORDERS: ITS PSYCHOLOGICAL
CHARACTERIZATION AND ROLE IN TREATMENT RESPONSE**

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Nu este răspunsul cel care luminează, ci întrebarea.
It is not the answer that enlightens, but the question.

-Eugene Ionesco

Abstract

Aims: The first study investigates the clinical characteristics of demoralization, a syndrome characterized by helplessness, hopelessness and a sense of incompetence, in eating disorder (ED) patients, in addition to examining its distinction from depressive disorders. The second study has the aim of testing the role of demoralization's hallmark feature, subjective incompetence, in treatment response.

Methods: Eighty-three ED outpatients and inpatients, undergoing cognitive-behavioral therapy based treatment, were recruited and evaluated at baseline and mid-treatment for demoralization, subjective incompetence, depressive and eating-related symptomatology, and psychological well-being (PWB). Chi-squared test was applied to examine overlap of demoralization and depression diagnoses. Multivariate analyses of variance compared ED patients with comorbid demoralization, to those with comorbid depression and no comorbidity. Hierarchical linear regression analyses were conducted to test whether subjective incompetence reductions predicted changes in ED symptoms and psychological well-being dimensions. Logistic regression analysis was conducted to explore whether mood-related variables and psychological well-being domains predicted drop-out.

Results: Demoralization was highly prevalent and associated with increased distress and impaired psychological well-being. Although cases of only demoralization in absence of depression were documented, demoralization significantly overlapped with depressive disorders. Compared to depressed ED patients, demoralized patients had less severe eating-related pathology, were impaired in fewer psychological well-being domains, did not necessarily exhibit depressed mood, anxiety, and sleep difficulties. By mid-treatment demoralization diagnoses and subjective incompetence were significantly reduced. Such decreases in subjective incompetence, controlling for depression and illness severity, significantly predicted response in ED symptomatology and positive functioning. Only PWB-autonomy predicted drop-out.

Conclusions: Demoralization, unlike depression, was not associated with worse eating-related symptomatology in EDs. It emerges as an indicator of worsening status in terms of specific depressive symptoms which may not reach diagnostic thresholds, and in terms of worse psychological well-being. Subjective incompetence may be an additional therapeutic target to increment treatment response in EDs.

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CHAPTER 1

1. Introduction

1.1 Definitions of Demoralization

Various definitions of demoralization have been proposed since it has been introduced. Frank (1961) first used the term demoralization as a definite cluster of symptoms, in which one primarily experiences persistent feelings of failure to meet one's own or others' expectations, hopelessness, helplessness, and an inability to cope and problem solve. Feeling unable to cope is understood in Frank's works as feelings of being overwhelmed and defeated by one's circumstances and of being incapable of effectively engaging in problem-solving and performing tasks. According to the author, this state characterized psychotherapy clients seeking treatment who had exhausted personal resources and had realized they were no longer able to cope with their personal problems and symptoms. Schmale and Engel (1967) subsequently identified a psychological state which may precede illness also characterized by helplessness or hopelessness, feelings of being at a loss and "at the end of one's rope" and unable to cope, naming it the "giving up-given up" complex. Considered an intermittent and transient state, authors hypothesized its ability to alter and compromise one's biological economy in the presence of vulnerability to organic diseases and subsequently disrupt one's ability to counteract pathogenic processes (Engel, 1968). Klein and Davis (1969) on the other hand viewed it as a state characterized by pervasive changes in self-image rather than anhedonia, one of two hallmark features and required diagnostic criteria of clinical depression.

De Figueiredo (2013) has instead proposed as the clinical hallmark of demoralization, subjective incompetence, described as feeling incapable of resolving one's problems and self-doubt, which compromise the patient's sense of self-esteem and the sense of continuity between present, past and future events, contributing to demoralized individuals being indecisive, unsure and confused regarding their circumstances with a lack of control over their environment (de Figueiredo, 2013; de Figueiredo e Frank, 1982).

A more recent definition of demoralization by Fava et al. (1995) integrates Frank's (1961) demoralization syndrome and Schmale and Engel's giving up-given up complex (Schmale & Engel, 1967). The authors introduced this conceptualization within the Diagnostic Criteria for Psychosomatic Research (DCPR), in an effort to translate psychosocial variables derived from psychosomatic research into an operational diagnostic framework, underscoring the limitations of using traditional psychiatric nosology in the medical context in which a valid assessment is frequently confounded by complex presentations of medical symptoms at times overlapping with psychiatric ones (Fava, Cosci, & Sonino, 2017). Demoralization is defined as a state of distress in which the following is present: a sense of failure or inability to cope, a sense of helplessness, and a sense of hopelessness. The feeling state must be prolonged and generalized (one month duration) and the feeling closely antedates the manifestations of a medical disorder or exacerbates its symptoms. Demoralization was subsequently suggested to become a part of "Psychological Factors Affecting Medical Conditions" category of the DSM as a clinical specifier (Fava & Wise, 2007).

Considerations on the function and meaning of demoralization have also varied widely. Demoralization has been seen as a normal reaction to adversity (Jacobsen et al., 2007) and both Slavney (1999) and Parker (2004) had argued that demoralization represented a normal dysphoric condition, similar to grief. Authors supposed that once the stressor was removed and psychosocial protective factors such as family support improved, the condition would also inevitably be ameliorated.

1.2 The State of Research on Demoralization

A recent review (Tecuta, Tomba, Grandi, & Fava, 2015) following PRISMA criteria (Moher Liberati, Tetzlaff, Altman, The PRISMA Group, 2009) on studies assessing demoralization in medical patients, call such views into question. Specifically, DCPR-defined demoralization is uncommon in the general population (Mangelli Semprini, Sirri, Fava, & Sonino, 2006), is not necessarily correlated with stressful life events (Porcelli, De Carne, & Fava, 2000; Picardi et al.,

2006), has a profound impact on quality of life (Grassi, Rossi, Sabato, Cruciani, & Zambelli, 2004; Mangelli et al. 2006; Rafanelli, Milaneschi, Roncuzzi, & Pancaldi, 2010; Grandi, Sirri, Tossani, & Fava, 2011). Moreover it is correlated with abnormal illness behavior and somatization processes (Porcelli et al. 2000; Galeazzi, Ferrari, Mackinnon, & Rigatelli, 2004; Ferrari, Galeazzi, Mackinnon, & Rigatelli, 2008; Mehnert, Vehling, Hocker, Lehmann, & Koch, 2011; Fava et al. 2012; Vehling et al. 2012). While authors Kissane et al. (2004) considered demoralization as a distress response resulting from a known life-threatening condition or serious illness, specifically cancer, the review found no significant differences in the prevalence rates of demoralization across different medical conditions such as oncology and gastroenterology (Mangelli et al., 2005). Indeed demoralization was found to be a highly prevalent psychological state with a frequency ranging from 30-50% in medical patients with varying illnesses.

In light of such data, the review concluded that the construct of demoralization developed by Schmale and Engel (1967) and subsequently Frank (1973), which constituted the basis for the DCPR criteria, was more in accordance with the data in literature. Moreover, the features in DCPR criteria overlap with the construct of demoralization found in other scales, such as the Subjective Incompetence Scale (Cockram, Doros, & de Figueiredo, 2009) and the Demoralization Scale (Kissane et al., 2004). Common features in all measures and conceptualizations are subjective incompetence, hopelessness, and helplessness.

1.3 Clinical Features of Demoralization

The syndrome of demoralization is associated with various clinical features. Subjective incompetence, a component of demoralization, has been found to be associated with negative coping styles, specifically denial, behavioral disengagement and self-blame in young medical patients (Cockram et al., 2009). As previously stated, demoralization is associated with abnormal illness behavior, such as illness denial (Galeazzi et al. 2004) especially in psychiatric illness (Abbate-Daga et al., 2013; Tossani, Ricci Garotti, & Cosci, 2013). Moreover, demoralization is

significantly associated with adverse health outcomes in terms of worsening clinical status, poorer psychosocial functioning and quality of life, and more physical problems and somatization (Tecuta et al., 2015).

Furthermore, demoralization is associated with impairments in positive functioning characteristics. Compromised psychological well-being domains were documented in several medical populations with demoralization syndrome (Grandi et al., 2011; Rafanelli, Offidani, Gostoli, & Roncuzzi, 2012). Psychological well-being (Ryff, 1989, 2014) represents a dimensional model which considers the various domains that are conducive to an individual's development of optimal functioning: positive evaluation of one's self, the belief that life is purposeful and meaningful, the possession of quality relationships with others, a sense of continued growth and development, a sense of mastery over one's environment, and a sense of self-determination and autonomy. Ryff and Singer (1996) have suggested that psychological well-being is not simply the flip side of psychological maladjustment, but constitutes an independent dimension of psychological functioning. In biomarker investigations, well-being and ill-being have been found to be independent phenomena that can be distinguished by different biological signatures (Ryff et al., 2006).

1.4 Demoralization and Depression

The majority of recent studies on demoralization have focused on its differentiation from major depression. The latter is classified in the Diagnostic and Statistical Manual of Mental Disorders (DSM 5; American Psychiatric Association, 2013) as one of several depressive disorders, (alongside disruptive mood disorder, persistent depressive disorder), characterized by at least five of nine possible symptoms, present nearly every day for at least two weeks which constitutes a depressive episode. To receive a diagnosis of major depressive disorder, during the episode the patient must exhibit and report at least (1) depressed mood (feeling sad, empty or hopeless) or (2) loss of interest or pleasure. The other symptoms include (3) significant weight loss or gain or

significant decrease or gain in appetite, (4) insomnia or hypersomnia, (5) psychomotor agitation or retardation, (6) fatigue or loss of energy, (7) feeling worthlessness or excessive or inappropriate guilt, (8) difficulties in thinking or concentrating or decision-making, and (9) recurrent thought of suicide or death with or without specific plans or a suicide attempt. Such symptoms must cause clinically significant distress or functional impairment in at least one area of functioning such as social, occupational areas. Additionally, the symptoms must not be attributable to physiological effects of substances or medical condition.

Concerning the differentiation of demoralization from major depression, hopelessness in particular, a component in most demoralization conceptualizations, overlaps with clinical depression especially when considering heightened suicidality in depressed individuals. Indeed both conditions are present simultaneously in many medical samples. However, demoralization and major depression have also been found to be distinct in numerous studies which documented cases of demoralization without major depression and of major depression without demoralization, indicating that the psychological states may be different clinical phenomena in the medical context (Tecuta et al., 2015). Such a possibility may be due to demoralization not being the exclusive presence of hopelessness, but also the presence of other hallmark features, mainly helplessness and subjective incompetence which may or may not be present in major depression. Indeed helplessness is not a diagnostic feature in depressive disorders (de Figueiredo, 2013; APA, 2013).

Phenomenological observations have underscored differences between major depression and demoralization constructs. According to Klein, Gittelman, Quitkin and Rifkin (1980), in demoralization, anticipatory pleasure, the ability to derive pleasure from the anticipation of an event, is negatively affected, while consummatory pleasure, the ability to enjoy the event itself, is thought to remain intact. In the depressed individual, however, both anticipatory and consummatory pleasures are adversely affected in the commonly recognized clinical hallmark feature of anhedonia. Furthermore, seemingly low levels of motivation to action in demoralization are thought to be

caused by a sense of subjective incompetence, that is, the individual is blocked by feelings of inadequacy and is unsure of where to direct his or her capacity to react, while in depression there is an outright decreased magnitude of motivation. Major distinctions between demoralization and “endogenomorphic” depression have been underscored by the authors (Klein et al., 1980). A popular distinction in the 1970s, between endogenomorphic depression, with no associated external precipitating event, characterized mostly by physiological symptomatology (psychomotor retardation, early morning awakening, weight loss, and lack of reactivity to the environment) and greater severity compared to “reactive depression” and other mood alterations in response to life events, is however not consistently supported in the literature and has been replaced in contemporary psychiatry by distinctions in symptom patterns, rather than causal factors (Paykel, 2008).

1.5 The Relationship between Demoralization and Depression

While on one hand demoralization may be distinct from depression, on the other hand, the construct of demoralization may represent a subclinical or prodromal form of depressive symptomatology or suicidality, occurring before acute manifestations of depressive illness (Kissane, Clarke, & Street, 2001; Rickelman, 2002; de Figueiredo, 2013). One of the main demoralization theorists argues that subjective incompetence may progress to helplessness followed by hopelessness (the combination of these being demoralization) and eventually suicidality, representing a clinical progression of worsening states (de Figueiredo, 2013).

In the theoretical framework of cognitive theory, demoralization, understood as a combination of subjective incompetence or sense of failure, helplessness and hopelessness, may represent a construct within the realm of global and negative self-evaluative beliefs, a main target for cognitive-based therapeutic interventions (Cooper, 2005). More specifically, the reformulation of the learned helplessness theory (Seligman 1975), the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989), sees the component of demoralization that is hopelessness

as a cognitive vulnerability to depression. Demoralization may be viewed as a state in which the individual has a tendency of attributing negative life events to internal (subjective incompetence) and stable (hopelessness) causes, at risk for developing depression if such attributions become global rather than remain specific to stressful situations. Indeed evidence of a continuum between hopelessness and diagnosis major depression has been shown (Haslam & Beck, 1994; Iacoviello, Alloy, Abramson, Choi, & Morgan, 2013). Hopelessness has been documented as one of the first symptoms that appears and among the last symptoms to subside in a subtype of depression named hopelessness depression (Iacoviello et al., 2013). However, the data on such a relationship is not yet clear. Longitudinal associations between hopelessness, suicidality and depressive symptoms have been inconclusive (Harris & Lennings, 1993; Metha, Chen, Mulvenon, & Dude, 1998; Shahar, Bareket, Rudd, & Joiner, 2006).

CHAPTER 2

2. Study 1: Demoralization in Eating Disorder Patients

2.1 The Importance of Psychosomatic Constructs in Eating Disorders

Despite the clinical importance of demoralization in medical settings (Tecuta et al., 2015), demoralization is seldom investigated in eating disorders, a population in which severe medical and psychiatric complications are frequent and mortality rates are high (Berkman, Lohr, & Bulik, 2007). Eating disorders (EDs) were traditionally considered psychosomatic illnesses, that is a physical illness with emotional origins, independent of any pre-existing disease state (Minuchin et al., 1975; Satter, 1986). They are frequently associated with major somatic implications and complications such as osteoporosis, nutritional deficiencies, cerebral atrophy, cardiac and metabolic disorders, are frequent especially in anorexia nervosa (APA, 2013). As demoralization is associated with worsened clinical status in medical settings (Tecuta et al., 2015), investigating the syndrome in EDs may have both preventive and prognostic value.

Moreover, differentiating demoralization and depression in EDs may also be particularly useful as depression is extremely common in EDs (Mischoulon et al., 2011) and its manifestation may be confounded by common symptomatology. Several conceptual and methodological issues within psychiatric comorbidity research have been underscored that may complicate assessment and treatment efforts in general (Fava et al., 2014), and in EDs in particular (Godart et al., 2007) including overlapping symptomatology, and diagnostic and assessment issues. Comorbid profiles may be artifacts of our limited diagnostic conventions and categorical classification systems. The frequent overlap of depressive symptomatology and symptoms of the medical illness itself, a problem common in the medical context in general (Fava & Sonino, 1996; Mitchell, Vaze, & Rao, 2009) and in EDs in particular (Garfinkel & Garner, 1982; Casper, 1998) may inflate depression diagnoses in this clinical population. Indeed neuro-vegetative symptoms attributed to depression may arise from malnutrition in AN, such as sleep disturbance, fatigue, irritability and difficulties

concentrating, and poor memory (Keys, Brozek, & Henschel, 1950; Viesselman & Roig, 1985; Casper, 1998; Pollice, Kaye, Greeno, & Weltzin, 1997; Meehan, Loeb, Roberto, & Attia, 2006; Mattar, Huas, Duclos, Apfel & Godart, 2010). Moreover, the heterogeneity of depressive manifestations that are commonly subsumed under a single diagnostic label of major depression (Feinsten, 1983) may oversimplify case conceptualizations, overlooking the specificity of depressive manifestations of the individual patient. While differentiation between demoralization and major depression has been confirmed in other medical samples (Tecuta et al., 2015), it has never been investigated in eating disorders patients.

In addition, other constructs relating to mood, primarily hopelessness and helplessness (Waller, 2012) and poor self-efficacy (Wade, Treasure, & Schmidt, 2011; Dawson, Rhodes, & Touyz, 2014), have been identified by ED patients themselves as barriers to change and recovery in qualitative studies, all of which are not necessarily captured by diagnostic criteria. In chronic AN patients, the recovery process may be hindered by feelings of hopelessness and "feeling stuck" (Nordbø et al., 2012; Robinson, Kukucska, Guidetti, & Leavey, 2015).

Exploring other forms and constructs of distress in EDs derived from the psychosomatic literature, demoralization (Fava et al., 1995) and subjective incompetence (Cockram et al., 2009), may provide a useful tool for identifying increased vulnerability in those patients with medically-related symptoms that may be confounded with depression, as well as identifying negative self-beliefs relating to one's worth and abilities (i.e. incompetence), useful to cognitive-based theory.

2.2 Clinical Features of Eating Disorders

Eating disorders (EDs) are currently allocated in the DSM 5 (APA, 2013) within a diagnostic macro-area of mental illnesses named "feeding and eating disorders" all of which are characterized by a persistent disturbance of eating or eating-related behaviors. Such alterations in the consumption of food significantly impair the affected individual's physical health and/or psychosocial functioning. Diagnostic criteria are reported below for the following eating disorders:

anorexia nervosa (AN), bulimia nervosa (BN), binge-eating disorder (BED) and unspecified feeding or eating disorder (USFED). EDs are distinct disorders which differ in prognosis, outcomes, and treatment needs. Eating disorder patients frequently present comorbid psychiatric illnesses, commonly phobias, obsessive compulsive-related disorders and depression, as well as exhibit significant distress, limits in their functioning, medical complications, and negative treatment outcomes (Nagl et al., 2016).

Anorexia nervosa is characterized by marked restriction of energy intake leading to a significantly low body weight for the person's age, sex, developmental trajectory, and physical health. Such dietary restriction is accompanied by an intense fear of gaining weight or persistent behaviors that compromise weight gain. Moreover, for a diagnosis of AN, the person must present a distortion or alteration in their perception of body weight or shape, excessive importance given to body weight or shape specifically in self-evaluation, or a persistent lack of understanding or acknowledgement of the seriousness of the current low body weight.

For a diagnosis of bulimia nervosa an individual must exhibit recurrent episodes of binge eating, which are characterized by the following: consuming in a specific period of time (e.g., any 2-hour period) amounts of food that is definitely greater than what most individuals would eat in a similar period of time, associated with feeling out of control during the episode and recurrent inappropriate compensatory behaviors aimed at preventing weight gain (self-induced vomiting, abuse of laxatives or diuretics, fasting, excessive exercise). Moreover the binge-eating episodes and compensatory behaviors occur at least once a week for 3 months. In addition, as in anorexia nervosa, body shape and weight excessively influence self-evaluation.

Binge-eating disorder also includes recurrent episodes of binge eating accompanied by a sense of lack of control over eating, however it is not followed by inappropriate compensatory behaviors. Additionally, three or more of the following are present: eating occurs much more rapidly than usual, the person eats until feeling uncomfortably full, the person eats large amounts of

food when not feeling physically hungry, eating occurs alone due to feelings of embarrassment over quantity of food consumed, feeling disgusted with oneself, depressed, or very guilty afterward. Marked distress regarding binge eating must be present for a BED diagnosis and episodes occur on average at least once a week for 3 months.

Unspecified feeding or eating disorder applies to presentations in which symptoms do not fulfill criteria of an ED, however clinically significant distress or impairment in social, occupational, or other important areas of functioning are present.

2.2.1 Prevalence, Onset and Course of EDs

Prevalence and incidence of EDs are not clear due to varying sampling and assessment techniques in the literature (Nagl et al., 2016). In addition, little data is currently available on the revised diagnostic categories given the fairly recent publication of the DSM 5 (Stice, Marti, & Rohde, 2013). Recent studies suggest that roughly 13% of adolescents develops an ED (AN, BN, BED or USFED) by the age of 20 (Stice et al., 2013) and that an even larger percentage (from 15 to 47%) present behaviors or beliefs and cognitive processes associated or conducive to pathological eating (Culbert, Rancine, & Klump, 2015). Subthreshold pathological eating-related symptomatology is associated with higher levels of emotional distress and limited functioning comparable to impairments and distress found in threshold cases (Keel, Brown, Holm-Denoma, & Bodell, 2011).

According to the DSM 5, the 12 month prevalence rate among young females is 0.4 for AN around 1.1-1.5% for BN, while BED is present in 1.6% of women and 0.8% of men (APA, 2013). In Europe anorexia nervosa is reported by roughly 1-4%, bulimia nervosa by 1-2%, binge eating disorder by 1-4%, and subthreshold eating disorders by 2-3% of women (Keski-Rahkonen & Mustelin, 2016). While previously the most common diagnosis following DSM-IV criteria was eating disorder not otherwise specified (EDNOS), recent changes in DSM-5 criteria have brought on a decrease in unspecified diagnoses and possible increases in diagnoses of AN and BN (Fairburn & Harrison, 2003; Hay, Girosi, & Mond, 2015). Additionally, in recent decades prevalence rates of

EDs have been on the rise (APA, 2013; Culbert et al., 2015; Fairburn & Harrison, 2003). Such an increase may be due not only to actual rise in cases, but rather increased requests for help and improved diagnostic and assessment tools and procedures (Fombonne, 1995; Van Hoeken & Lucas, 1998).

AN and BN are more commonly diagnosed in females with a female to male ratio of 10:1 for both disorders (APA, 2013). With regard to BED there is less of a prevalence difference. However, data on males suffering from EDs is quite scarce. AN and BN are also more common in high income countries with post-industrial economies (such as the USA and Europe) in white populations compared to other populations found in Latin American, Asian as well as African countries (APA, 2013; Fairburn & Harrison, 2003). BED diagnoses instead do not seem to differ across nationalities (APA, 2013).

Anorexia nervosa onset typically occurs in adolescence or early adulthood with a mean onset age of 12 to 15 years old (APA, 2013; Fairburn & Harrison, 2003; Nagl et al., 2015; Hoek & Van Hoeken, 2003; Keski-Rahkonen, Raevuori, & Hoek, 2008). Typically AN develops after a period of dietary restriction, closely associated with stressful life events or changes, such as moving away for college (APA, 2013; Grilo, 2006). Outcomes and remission for this diagnostic group are quite heterogeneous: for some individuals who develop AN illness duration is brief with complete remission after a single episode, followed by mild impairment and residual symptomatology that required a brief intervention. Such a trajectory is more common in young patients with a short illness duration. In other patients the course of AN takes on a chronic form, requiring intensive treatment approaches (APA, 2013; Fairburn & Harrison, 2003). About 50% of patients reach complete remission, a third reaches partial remission, and in about 10-20% of cases the illness persists, becoming chronic and treatment-resistant (Sullivan, Bulik, Fear, & Pickering, 1998; Steinhausen, 2002). The APA (2013) recently reports that most individuals with AN have remitted within the first 5 years of becoming ill. Within those who do reach complete remission, relapse is

frequent, with a third exhibiting additional episodes (Strober, Freeman, & Morrell, 1997). Many, despite significant treatment response, continue to maintain a low body weight, a dysfunctional self-image, and maladaptive traits such as excessive perfectionism and obsessionality (Sullivan et al., 1998). Moreover, protective factors in treatment include a short illness duration and less severe weight loss. Negative prognostic factors instead may be a history of long treatment attempts, severe weight loss, presence of binge-eating and self-induced vomiting (Steinhausen, 2002; Keel & Brown, 2010).

The cross-over phenomenon from anorexia nervosa to BED is frequent (Eddy et al., 2002) while in about half of AN cases, the disorder develops into full-blown BN (Bulik, Sullivan, Fear, & Pickering, 1997; Keel & Mitchell, 1997). In particular, between 8% to 62% of patients with an initial AN diagnosis develop bulimic symptomatology within the first five years of struggling with the illness (Bulik et al., 1997; Strober et al., 1997). Anorexia nervosa in particular is associated with higher risk of death (Herzog et al., 2000), about 5% per decade, the most common causes being medical complications associated with the ED and suicide (APA, 2013; Bulik et al., 2008).

Bulimia nervosa has an age of onset that is typically higher compared to AN. Even so the disorder develops mostly in adolescence or early adulthood between the ages of 14 to 35 (APA, 2013; Hoek & Van Hoeken, 2003; Keski-Rahkonen et al., 2008). As in AN, BN is preceded by dieting and restrictive food intake (APA, 2013) and at times can follow anorexia nervosa itself, commonly known as the cross-over phenomenon (Bulik et al., 1997; Tozzi et al., 2005). Outcomes can vary greatly but are generally more positive and promising compared to available data on AN (Keel & Brown, 2010). A seminal longitudinal study had documented a high complete remission rate of 74% in BN (compared to 33% in AN patients) after a 90-month follow-up (Herzog et al., 1999). Most trajectories can be characterized by two possible outcomes: an acute episode followed by full remission or a chronic course characterized by frequent relapses that alternate with partial remission episodes (APA, 2013; Keel & Mitchell, 1997). Another long-term follow-up study (Keel

& Mitchell, 1999) had found that up to 30% of former BN patients still presented problematic behaviors i.e. bingeing and purging, 10 months from treatment. Risk factors for a poorer prognosis for BN include childhood obesity, low self-esteem and comorbid cluster B personality disorders in particular borderline personality disorder (Bell, 2002). Cross-over from BN to AN is not very common, occurring in about 10-15% of cases. More commonly BN patients may develop BED or subthreshold unspecified ED diagnosis. Death rates per decade for BN are around 2% (APA, 2013), about 23% of which are attributable to suicide (APA, 2013; Arcelus, Mitchell, Wales, & Nielsen 2011).

Fewer data are available for BED, however the disorder is thought to typically arise in adulthood. Typically in BED, bingeing precedes dieting, rather than the other way around, which instead characterizes BN onset (APA, 2013). Binge-eating disorder in terms of duration and severity of impairment is similar to BN, with similar course characterized by episodic remission and relapses but better remission rates overall both following treatment and in naturalistic observations (Fichter, 2005; APA, 2013). Cross-over from BED to other EDs is rare (APA, 2013) and death rates are low. In a recent meta-analysis with a 5 year follow-up, no deaths out of a total of 246 BED patients were recorded (Keel & Brown, 2010).

2.2.2 Mood Disturbance in EDs

EDs are often comorbid with affective symptomatology, the most common being major depression (Godart et al., 2007; Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011; Mischoulon et al., 2011). The general consensus considers anxiety and depression as consequences of the eating disorder itself, specifically for AN through malnutrition (APA, 2013) even though such theory has rarely been empirically investigated with appropriate methodology and measures (Mattar et al., 2010; Mattar, Huas, EVHAN group, & Godart, 2012). Such a position is maintained by researchers who derive from animal behavior models the hypothesis that psychiatric symptoms develop from restrictive eating (Ioakimidis et al., 2011; Bergh et al., 2013; Gutierrez, 2013).

Others suggest a common etiological pathway as eating disorders, depression and anxiety share common features such as cognitive styles (e.g., high perfectionism and low self-efficacy; Bardone-Cone, Abramson, Vohs, Heatherton, & Joiner, 2006), and personality traits (i.e. perfectionism and harm avoidance) (Kaye, Bulik, Thornton, Barbarich, & Masters, 2004). Some research supports the notions EDs and mood disturbance develop simultaneously: in subthreshold cases and mood symptoms are frequently correlated with disordered eating behaviors (Santos, Richards, & Bleckley, 2007; Courtney, Gamboz, & Johnson, 2008; Dennard & Richards, 2013).

Others still hypothesize the depression or anxiety precede or create vulnerability to the development of EDs (Deep, Nagy, Weltzin, Rao, & Kaye 1995; Stice, Presnell, & Spangler, 2002; Gardner, Stark, Freidman, & Jackson, 2000; Measelle, Stice, & Hogansen, 2006). Such notion is supported by studies that have demonstrated how negative affect (Stice et al., 2002; Gardner, Stark, Freidman, & Jackson, 2000; Measelle et al., 2006; Godart, Flament, Lecrubier, & Jeammet, 2000; Zerwas et al., 2013) and anxiety disorders (Godart et al., 2000; Zerwas et al., 2013) precede and/or predict eating pathology and the development of eating disorders, possibly representing a pathways to EDs, particularly in AN. These theories are consistent with cognitive theoretical models as well as physiological data. The fear-conditioning model of AN sees core features of dietary restriction and excessive exercise as exerting an anxiolytic function against the fear of weight gain that is out of patient's cognitive control (Zerwas et al., 2013). In BN, the vicious cycle of low mood and bingeing and purging may also arise through cognitive conditioning (Stice, Marti, Shaw, & Jaconis, 2009), generated and upheld by the expectation of symptomatic relief from such behaviors (Bohon, Stice, & Burton, 2009). Physiologically, starvation may initially provide relief from pre-existing anxiety and depressive symptoms or emotional dysregulation due to complex biological and psychological mechanisms such as depletion in tryptophan resulting from a strict diet (Kaye et al., 2003), or changes in mesocorticolimbic pathways (Brockmeyer et al., 2012). Against the notion that malnutrition leads to emotional problems, a recent study (Mattar et al., 2012) suggests contrarily

that depression and anxiety are not related to nutritional states. Unexpectedly no correlation between negative affect and any measure of current nutritional status at inclusion was found, even when taking into account potential confounding factors such as age and current use of psychotropic medication (Mattar et al., 2010, 2012). Moreover, in AN patients a lower BMI correlated with decreased emotion regulation difficulties (Brockmeyer et al., 2012). However such effects are short-lived as the behavioral strategy to regulate mood employed by AN patients with time exacerbates anxiety and depression symptomatology and the vicious cycle described by Garner (1993) ensues.

2.3 Demoralization and Subjective Incompetence in EDs

So far two studies have documented demoralization in EDs, finding a high prevalence in EDs (48%) and in inpatients with anorexia nervosa (AN) (49.1%) (Fassino, Abbate-Daga, Pierò, & Delsedime, 2007; Abbate-Daga et al., 2013). Moreover, AN patients with longer illness duration more frequently exhibit a higher frequency of demoralization (96%), along with other psychosomatic syndromes of health anxiety (85%), irritable mood (85%) and alexithymia (100%) (Abbate-Daga et al., 2013). Prevalence of demoralization remains unknown in other eating disorder (ED) diagnoses and in the outpatient context. While demoralization prevalence is known in EDs and AN in particular, not much is known about the correlates, characterization and influence of demoralization in EDs. In a few studies which have assessed demoralization in EDs through self-report measures, authors found a significant association with worse eating-related symptomatology (Fichter, Quadflieg, & Brandl, 1993; Fichter & Quadflieg, 2001). However such studies has used an instrument which assessed demoralization understood as non-specific distress, the Psychiatric Epidemiological Research Interview-Demoralization scale (Dohrenwend, Shrout, Egri, & Mendelsohn, 1980). Demoralization was also found to correlate with worse scores in body image, general psychopathology, compensatory behaviors and bulimic symptoms in a sample of patients with anorexia nervosa, bulimia nervosa, binge-eating disorder, and eating disorder not otherwise specified (EDNOS) diagnoses (Fichter & Quadflieg, 2001). Additionally, compared to obese

patients, BED and BN patients have reported significantly higher demoralization scores (Fichter, Quadlrieg, & Brandl, 1993).

Demoralization is thought to be primarily characterized by a sense of incompetence, that is, the individual perceives himself or herself to be unable to cope with pressing life problems (Cockram et al., 2009). However, subjective incompetence has never been assessed in eating disorder patients thus far. In addition, demoralization has been found to be associated with worse psychological well-being in medical patients (Tecuta et al., 2015). Eating disorder patients generally exhibit worse psychological well-being compared to healthy controls (Tomba, Offidani, Tecuta, Schumann, & Ballardini, 2014). However, to date, no studies have assessed demoralization concomitantly with subjective incompetence and psychological well-being in eating disorders before.

2.4 Rationale

The assessment of demoralization in EDs may have several clinically useful applications. Firstly, DCPR-defined demoralization in medical settings has been found to correlate with worse outcomes and clinical status, as well as worse psychological well-being. As ED patients are at high risk of medical complications and often have an unfavorable prognosis and impaired psychological well-being, the assessment of demoralization may be of particular clinical utility (Tecuta et al., 2015; Fava et al., 2017). Secondly, exploring other distress states developed specifically in psychosomatic medicine to evaluate psychological distress in the medical context, such as demoralization, may be particularly useful in AN, where illness symptomatology may confound the evaluation of depression leading to inappropriate treatment strategies. Thirdly, investigating the depressive spectrum more comprehensively by including other mood related constructs such as subjective incompetence and demoralization may be particularly important in this clinical population as they may be obstacles to recovery (Wade et al., 2011; Dawson, et al., 2014).

2.5 Objectives

The current study has the main aim of characterizing demoralization in ED patients and is subdivided into the following specific objectives:

1. Report the prevalence of demoralization and depressive symptoms/disorders and their overlap in ED patients and compare demoralization prevalence in patients and in matched controls.
2. Report the severity of subjective incompetence, the hallmark feature of demoralization, in ED patients compared to matched controls.
3. Report psychological characteristics of demoralization in EDs in terms of psychological distress and well-being by comparing ED patients with only demoralization, ED patients with depressive disorders (with or without demoralization), and ED patients with no mood disturbance.

2.6 Hypotheses

1. We hypothesize that the prevalence rates of demoralization and depression in both general population and ED groups will be similar to those reported in the literature, respectively 3% and 50%, and an overlap of constructs with the possibility of identifying cases of only demoralization and only depressive disorders.
2. We hypothesize that the ED group will report significantly higher subjective incompetence compared to the general population group, matched for socio-demographic characteristics.
3. We hypothesize that the ED group with only demoralization will exhibit significantly different scores in distress and psychological well-being, as well as different depressive symptoms compared to the group with neither diagnoses, and the group with depressive disorders independently of illness severity.

2.7 Methods

2.7.1 Participants

A convenience sample of consecutively screened out-patients and in-patients (n=83) who met DSM 5 diagnostic criteria (APA, 2013) for EDs, began an integrated treatment in a specialized private out-patient and in-patient clinics for the treatment of EDs (Bologna, Italy). Patients diagnosed with an eating disorder that is, anorexia nervosa, bulimia nervosa, binge-eating disorder and other-specified eating disorder were recruited in an outpatient clinic and inpatient residential setting in Bologna, Italy for participation in the study. Patients with past or current psychotic, neuro-cognitive or substance use disorders were excluded from the study. Diagnoses were established at intake by the clinic's psychologists which perform routine intake clinical interviews. Participants were informed about the opportunity to participate in the study by their assigned therapist before commencing treatment. In case of underage status, informed consent was collected from both the adolescent and the parents for participation in the study. All patients invited to participate took part in the study.

To obtain reference data from the general population on prevalence of demoralization and scores of subjective incompetence (the hallmark feature of demoralization) in non-ED adolescents and young adults, a control sample was recruited from the general population through flyers and online forums. Control participants were high school and university students from the Cesena area in Emilia-Romagna region, Italy. Informed consent was gathered from the students and both parents in case of underage status. Informed consent was gathered from the students and both parents in case of underage status. Approval from appropriate ethical committees was obtained for both samples.

2.7.2 Measures and Clinical Variables

Study instruments included data gathered from both clinician administered interviews and several self-rating questionnaires. Eating disorder symptomatology and data on clinical status related to the disorder was gathered from the patient's records. Study instruments were administered to patients briefly after intake and before treatment began. Such assessment will be used as baseline data.

1) **The Structured Interview for the Diagnostic Criteria for Psychosomatic Research (DCPR)-Demoralization Criteria** (Fava et al. 1995; Mangelli, Rafanelli, Porcelli, & Fava, 2007): The interview contains 58 questions with yes/no response which identify 12 psychosomatic syndromes including demoralization. Only demoralization syndrome presence was assessed through the corresponding 3 yes/no questions while the remaining DCPR syndromes were not considered in the present study. The primary aim of the DCPR is to provide a conceptual framework and assessment strategy for psychosomatic syndromes commonly encountered in the medical setting (Sirri & Fava, 2013; Fava et al., 2017). The authors base their demoralization operationalization on Schmale and Engel's giving up-given up complex (Schmale & Engel, 1967) and Frank's (1973) demoralization syndrome. The structured interview has demonstrated high inter-rater reliability and Cohen's kappa values ranging from 0.69 to 0.97 for the 12 syndromes. Cohen's kappa for demoralization was found to be 0.90 (Galeazzi, Ferrari, Mackinnon, & Rigatelli, 2004).

2) **Clinical Interview for Depression- 20 item version** (CID; Paykel, 1985) is a clinician administered interview based on 20 items and a valid and reliable instrument capable of assessing a wide range of depressive symptoms as well as small changes. Single item scores and a total score ranging from 20-140 are obtained with higher scores indicating greater mood symptomatology. There is no cut-off score. Items are defined and rated on 7-point scales with specification of each anchor point based on severity, frequency and/or quality of symptoms. Inter-rater reliability is .81 for the full interview and .86 for modified version used in the current study. High test-retest

reliability has been reported with a correlation coefficient of 0.66 in non-psychiatric participants (Guidi, Fava, Bech, & Paykel, 2011).

3) **Subjective Incompetence Scale (SIS;** Cockram et al., 2009) measures subjective incompetence, thought by authors to be the clinical hallmark feature of demoralization. It is a 12-item self-report questionnaire with no cut-off score, in which higher total scores indicating higher subjective incompetence (range 0-36). The SIS demonstrates high internal consistency with a reliability coefficient of 0.90. It asks subjects to consider the week preceding the day of assessment.

4) **Beck Depression Inventory II (BDI-II;** Beck, Steer, & Brown, 1996) is a self-rating 21 item questionnaire. A total score ranging 0-63 indicates depression severity with higher total scores indicate more severe depressive symptoms. Cut-off scores suggested by authors are the following: 0–13 (minimal), 14–19 (mild), 20–28 (moderate), and 29–63 (severe), with mean scores of 26.6 in mood disorders, and 28.1, 29.4, and 24.0 for major depressive episode, recurrent depression, and dysthymia, respectively. The BDI-II has shown convergent validity and stability in factorial structure in a wide variety studies on adolescent samples in multiple cultural settings with internal consistency described as around 0.9 and the retest reliability ranging from 0.73 to 0.96 (Krefetz, Steer, Gulab, & Beck, 2002; Osman, Kopper, Barrios, Gutierrez, & Bagge, 2004; Wang & Gorenstein, 2013).

5) **Psychological Well-being Scales-PWB** (Ryff, 1989): an 84 item self-rated questionnaire that covers 6 inter-related areas of psychological well-being which allow the development of optimal functioning: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. The PWB does not have cut-off scores. Items are constructed on a six-point 1–6 Likert scale, yielding six subscale scores ranging from 14 to 84. Subscale scores range from 0-98 with higher scores indicate greater psychological well-being in specific dimensions. Cronbach's alpha coefficients in a sample of 321 individuals from the general

population for the six scales ranged from .85 to .91. Test–retest reliability varied between .81 and .88, whereas validity correlations extended between .25 and .73 (Ryff & Singer, 1996). The Italian version was used (Ruini et al., 2003) with the following Cronbach alphas reported by Gremigni and Stuart-Brown (2011) autonomy – .86, environmental mastery – .78, personal growth – .75, positive relations – .84, purpose in life – .73, and self-acceptance – .71.

6) **Eating Attitudes Test-40** (Garner & Garfinkel, 1979): a 40 item screening measure identifying behaviors and cognitive patterns of eating disorders. Items are constructed on a 0–3 four-point Likert scale, yielding three subscale scores for dimensions of dieting, body, and food preoccupation, oral control, and a total score ranging from 0 to 120. Higher scores indicate greater eating disorder psychopathology. It has been widely used in adolescent samples (Garfinkel, & Newman, 2001) as well as applied in extensive Italian adolescent populations (Abbate-Daga et al., 2007; Miotto, De Coppi, Frezza, & Preti, 2003). Cronbach's alpha coefficient ranged from .79 in female patients with AN to .94. Test–retest reliability was .84, and the validity coefficient was .87 (Garner & Garfinkel, 1979). In this study, the Italian validation of the EAT-40 was applied, which reports subscale Cronbach alphas of .80 for dieting, .70 for bulimic preoccupations, and .83 for oral control (Cuzzolaro & Petrilli, 1988).

7) **Body mass index (BMI), illness duration in months, eating disorder diagnosis, and major depression and persistent depressive disorder (i.e. dysthymic disorder) diagnoses** were collected from the medical records. BMI (kg/m²) is an indicator of nutritional state. Subjects with a BMI between 18.7 and 23.8 are considered to be of a normal weight (Società Italiana di Nutrizione Umana, 1996).

2.7.3 Data Analysis

Descriptive analyses were run on all the recruited participants (n=83). At the time of data analysis, data on diagnoses was available on 80 ED patients as three demoralization and depression diagnoses were missing. Moreover, data on questionnaires (BDI-II, SIS, PWB) was available for 67 out of the 83 patients. CID interviews were conducted on 52 out of the 83 patients due to patient time availability. Descriptive statistics were run to investigate socio-demographic information of both control and patient groups, and for frequencies of diagnoses. For descriptive purposes, T-tests for independent samples were conducted between the currently recruited 83 ED patients and 80 control participants drawn from the general population sample, matched for socio-demographic characteristics (gender, age, marital status, occupation) to compare socio-demographic data. Moreover, chi-squared and t-tests was run to compare ED patients and the matched control sample in demoralization syndrome prevalence rates and in subjective incompetence scores, respectively.

For subsequent analyses, ED patients were subdivided into three groups: the group with no comorbidity (absent demoralization, absent major depression or persistent depressive disorder i.e. dysthymia), the comorbid demoralization group that exhibited only demoralization syndrome, and the comorbid depression group with major depression or persistent depressive disorder diagnoses (with or without demoralization).

Multivariate analyses of covariance (MANCOVA) on PWB scales and CID items and analyses of covariance (ANCOVA) on SIS, BDI-II and EAT scores were run to compare ED groups in outcome variables. All PWB scales and ten CID items pertaining to diagnostic criteria for depressive disorders or anxiety were included. Age, educational level, BMI and illness duration, commonly inserted as covariates in ED research, were not significantly correlated with any independent or outcome variables and were therefore excluded (Miller & Chapman, 2001). Moreover, age, educational level, BMI and illness duration did not significantly interact with the group variable in any MANOVA and ANOVA analyses.

Illness duration was chosen as an indicator of illness severity, since BMI has been previously criticized as a measure of severity in AN. Illness duration is considered an important predictor of outcome (Maguire et al., 2008). As it also significantly differed between inpatients and outpatients, it was inserted in analyses as a covariate. Statistical significance was set at alpha level 0.05. Bonferroni corrections were applied to adjust for multiple comparisons. Sidak's correction for alpha level adjustment was also considered for multiple testing (p-level adjusted to .0102). Given criticisms to the reliability of p-values, Cohen's d effect sizes were also calculated (Sullivan & Feinn, 2012) where $d > .80$ indicates a large effect and $d > 1.1$ a very large effect (Cohen, 1988).

2.8 Results

2.8.1 ED patients and control sample characteristics

A total of 83 eating disorder female patients were recruited and evaluated with mean age 27.80 ± 11.194 years, mean educational years 13.95 ± 3.201 . The majority was single (71.1%) and either a high school or college student (47%) or employed (30.6%). Mean body mass index and illness duration at baseline by diagnostic group was the following: for AN patients 15.48 ± 1.64 kg/m², illness duration of 77.58 ± 81.54 months; for BN patients 21.33 ± 1.93 kg/m² and illness duration of 111.36 ± 88.69 months; for BED patients 38.34 ± 9.13 kg/m² and illness duration of 153.82 ± 125.84 , for patients with otherwise specified feeding or eating disorder (OSFED) 21.72 ± 9.42 kg/m² and illness duration of 105.99 ± 107.48 months. The majority, 67.5% (n=56) were outpatients and the remaining 32.5% were inpatients (n=27). Outpatients and inpatients were all female and did not differ significantly in main socio-demographic characteristics, that is age ($p=.567$), and education ($p=.804$) or in BMI ($p=.859$). They differed significantly in illness duration ($p=.019$) with inpatients reporting longer length of illness.

Participants from the female general population had mean age of 26.51 ± 7.98 years and mean education 17.39 ± 3.16 years. T-tests and chi-squared tests showed that age, marital status and occupational status differences between control and patient groups were not statistically significant,

while educational level significantly differed between controls and ED patients. Socio-demographic and clinical information of research samples (matched controls, outpatient ED, inpatient ED patients) as well as comparisons can be consulted in Table 1.

Table 1. Socio-demographic Characteristics of Research Samples

Variable	Matched controls (n=80)	Total ED sample (n=83)	<i>p</i>	Outpatients (n=56)	Inpatients (n=27)	<i>p</i>
Age	26.51±7.98	27.80±11.19	.301	27.31± 12.06	28.85± 9.23	.567
Education (years)	17.39± 3.16	13.95±3.20	.0001	13.89± 3.284	14.12± 3.06	.804
Marital status (% single)	92.8	71.1	.171	85.4	72.0	.081
Occupation (%employed/student)	90.2	87.8	.113	93.8	45.8	.0001*
Diagnoses (n): BMI (kg/m ²)	-	AN (38):15.48±1.64 BN (14):21.33±1.93 BED (13):38.34 ±9.13 OSFED (18): 21.72±9.42	-	AN (20): 15.62±1.67 BN (10): 21.79±1.90 BED (10): 36.47±9.67 OSFED(16): 21.43±6.62	AN (18): 15.29±1.63 BN (4): 20.16±1.66 BED (3):43.92±4.69 OSFED (2): 21.42±10.94	.859
Illness duration (years)	-	9.28±7.39	-	7.23±8.93	12.54±8.02	0.019

Note. AN, anorexia nervosa; BED, binge-eating disorders; BN, bulimia nervosa; OSFED, otherwise-specified feeding or eating disorder. *Statistically significant after adjusting for multiple testing with Sidak's correction.

2.8.2 Demoralization in control and patient samples

Chi-squared analyses showed significant differences in demoralization prevalence rates between ED patients (n=80) and general population controls (n=80) matched for socio-demographic characteristics. In particular, patients with eating disorders exhibited a significantly greater frequency of demoralization syndrome, with 65% of the sample reporting the psychological state, compared to a demoralization prevalence rate of only 11.25% in the general population female sample (Table 2).

Table 2. Chi-Squared Test for Demoralization Diagnosis in ED Patients and Matched Controls

	Demoralization Absent	Demoralization Present	Total	X ²
ED patients	28 35% of total sample	52 65% of ED sample	80 100% of ED sample	55.397 p<.0001
Controls	71 88.75% of control sample	9 11.25% of control sample	80 100% of control sample	
Total	99 61.88% of total sample	61 38.12% of total sample	160 100% of total sample	

2.8.3 Demoralization and Depression Prevalence in ED Patients

A significant overlap of demoralization and depressive disorders was found with Chi-squared analysis with 40% of the sample suffering from both states. The overlap of constructs was not all-encompassing however, as six cases (7.5%) were depressed but not demoralized, and 20 cases (25%) were demoralized in absence of a diagnosis of depressive disorder (Table 3).

Table 3. Chi-Squared Test for Demoralization and Depressive Disorders in ED Patients

	Depressive Disorders Absent	Depressive Disorders Present	Total	X ²
Demoralization Absent	22 27.5% of total sample	6 7.5% of total sample	28 35% of total sample	11.741 p=.001
Demoralization Present	20 25% of total sample	32 40% of total sample	52 65% of total sample	
Total	42 52.5% of total sample	38 47.5% of total sample	80 100% of total sample	

2.8.4 Subjective Incompetence in Control and Patient Samples

Moreover, t-tests revealed how compared to matched controls, ED patients reported significantly higher subjective incompetence, depression and eating disorder symptomatology scores ($p<.0001$) with very large effect sizes ($d>1.30$) (Cohen, 1988). Mean patient scores also surpassed clinical cut-offs in BDI-II (cut-off= 24) and EAT (cut-off=30). See Table 4.

Table 4. T-test in SIS, BDI-II and EAT total scores in ED Patients and Matched Controls

Instrument	Range	Controls <i>M ±SD</i> (n=80)	ED patients <i>M ±SD</i> (n=83)	<i>t</i> (<i>df</i>)	<i>p</i>	<i>d</i>
SIS total score	0-36	11.41±4.74	19.47±6.57	<i>t</i> _(130,713) = -7.848	p<0.0001	-1.407
BDI-II total score	0-63	7.86±7.27	25.05±11.15	<i>t</i> _(96,541) = -10.163	p<0.0001	-1.826
EAT total score	0-120	12.06±13.59	48.52±33.97	<i>t</i> _(69,867) = -7.536	p<0.0001	-1.409

Note. BDI-II: Beck Depression Inventory II; *d*, Cohen's *d* effect size; *df*, degrees of freedom; EAT: Eating Attitudes Test; ED, eating disorder; *M*, mean; *SD*, standard deviation; SIS: Subjective Incompetence Scale; *t*, Independent Samples T-test

2.8.5 Characterization of Demoralization in ED patients

ANOVA revealed that the ED groups with only demoralization (*n*=15), with comorbid depressive disorder with and without demoralization (*n*=32), and the group with no comorbidities (*n*=20) did not differ in socio-demographic characteristics such as age (*p*=.436) and educational level (*p*=.100) and in clinical variables such as BMI (*p*=.864), illness duration (*p*=.143). Groups did however differ in number of previous treatments (*p*=.046), with demoralized patients reporting less treatment attempts (1.00±.99) compared to unaffected (2.00±2.93) and depressed groups (2.57±1.65).

A one-way MANCOVA with illness duration as a covariate for illness severity revealed that there was a statistically significant difference between groups in psychological well-being: Wilks' λ =.494, $F(12, 112)=4.023$, $p < .0001$, partial η^2 =.297. Power to detect the effect was .999. Given the significance of the overall test, Tests of Between-Subjects Effects were examined. Significant effects with large effect sizes for group were found in PWB-Autonomy, PWB-Environmental mastery, PWB-Positive relations PWB-Purpose in life, PWB-Self-acceptance. Separate univariate analyses showed significant differences in subjective incompetence (SIS) and depression symptoms (BDI-II) as well. See Table 5. Post-hoc comparisons with Bonferroni corrections were conducted to compare the three groups in psychological distress and well-being variables (See Table 6).

The group with comorbid depressive disorder (with or without demoralization) exhibited an overall worse psychopathological profile with significantly higher scores in all distress measures of SIS, BDI-II, and EAT, and significantly lower scores in all PWB scales compared to the no comorbidity group. The comorbid demoralization group instead was partially worse off compared to those with no comorbidity, with significantly lower PWB scores in environmental mastery, positive relations, purpose in life, and self-acceptance and higher scores in SIS subjective incompetence and BDI-II-depressive symptoms. The comorbid demoralization group compared to the comorbid depression group showed significantly lower BDI-II and EAT total scores.

Table 5. One-way MANCOVA and ANCOVA Comparisons of Unaffected, Demoralized, and Depressed ED Groups in Psychological Measures

Multivariate Analyses						
Measure	λ	<i>F</i>	<i>df</i>	<i>p</i>	Partial η^2	Observed power
PWB Scales	.494	4.023	12,116	<.0001*	.297	.999
Univariate Analyses						
	<i>MS</i>	<i>F</i>	<i>df</i>	<i>p</i>	Partial η^2	Observed power
PWB Autonomy	1364.234	7.652	2,62	.001*	.198	.938
PWB Environmental mastery	1639.198	17.116	2,62	<.0001*	.356	1.00
PWB Personal growth	672.660	5.563	2,62	.006*	.152	.838
PWB Positive relations	1787.872	12.723	2,62	<.001*	.291	.996
PWB Purpose in life	1026.541	10.076	2,62	<.001*	.245	.981
PWB Self-acceptance	1783.798	12.903	2,62	<.001*	.294	.996
EAT total score	6847.841	6.508	2,60	.002*	.176	.893
SIS total score	310.499	9.378	2,60	.0002*	.238	.973
BDI-II total score	1716.368	22.084	2,60	<.0001*	.424	1.00

Note. λ , Wilk's lambda; BDI-II, Beck Depression Inventory II; *df*, degrees of freedom; EAT, Eating Attitudes Test; *F* MANOVA *F*-test; *MS*, Mean square; Partial η^2 , partial eta-squared; PWB, Psychological Well-being Scales; SIS, Subjective Incompetence Scale
*Statistically significant after adjusting for multiple testing with Sidak's correction. Illness duration inserted as covariate.

Table 6. Post-hoc Comparisons of Unaffected, Demoralized, and Depressed ED Groups in Psychological Measures

Measure (Range)	A. No Comorbidity Group (n=20) <i>M±SD</i>	B. Comorbid Demoralization Group (n=15) <i>M±SD</i>	C. Comorbid Depressive Disorder Group (n=32) <i>M±SD</i>	Pairwise Comparisons	<i>p</i>	<i>d</i>
PWB-Autonomy (0-98)	62.16 ±12.79	52.07 ± 12.86	47.38±13.81	A vs B A vs C B vs C	- .001* -	0.811 1.122 0.355
PWB-Environmental mastery (0-98)	59.74 ±10.86	45.87±8.96	43.88±9.51	A vs B A vs C B vs C	.0002* <.0001* -	1.415 1.610 0.218
PWB-Personal growth (0-98)	66.58±7.29	63.67±10.07	56.47±12.85	A vs B A vs C B vs C	- .008* -	0.349 0.931 0.610
PWB-Positive relations (0-98)	70.11±7.74	55.07±10.68	51.63±14.23	A vs B A vs C B vs C	.007* <.0001* -	1.701 1.548 0.268
PWB-Purpose in life (0-98)	61.16±9.47	50.33±10.21	48.59±10.34	A vs B A vs C B vs C	.006* <.0001* -	1.139 1.279 0.172
PWB-Self-acceptance (0-98)	52.68±14.22	35.60±7.59	36.56±11.57	A vs B A vs C B vs C	.0002* <.0001* -	1.482 1.300 0.093
EAT total Score (0-120)	39.58±7.403	43.98±9.05	70.38± 5.71	A vs B A vs C B vs C	- .006* .014	0.556 4.901 3.896
SIS total Score (0-36)	13.10±5.69	19.60±5.42	20.50±6.11	A vs B A vs C B vs C	.017 .0002* -	1.199 1.268 0.156
BDI-II total Score (0-63)	12.52±9.27	22.13±5.78	30.07±10.00	A vs B A vs C B vs C	.017 <.0001* .014	1.240 1.839 0.911

Note. BDI-II, Beck Depression Inventory II; d, Cohen's d effect size; EAT, Eating Attitudes Test; M, mean; PWB, Psychological Well-being Scales; SD, standard deviation; SIS, Subjective Incompetence Scale.

*Statistically significant after adjusting for multiple testing with Sidak's correction. Illness duration inserted as covariate.

A one-way MANCOVA for CID items (with illness duration as a covariate) revealed statistically significant differences between the three groups: Wilks' $\lambda=.219$, $F(20,78) = 4.429$, $p<.0001$, partial $\eta^2=.532$. Power to detect the effect was 1.00. Given the significance of the overall test, Tests of Between-Subjects Effects were examined. Significant group effects with large effect sizes for group were found in CID items concerning depressed mood, guilt, suicidality, work and activities, energy and fatigue, general and somatic anxiety, and insomnia items. See Table 7.

Post-hoc comparisons with Bonferroni corrections were conducted to compare the three groups in CID items (see Table 8). The ED group with comorbid depressive disorder (with or without demoralization) exhibited an overall worse psychopathological profile with higher average scores in most CID items showing large effect sizes: significantly higher scores in depressed mood, energy and fatigue, and late insomnia compared to the other two groups and significantly higher scores in guilt, suicidality, work and interests compared to the no comorbidity group. Moreover, the demoralized group was more similar in CID scores to unaffected patients, showing significantly less severe depressed mood, generalized anxiety and late insomnia scores compared to depressed ED patients with large effect sizes. Although the significance is lost with Sidak's correction in the late insomnia item, the effect size remains large, indicating significant differences between the groups.

The comorbid demoralization group shared with the comorbid depressive disorder group significantly greater feelings of guilt, suicidality, work and interests compared to unaffected patients with large effect sizes. Furthermore, ED patients with only demoralization exhibited scores which were intermediate between those reported by unaffected and depressed groups, in energy and fatigue, and somatic anxiety. However, in the later symptom, while differences were not statistically significant, a large effect size was observed for the difference in scores between only demoralized and depressed groups, indicating a significantly lower presence of somatic anxiety in demoralized ED patients compared to depressed ones.

Table 7. One-way MANCOVA Comparison of Unaffected, Demoralized, and

Depressed ED Groups in Depression Symptoms (CID items)

Multivariate Analyses						
Measure	λ	<i>F</i>	<i>df</i>	<i>p</i>	Partial η^2	Observed power
CID items	.219	4.429	20,78	<.0001*	.532	1.000
Univariate Analyses						
Variables	<i>MS</i>	<i>F</i>	<i>df</i>	<i>p</i>	Partial η^2	Observed power
CID Depressed mood	17.504	10.237	2,48	<.0001*	.299	.982
CID Guilt	5.474	5.023	2,48	.010*	.173	.791
CID Pessimism	6.482	2.621	2,48	.083	.098	.487
CID Suicidality	7.124	5.471	2,48	.007*	.186	.826
CID Work and activities	28.194	11.541	2,48	<.0001*	.325	.991
CID Energy and fatigue	9.903	4.389	2,48	.018	.155	.731
CID General anxiety	24.049	14.355	2,48	<.0001*	.374	.998
CID Somatic anxiety	16.786	8.840	2,48	.001*	.269	.963
CID Early insomnia	5.852	3.436	2,48	.040	.125	.618
CID Late insomnia	16.348	7.284	2,48	.002*	.233	.922

Note. λ , Wilk's lambda; CID, Clinical Interview for Depression; *df*, degrees of freedom; *F*, MANOVA *F*-test; *MS*, Mean square; Partial η^2 , partial eta-squared.

* Statistically significant after adjusting for multiple testing with Sidak's correction. Illness duration inserted as covariate.

Table 8. Post-hoc Comparisons of Unaffected, Demoralized, and Depressed ED Groups in Depression Symptoms (CID items)

CID items (Range 1-7)	A. No Comorbidity Group (n=12)	B. Comorbid Demoralization Group (n=13)	C. Comorbid Depressive Disorder Group (n=27)	Pairwise Comparisons	<i>p</i>	<i>d</i>
CID Depressed mood	2.42±1.24	3.00±1.22	4.30±1.38	A vs B	-	0.491
				A vs C	.001*	1.439
				B vs C	.024	0.999
CID Guilt	2.58±1.16	3.77±0.72	3.70±1.10	A vs B	.020	1.291
				A vs C	.007*	1.025
				B vs C	-	0.072
CID Pessimism	2.17±1.47	2.69±1.70	3.37±1.52	A vs B	-	0.340
				A vs C	-	0.818
				B vs C	-	0.441
CID Suicidality	1.25±0.45	2.46±1.27	2.37±1.30	A vs B	.008*	1.305
				A vs C	.025	1.025
				B vs C	-	0.071
CID Work and activities	1.50±0.90	3.15±1.46	4.11±1.78	A vs B	.038	1.401
				A vs C	<.0001*	1.702
				B vs C	-	0.583
CID Energy and fatigue	2.33±1.37	3.38±1.50	3.89±1.53	A vs B	-	0.760
				A vs C	.013	1.079
				B vs C	-	0.344
CID General anxiety	1.83±0.83	2.69±1.03	4.11±1.55	A vs B	-	0.951
				A vs C	<.0001*	1.697
				B vs C	.036	1.034
CID Somatic anxiety	1.83±0.94	2.15±1.40	3.63±1.64	A vs B	-	0.277
				A vs C	.002*	1.257
				B vs C	-	0.965
CID Early insomnia	1.17±0.58	1.62±1.19	2.30±1.54	A vs B	-	0.494
				A vs C	-	0.873
				B vs C	-	0.485
CID Late insomnia	1.75±1.422	1.92±1.441	3.37±1.597	A vs B	-	0.124
				A vs C	.013	1.075
				B vs C	.017	0.960

Note. CID, Clinical Interview for Depression; d, Cohen's d effect size; M, mean; SD, standard deviation.

*Statistically significant after adjusting for multiple testing with Sidak's correction. Illness duration inserted as covariate.

2.9 Discussion

The current study is the first to concomitantly assess demoralization, subjective incompetence, and depressive disorders in a psychiatric sample, and more specifically in eating disorder patients. Moreover, the present study to the best of our knowledge is the first to compare the psychological profiles in terms of specific depressive symptomatology, psychological distress and well-being, of ED patients with demoralization syndrome, ED patients with depressive disorders, as well as ED patients who do not present any marked mood disturbance.

2.9.1 Demoralization, Subjective Incompetence, and Depression in EDs

With regard to depressive symptomatology the present study documented the well-known high comorbidity between eating disorders and depression, consistent with prevalence rates in the literature ranging from 40-80% (Godart et al., 2007; Mischoulon et al., 2011). Indeed ED patients develop depression more frequently compared to the general population, particularly in inpatients with AN (Fichter & Quadflied, 2004; Godart et al., 2015; Kaye et al., 2008) and exhibit higher depression scores (Schorr et al., 2016).

In accordance with the literature, demoralization in the ED group was very common affecting roughly 60% of the patient sample. Indeed in psychiatric samples demoralization is present in roughly 50% of patients, as reported in previous studies on EDs (Fassino et al., 2007), cyclothymia and substance use disorders (Tomba, Rafanelli, Grandi, Guidi, & Fava, 2012; Tossani et al., 2013). Moreover, as in other controlled comparisons (for review see Tecuta et al., 2015), demoralization was more frequent in our ED patient group (all females) than in the general population sample. High rates of demoralization in EDs are consistent with previous findings suggesting that EDs, particularly anorexia nervosa, is characterized by helplessness rather than a sense of mastery in stress-provoking scenarios, compared to non-ED affected individuals (Troop & Treasure, 1997).

Subjective incompetence, considered the clinical hallmark of demoralization, was also significantly more elevated in ED patients compared to the general population sample, being similar to levels reported by cancer patients (Cockram et al., 2009). Similar studies have found that general feelings of inadequacy or feelings of lack of control over one's life abound in ED patients (Garner, 1991) as well as a tendency to attribute negative situations to the self, independently of depressed mood (Morrison, Waller, & Lawson, 2006). Associations between feelings of ineffectiveness and incompetence and pathological eating-related symptomatology such as disordered eating and laxative use, have been documented in both non-ED college age women and AN patients (Dancyger & Garfinkel, 1995; Kovacs & Palmer, 2004; Ferrier & Martens, 2008), also when controlling for depression (Jacobi et al., 2004).

High subjective incompetence in patients struggling with eating disorders who are entering treatment may be worthy of clinical attention, as feelings of subjective incompetence have been found to be associated with denial and behavioral disengagement in young cancer patients (Cockram et al., 2009). In EDs, higher ineffectiveness was found to be the only significant predictor of eating pathology along with fear of losing control (Froreich, Vartanian, Zawadzki, Grisham, & Touyz, 2016) as well as being significantly associated with worse prognosis (Bizeul, Sadowsky, & Rigaud, 2001). Moreover, such a tendency towards self-blame and feelings of inadequacy may interfere with treatment adherence. In qualitative studies of recovered chronic anorexia nervosa patients who suffered more than 15 years with the illness, patients reported a significant lack of agency and low self-efficacy about their ability to make changes. When active pursuit of symptom reduction took place, patients perceived themselves are more efficacious (Dawson et al., 2014) indicating the clinical importance that demoralization and subjective incompetence may have on the recovery process. Given such findings, authors suggest that eating pathology may be the result of an attempt to manage negative feeling states of incompetence either directly or mediated by a compromised self-esteem (Ferrier & Martens, 2008).

2.9.2 Demoralization and Depression Overlap and Distinction

Demoralization in ED patients was found to be distinguishable from major depression and persistent depressive disorder diagnoses, with a total of 20 cases of demoralization syndrome in absence of depression, and six cases of depressive illness in absence of demoralization syndrome. The result is in line with findings reported in other medical populations in the literature (Tecuta et al., 2015) including outpatients (Mangelli et al. 2005) inpatients (Galeazzi et al. 2004), primary care (Ferrari et al. 2008), in cardiac conditions (Grandi et al. 2001, 2011; Rafanelli et al. 2003, 2005, Rafanelli, Milanese, & Roncuzzi, 2009; Ottolini, Modena, & Rigatelli, 2005; Sirri et al. 2010), endocrine (Sonino et al. 2004, 2007), hypertension (Sonino et al. 2011; Rafanelli et al. 2012), functional gastrointestinal disorders (Porcelli et al. 2000), dermatology (Picardi et al. 2005) and oncology (Grassi et al. 2005) patients. However, the overlap between depressive disorders and DCPR-demoralization was significant, a finding that had never been explored statistically before. While demoralization and depression are significantly correlated, it may be clinically useful to explore phenomenological differences in psychological and depressive symptomatological manifestations in the two conditions to better understand their possible relationship.

2.9.3 Characterization of Demoralization and Depression in EDs

Long considered the clinical hallmark of demoralization in theoretical papers (de Figueiredo & Frank, 1982), subjective incompetence characterized both demoralized and depressed patients, most of whom were concurrently demoralized. Previously authors have found how elevated levels of perceived ineffectiveness, a similar construct, characterized both eating disorder patients (Jacobi et al., 2004; Foreich et al., 2016) and patients with major depression (Jacobi et al., 2004). Moreover, high ineffectiveness was found to be significantly higher in ED patients with comorbid mood disorders than those without (Brand-Gothelf, Leor, Apter, & Fennig, 2014).

Pairwise comparisons between ED patients without mood disturbance, demoralized, and depressed ED groups revealed differences in specific depressive symptoms. ED patients with only

demoralization were moderately affected by depressive symptoms concerning energy and fatigue, and somatic anxiety, having intermediate scores between unaffected and depressed groups in such items. Moreover, demoralized ED patients were not characterized by pronounced depressed mood, showing no significant difference compared to the unaffected group. Depressed ED patients instead exhibited significantly greater depressed mood, greater energy problems and fatigue, and more severe late insomnia compared to both unaffected and demoralized patients, all common hallmark symptomatology of major depressive disorder, as well as exhibiting associated features such as greater generalized anxiety, associated with full-blown major depression (APA, 2013). Indeed the present data supports previous findings in which demoralization was shown to be distinguishable from depression in factor analytic studies (Kissane et al. 2001; Jacobsen et al. 2006; Clarke, Kissane, Trauer, & Smith, 2005), as well as shown to be distinct from anhedonia, a core feature of major depressive disorder and grief (Clarke et al. 2005). Moreover, the results underscore previously discussed phenomenological observations (de Figueiredo, 1993) on the differentiation between demoralization and major depression. Demoralization according to authors (Klein et al., 1980), as seen also in the present data, seems to be descriptive of a reactive form of distress, characterized by symptoms that are not necessarily neurovegetative, while depression in EDs may be more in line with traditionally conceptualized "endogenomorphic" depression (Paykel, 2008) characterized primarily by an alteration of sleep cycle and other physiological changes.

Nonetheless, shared symptomatic presentations emerged for demoralized ED patients and depressed ED patients, specifically in intensity of feelings of guilt, hopelessness and thoughts of suicide, as well as impairment in daily work and other activities, independently of illness duration and severity. Guilt and hopelessness have been commonly reported in depression in general as well as in depressed ED patients, in particular those with a tendency towards self-criticism (Steiger, Leung, Puentes-Neuman, & Gottheil, 1992). Demoralized individuals may also progress towards hopelessness and suicidality (de Figueiredo, 2013; Catanese, John, Di Battista, & Clarke, 2009).

Additionally, a sense of failure and incompetence, central features of demoralization, may trigger in demoralized patients feelings of guilt, similarly to those seen in depression. Impairment in daily work and activities also emerged as a shared feature however possibly stemming from different mechanisms: while both depressed and demoralized individuals may be characterized by alterations in motivation, in demoralization, the low motivation to action may be caused primarily by a sense of being incompetent in choosing which direction to invest one's energy, while in depression pervasive impairment in all aspects of life include complete absence of motivation, that is, anhedonia (de Figueiredo & Frank, 1982; de Figueiredo, 1993, 2013). However such specific underlying differences were not investigated in our sample and such theoretical distinctions remain speculative.

In terms of eating-related pathology, the ED group with comorbid depression (with or without demoralization) represented the most impaired category, compared to both unaffected and only demoralized patients. It is well-documented that eating disorder severity is significantly associated with severity of the depression (Herpertz-Dahlmann e Remschmidt, 1993). Depressed ED patients not only exhibit greater dietary restriction, but worse body dissatisfaction and global functioning and greater personality-related pathology compared to unaffected ED patients (Bulik, Sullivan, Carter, & Joyce, 1996; Hughes et al., 2013; Brand-Gothelf et al., 2014). Current findings are therefore consistent with the literature which underscores how comorbid depression is associated with worse psychopathological status of ED patients as well as constitute a complication in treatment outcomes (Lowe et al., 2001; Berkman et al., 2007; Hughes et al., 2013). The syndrome of demoralization instead in the current study was, contrary to expectations, not found to be associated with an overall worse eating disorder pathology as found in previous studies (Fichter, Quadflieg, & Brandl, 1993; Fichter & Quadflieg, 2001). This finding may be due to the use of the EAT measure, commonly considered a more appropriate measure of restriction, in a sample of

various ED diagnoses which also include binge-eating disorder, not characterized by dietary restrictive patterns (Garner & Garfinkel, 1979).

Positive functioning is significantly compromised in EDs compared to healthy controls (Tomba et al., 2014). In the current study demoralized ED patients reported greater impairment in psychological well-being compared to non-demoralized ones, in line with previous studies in medical patients (Grandi et al., 2011; Rafanelli et al., 2012). Specifically, demoralized ED patients exhibited reduced scores in dimensions concerning environmental mastery, positive relations with others, purpose in life and self-acceptance, in accordance with a previous report in which demoralized individuals are compromised in specific domains, primarily environmental mastery and positive relations with others (Grandi et al., 2011). Depressed ED patients instead showed impairment in almost all PWB dimensions, in accordance with previous findings on psychological well-being (Rafanelli et al., 2000) and on other related constructs. ED patients with comorbid mood disorders indeed report worse quality of life (Padierna, Quintana, Arostegui, Gonzalez, & Horcajo, 2000) and social functioning (Hatsukami, Mitchell, Eckert, & Pyle, 1986) compared to ED patients without such comorbidity.

Overall our data confirms that major depression constitutes the most compromised mood profile in terms of worse depressive and eating-related symptomatology in EDs as well as presenting the novel finding of significant greater impairment in numerous psychological well-being dimensions compared to non-depressed ED patients. The current findings suggest that demoralization may represent in EDs an intermediate state of distressed mood as suggested by previous authors. Demoralization indeed may represent a transient reaction to the stress of having an illness (Schmale & Engel, 1967), such hypothesis being in part supported by the finding that demoralized ED patients had, on average, the lowest number of treatment attempts compared to unaffected and depressed patients, possibly attempting treatment for their first time. Such a demoralized state however warrants clinical attention as such a profile was found to be a comprised

one not only in terms of psychological well-being, but in increased depressive symptomatology, indicating demoralization's clinical utility as a marker of increased disrupted mood with may or may not reach diagnostic thresholds. Other possible interpretations of results include considering demoralization a possible prodrome (Kissane et al., 2001; Rickelman, 2002; de Figueiredo, 2013) or vulnerability of depression, specifically its component of hopelessness (Abramson et al., 1989). Moreover demoralization may constitute subclinical residual symptomatology of a past depressive episode, frequent in sufferers of major depression (Fava & Mangelli, 2001). However, such interpretations would necessitate longitudinal studies as well as retrospective assessments.

Several limitations should be underlined. Considering within the ED group with comorbid depressive disorders both patients with and without comorbid demoralization limits observations and the possibility to further distinguish demoralization from depression. A larger sample size with a more numerous group of ED patients with a comorbid depressive illness in absence of demoralization syndrome would have permitted appropriate comparisons. The study did not consider personality traits. Additionally, considering all diagnostic subgroups in one sole sample may be misleading as each diagnosis is characterized by specific clinical features and developmental and prognostic trajectories (APA, 2013). Nonetheless, several implications may be discussed.

2.10 Clinical Implications

In the current study we investigated a mood-related construct derived from psychosomatic literature, demoralization, and a closely related concept of subjective incompetence, in a sample of inpatients and outpatients with eating disorders. Moreover, we compared psychological profiles of demoralized ED patients with ED patients suffering from full-blown depressive disorders, in order to better specify their clinical characterization as well as their possible relationship in terms of severity of symptomatology. While depression emerged as the condition associated with the worse overall psychopathological status and condition in terms of both distress and psychological well-

being, demoralization indeed does emerge as a marker of increased distress which has not yet reached diagnostic thresholds, possibly representing an indicator of worsening overall status in terms of psychological well-being and depressive symptoms but not of eating-related psychopathology.

The distinction between demoralization and depression, seemingly similar constructs, may be of particular usefulness in clinical settings as frequently a diagnosis of major depression leads to the application of pharmacological treatments which may not always be beneficial if the patient is not depressed or has not developed full-blown depression yet (Offidani, Fava, Tomba, & Baldessarini, 2013). Such differentiation may be of clinical importance in EDs in particular as a diagnosis of depression in this population, especially in AN may be difficult to determine given the overlap between somatic sequelae of the ED, specifically malnutrition, and psychiatric symptoms (Keys et al., 1950; Viesselman & Roig, 1985; Pollice, Kaye, Greeno, & Weltzin, 1997; Meehan et al., 2006; Mattar et al., 2010). Moreover, the applicability of a major depression diagnosis in EDs seems to have limited clinical utility, as recent data suggests a lack of efficacy of antidepressants in the treatment of depressive symptoms in AN and BN (Mischoulon et al., 2011).

The identification of a similar yet distinct state based on psychosomatic literature such as demoralization, which is not necessarily confounded with physiological symptoms present in medical and psychiatric illnesses such as EDs, may be helpful in both improving assessment of distress and treatment efforts for mood symptomatology as well as in avoiding unnecessary treatments. Often ignored subclinical symptomatology, considered within a longitudinal staging perspective, has profound preventive and prognostic value in determining outcomes and clinical phenomena such as drop-out and relapse as well as in treatment-planning (Fava, 1999; Cosci & Fava, 2013).

2.11 Implications for Future Research

The presence of demoralization, associated with worsen clinical and psychological status in ED patients, may halter the recovery process on the one hand, but on the other may be associated with greater response to treatment, as hypothesized by Frank and Frank (1993) due to their readiness to seek help and responsiveness to encouragement. Longitudinal studies in which demoralization is assessed over time may provide additional information on the demoralized state in eating disorders and the course of treatment as well as better delineate the temporal relationship between depression and demoralization.

CHAPTER 3

3. Study 2: Demoralization in the Treatment of Eating Disorder Outpatients

3.1 Treatment of Eating Disorders

Eating disorders (EDs) are complex medical and psychiatric illnesses that can have serious consequences for health, relationships and general functioning, requiring multidisciplinary evidence-based treatment approaches. Treatment of eating disorders include psychological therapies with the integration of nutritional rehabilitation and medical support if necessary, as recommended in several healthcare practice guidelines including the NICE guidelines in the United Kingdom (National Health Service, 2004) and the American Psychiatric Association guidelines in the United States (APA, 2010).

Substantial developments in the field of psychological therapies for eating disorders have been made in the last decade or so. A recent review (Waller, 2016) suggest that cognitive behavioral therapies (CBT) have recently consolidated their position for both bulimia nervosa and binge eating disorders in adults. Some evidence suggests that the reach of CBT has been recently expanded to anorexia nervosa and adolescents with EDs (Pretorius et al., 2009; Dalle Grave, Calugi, Conti, Doll, & Fairburn, 2013; Fairburn et al., 2009; 2013). Cognitive behavioral therapy is an umbrella term covering all psychotherapeutic interventions which target distorted thoughts and cognitive processes thought to be the basis for maladaptive behaviors and emotional distress which maintain psychopathology. Developed first by Albert Ellis (1957) as Rational Therapy, later on renamed Rational Emotive Behavioral Therapy, and subsequently by Aaron Beck (1967) as Cognitive Therapy, it has become one of the most widespread evidence-based psychotherapeutic approaches applied in clinical and medical settings.

CBT generally has three overlapping phases. The main goal of the first phase is psychoeducation, that is, educating the patient about their disorder and the processes that maintain it. Particularly in EDs, patients are helped to increase the regularity of their eating, and to resist the

urges to binge eat and purge if bulimic symptomatology is present. Cognitive therapies make use of self-monitoring of behaviors, emotions and thoughts through detailed diaries of food intake, binge eating, purging, and the closely antecedent events and cognitions and subsequent emotional states. Such observations constitute the basis for each therapy session. In the second phase, behavioral exercises may be introduced aimed at reducing dietary restraint by broadening food choices and exposure to avoided foods with subsequent identification and disputing of dysfunctional cognitions related to eating, weight, and shape. The third stage concerns primarily the maintenance of change with the introduction of relapse prevention strategies (Agras, Walsh, Fairburn, Wilson, & Kraemer, 2000). For manualized CBT however, treatment outcome in the early stages of development was found to not be entirely satisfactory without the integration of strategies aimed at improving the interpersonal realm (Fairburn, Jones et al., 1993). Recently, clinical trials testing CBT have increased focus on interpersonal processes, including the relationship between therapist and client, finding that alliance is an important factor in treatment outcome (Loeb et al., 2005).

3.2 Treatment Outcomes in Eating Disorders

In eating disorder research, treatment response and outcomes are of utmost importance as treatment options often yield mixed or even inconclusive results (Hay, 2013). For adults with anorexia nervosa (AN) and bulimia nervosa (BN), CBT has been found to improve general functioning by teaching patients to manage food intake, reduce maladaptive behaviors such as purging and fasting, and addressing distorted cognitions regarding weight and shape, successfully tackling acute symptoms (Fairburn, Marcus, & Wilson, 1993; Bulik, Berkman, Brownley, Sedway, & Lohr, 2007). A recent review on the effectiveness of CBT in AN has reported significant improvements in body mass index, eating-disorder symptoms, and broader psychopathology, as well as reductions in risk of relapse and increased treatment adherence. CBT was also found to minimize drop-out rates in AN. However such treatment effects for CBT were not consistently superior to other treatments (Galsworthy-Francis & Allan, 2014; Kass, Kolko, & Wilfley, 2013). Family-Based Therapy in

recent studies has emerged as the treatment of choice for younger cases (Lock et al., 2010; Le Grange et al., 2014; Le Grange, Lock, Agras, Bryson, & Jo, 2015). Indeed Maudsley family-based therapy is the most established treatment for youth with anorexia nervosa and may be useful for youth with bulimia nervosa. For normal-weight cases some evidence emerges that other types of therapies can be as effective as CBT (Kass et al., 2013).

With regard to BN, many randomized controlled trials have shown greater results for CBT in reducing bulimic symptomatology and distress such as depression compared to no treatment or to other forms of psychotherapy (Whittal, Agras, & Gould, 1999; Wilson & Fairburn, 2002; Hay, Bacaltchuk, Stefano, & Kashyap, 2009). A recent review on binge-eating disorder treatment has instead underscored how both CBT and interpersonal psychotherapy (IPT) which targets the interpersonal difficulties that may maintain ED symptoms, may be the most effective forms of intervention in reducing binge-eating episodes as well as other associated factors such as restriction and excessive disinhibition towards food. Both CBT and IPT remain the most established treatments for bulimia nervosa and binge eating disorder. However, in bulimia nervosa the time course for CBT has been shown to be faster than in IPT (Agras et al., 2000). Nonetheless in patients suffering from BED neither CBT nor IPT have been shown to consistently produce weight loss (Grilo, 2017).

Contributing to difficulties in ED treatment outcomes research may be the high variability in eating disorder specialist clinicians in adhering to evidence-based protocols (ranging from 6 to 35%). Most clinicians instead report utilizing a combination of techniques resulting in an eclectic approach, representing a problematic issue in replicability studies (Kazdin, Fitzsimmons-Craft, & Wilfley, 2017). Other issues that may complicate treatment outcomes and consequently research in EDs include medical complications and high comorbidity rates with other psychiatric disorders (APA, 2013) the most common being depression (Mischoulon et al., 2011), previously and extensively discussed in Chapter 2.

Another crucial issue in ED treatment is the phenomenon of drop-out. The term "dropout" is mostly used to indicate a unilateral termination of regular treatment by the patient. While for many years the phenomenon of drop-out was considered qualitative data drawn from clinical trials, recently it has become the main focus of studies as both clinicians and researchers specialized in EDs recognize its implications for long-term recovery (Vandereicken, & Pierloot, 1983; Baran, Weltzin, & Kaye, 1995; Halmi et al., 2005). Rates of drop-out are very high in outpatients with EDs, with up to 70% of patients dropping out from treatment (Swan-Kremeier, Mitchell, Twardowski, Lancaster & Crosby, 2005). Reported drop-out rates for patients with anorexia nervosa from specialized inpatient eating disorder programs range from 20.2% to 51% (Wallier et al., 2009). Premature interruption of treatment severely complicates treatment outcome research which may contain substantial amounts of missing data and consequently report results on a biased sample. Moreover, predictors of drop-out thus far identified are difficult to assess because of methodological flaws and limited sample sizes in many studies. So far, authors have found no evidence that baseline ED clinical severity, psychiatric comorbidity or treatment issues influence drop-out, the most consistent predictor being only the binge-purging subtype of anorexia nervosa. Two psychological traits, high maturity fear and impulsivity, and two personality dimensions, that is low self-directedness, and low cooperativeness have been found to predict interruption of treatment as well (Fassino, Pierò, Tomba, & Abbate-Daga, 2009).

3.2.1 Mood Symptomatology in ED Treatment Outcomes

Within the realm of mood symptomatology, the comorbidity of depression diagnosis has received the most attention, being extensively studied in outcomes research given the high comorbidity rates that vary from 40-80% (Godart et al., 2007; Mischoulon et al., 2011). Methodological and statistical difficulties in testing the longitudinal relationships in complex comorbidity patterns pose a great challenge as several different causal relationships may account for the emergence of two or more comorbid disorders (Fava et al., 2014). Indeed the relationship between depression and EDs

remains unclear, as one disorder may precede the other, while on the other hand share specific risk factors (biological, genetic, cognitive, emotional-regulation issues) accounting for simultaneous onset of both diagnoses as underscored by previous studies (Rodgers & Paxton, 2014).

One of the main concerns regarding comorbidity between depression and EDs is the impact such co-occurrence may have on treatment outcome. Studies have documented inconsistent results: presence of depression predicts poor immediate or long-term outcome of cognitive behavior therapy in patients with bulimia nervosa (Bossert Schmolz, Wiegand, Junker, & Krieg, 1992; Bulik, Sullivan, Joyce, Carter, & McIntosh, 1998; Agras et al., 2000) but not in anorexia nervosa (Herpertz-Dahlmann, Wewetzer, & Remschmidt, 1995; Collin, Power, Karatzias, Grierson, & Yellowlees, 2010). While depression symptom reduction early in treatment has predicted better response in BN (Thompson-Brenner et al., 2015) recently others suggest that severity of major depression should not be used to predict success or failure of treatment, specifically in AN (Calugi, Ghoch, Conti & Dalle Grave, 2014). Additionally, antidepressant efficacy in the treatment of depression in EDs has also been explored with inconclusive findings (Mischoulon et al., 2011). In light of such data and limits in the role of mood symptomatology in ED treatment outcomes, the exploration of other clinical phenomena and psychological aspects is needed.

One construct taken from psychosomatic and psychotherapeutic-focused literature which may be useful in eating disorder treatment is subjective incompetence. Subjective incompetence is defined as the perceived incapacity to "perform tasks and express feelings deemed appropriate in a stressful situation" (de Figueiredo & Frank, 1982, p. 353) which is thought to be common and clinically relevant in medical patients and to be the clinical hallmark of demoralization (Fava et al., 1995; Tecuta et al., 2015; Fava et al., 2017). The psychological state is thought to characterize psychotherapy-seeking patients as well as influence outcomes is demoralization. Frank (1961) first introduced the term demoralization syndrome as a definite cluster of symptoms in which one primarily experiences persistent feelings of failure to meet one's own or others' expectations,

hopelessness, helplessness, an inability to cope and problem solve. A recent review (Tecuta et al., 2015) found demoralization to be extremely common in medical patients suffering from a wide range of illnesses, from cardiovascular and oncological diseases to psychiatric illnesses (Tomba et al., 2012; Tossani et al., 2013). In eating disorders, two studies so far had documented demoralization finding a high prevalence in EDs (48%) and in inpatients with anorexia nervosa (AN) (49.1%) (Fassino et al., 2007; Abbate-Daga et al., 2013). In a few studies which have assessed demoralization in EDs with various self-rating questionnaires, authors found a significant association with worse eating-related symptomatology (Fichter, Quadflieg, & Brandl, 1993; Fichter & Quadflieg, 2001). Moreover, demoralization was found to correlate with worse scores in body image, general psychopathology, compensatory behaviors and bulimic symptoms in a sample of patients with anorexia nervosa, bulimia nervosa, binge-eating disorder, and eating disorder not otherwise specified (EDNOS) diagnoses (Fichter & Quadflieg, 2001). Additionally, compared to obese patients, BED and BN patients have reported significantly higher demoralization scores (Fichter et al., 1993). Despite such findings in the literature, demoralization diagnosis has not been found to be predictive of treatment response when active psychotherapy was involved. The syndrome may be predictor of greater response at follow-up only when non-specific therapeutic ingredients are involved in a treatment condition (Tomba, Tecuta, Guidi, Grandi, & Rafanelli, 2016).

Its clinical hallmark, subjective incompetence, is associated with negative coping styles, specifically denial, behavioral disengagement and self-blame in cancer patients (Cockram et al., 2009). According to de Figueiredo (2013) subjective incompetence, in the presence of distress, can progress to helplessness and then hopelessness and eventually suicidality, representing a clinical progression of increasingly worsening distressed states. Bruch (1962) first reported disturbances in self-concept in ED patients in terms of a “paralyzing sense of ineffectiveness” (p. 191) as one of three characteristic psychopathologic features of eating-disordered patients. Cognitive therapies

place negative self-concept as a central part of both onset and maintenance of eating disorders (Cooper, 2005). Indeed specific feelings of inadequacy coupled with feelings of lack of control over one's life abound in ED patients (Garner, 1991). High levels of perceived ineffectiveness characterize both eating disorder patients and patients with major depression alike (Jacobi et al., 2004). Ineffectiveness, in relation to other factors such as negative emotionality and perfectionism, are commonly cited as predisposing and maintenance factors of EDs and are receiving increased attention (Jacobi et al., 2004; Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006; Wade, Wilksch, Paxton, Byrne, & Austin, 2015; Froreich et al., 2016). Moreover, such themes of inadequacy as well as feeling stuck and hopeless characterize the recovery process of EDs and are considered by patients themselves to be obstacles to treatment in qualitative studies (Wade et al., 2011; Nordbø et al., 2012; Dawson et al., 2014; Robinson et al., 2015). Instead, most quantitative studies have utilized the Ineffectiveness subscale of the EDI- 2 (Garner, 1991) which is a composite scale of self-esteem related items and Personal Alienation subscale, rather than a construct specific instrument. A specific instrument for feelings of incompetence, the Subjective incompetence Scale (Cockram et al., 2009), has never been used in EDs before.

3.2.2 Positive Functioning in ED Treatment Outcomes

An additional problematic area for treatment efforts is the neglect of positive functioning and positive characteristics as outcomes, a domain underscored by the clinimetric approach which aims to expand assessment to clinical phenomena ignored by customary and traditional taxonomies (Fava, Tomba, & Sonino, 2012). In both standard assessment and treatment approaches most studies focus on pathological symptomatology and its reduction, and modifications of physical and behavioral aspects, ignoring fundamental positive aspects such as quality of life and psychological well-being (Ackard, Richter, Egan, Engel, & Cronemeyer, 2014; Tomba et al., 2014; Tomba, Tecuta, Schumann & Ballardini, 2017). Indeed, gains in positive functioning are frequently not examined, despite studies documenting how such qualities are persistently compromised in various

psychiatric illnesses including eating disorders (Tomba et al., 2014) and are correlated with increased vulnerability to future adversity (Ryff, 2014; Fava, 2016).

Placing attention on positive characteristics falls within the branch of positive psychology, whose aim is to shift the focus of clinical psychology towards healthy optimal functioning characteristics, outcomes and development rather than on dysfunctional negative aspects, a focus derived from the disease model on which psychiatry is historically based. Positive psychology additionally aims to broaden definitions of mental health towards the inclusion of positive qualities and characteristics as well as optimal development and functioning (Hasler, 2016). Such a shift has profound clinical implications as bringing an individual out of negative functioning is one form of success, while facilitating progression towards restoring positive functioning is quite another (Fava & Tomba, 2009). Qualities and factors such as autonomy, positive affect, generosity and social support are associated with quality of life and overall well-being by the World Happiness Report 2016 Update (Helliwell, Layard, & Sachs, 2016), a finding non-existent for negative affect, which is instead commonly considered the main target of psychiatric interventions.

In the literature several definitions of well-being in psychology have been formulated. The most widespread of these are found in different conceptualizations of subjective well-being, defined as an individuals' perceptions and evaluations of their own lives in terms of psychological, emotional and social functioning. Subjective well-being is however commonly operationalized as simply the presence of positive emotions and satisfaction (Snyder & Lopez, 2002) a somewhat limited definition. As an alternative, the psychological well-being model introduced by Ryff (1989), synthesizes clinical and personality theorists' conceptions of positive functioning into a more comprehensive model of well-being. Ryff's model is one of the most rigorously tested and broadens the definition of subjective well-being to include domains of positive functioning beyond satisfaction and the presence of positive emotions. The author's model is considered an eudaimonic one (Ryff, 1989) being derived from Jahoda's mental health criteria (Jahoda, 1958) which

encompasses specific domains that contribute to the development of optimal functioning of human beings and the fulfillment of one's potential. The model contains six psychological dimensions which are highly inter-related: autonomy, self-acceptance, a sense of continued growth and development, the belief that life is purposeful and meaningful, and the capacity to master effectively one's environment and quality relationships with others. Several clinical studies on psychological well-being in psychiatric populations have been conducted underscoring impairments in positive functioning in addition to substantial presence of distress, yielded substantial support to this model (Fava & Tomba, 2009; Stangier et al., 2013; Kennard et al., 2014). Unlike other well-being definitions, the model of psychological well-being has been operationalized into an empirically validated instrument, Ryff's (1989) Psychological Well-Being Scales and serves as the theoretical basis for a specific psychotherapeutic intervention, Well-Being Therapy (Fava, 2016) that has recently been tested a patient with anorexia nervosa (Tomba & Tecuta, 2016).

Specifically in treatment outcomes research on EDs, to date when positive mental health has been examined, the focus has been exclusively on well-being in terms of subjective well-being and quality of life (Doll, Petersen, & Stewart-Brown, 2005; Mond, Hay, Rodgers, Owen, & Beumont, 2005; Jenkins, Hoste, Meyer, & Blissett, 2001). In our recent study, psychological well-being was found to be impaired in all ED diagnostic groups compared to healthy peers (Tomba et al., 2014). While in the subsequent study (Tomba et al., 2017), psychological well-being was found to change with CBT-based treatment, the specific mechanisms of change remain unexplored.

Ignored clinical phenomena such as positive functioning, in conjunction with demoralization and feelings of subjective incompetence, may very well demarcate major prognostic and therapeutic differences among patients who otherwise seem deceptively similar due to a shared diagnosis (Fava, Tomba, & Sonino, 2012). These clinical aspects fall within the realm of clinimetrics, a term introduced by Feinstein (1983) to refer to clinically relevant yet frequently ignored information such as patterns of symptoms, severity of illness, effects of comorbid

conditions, timing of phenomena, rate of progression of illness, functional capacity and other aspects such as positive functioning and stress-related constructs. Excessive focus is given to information that does not necessarily derive from clinical examination and interaction with the patient.

3.3 Rationale

To date no studies have explored whether demoralization is abated by treatment in eating disorder patients. Furthermore, it may be useful to consider the role of subjective incompetence, the clinical hallmark of demoralization, in treatment outcomes considering not only eating-related pathology but also psychological well-being. As demoralization and subjective incompetence are associated with worse outcomes and may be obstacles to treatment, respectively speaking, their reduction may be of utmost clinical importance. Moreover, exploring the role of feelings of incompetence in treatment response may offer treatment insights to further improve symptom reduction and psychological well-being gains.

3.4 Objectives

The main aim of this study is to test the role of subjective incompetence in the treatment of outpatients with EDs. The specific objectives are:

1. Investigate whether demoralization diagnoses and severity of subjective incompetence, as well as associated depression diagnoses and depressive symptom severity, decrease significantly by mid-treatment assessment.
2. Investigate whether changes in subjective incompetence predict treatment response in terms of reduced ED-related symptomatology and increased psychological well-being levels, while controlling for illness severity and baseline depression severity.

3. Explore whether baseline distress in terms of subjective incompetence, demoralization, and depression, and psychological well-being dimensions predict drop-out/failure to engage status in ED outpatients independently of illness severity.

3.5 Hypotheses

1. Demoralization and subjective incompetence will be significantly reduced in terms of diagnoses of Diagnostic Criteria for Psychosomatic Research-demoralization and Subjective Incompetence Scale scores. Depressive disorder diagnoses and severity of symptoms will also be abated by treatment in accordance with the literature.

2. Changes in subjective incompetence will predict reductions in eating disorder symptomatology, and increases in psychological well-being dimensions most closely associated with demoralization, that is, environmental mastery, autonomy and purpose in life, independently of depression and illness severity.

3. Given the exploratory nature of the aim, no hypothesis is formulated.

3.6 Methods

3.6.1 Participants

A convenience sample of consecutively screened out-patients (n=60) who met DSM 5 diagnostic criteria for EDs, anorexia nervosa (AN), bulimia nervosa (BN), Binge-eating disorder (BED) and otherwise specified eating disorder (OSFED), began an integrated treatment in a specialized private out-patient clinic for the treatment of EDs (Bologna, Italy). Diagnoses were established at intake by the clinic's psychologists which perform routine intake clinical interviews. Participants were informed about the opportunity to participate in the study by their assigned therapist before commencing treatment. In case of underage status, informed consent was collected from both the adolescent and the parents for participation in the study. All participants were assessed at baseline before commencing treatment (T0) and once again at mid-treatment (T1).

3.6.2 Measures and Clinical Variables

Patients were assessed at baseline and mid-treatment through the following interviews and self-rating questionnaires:

1) **The Structured Interview for the Diagnostic Criteria for Psychosomatic Research (DCPR)-**

Demoralization Criteria (Fava et al. 1995; Mangelli et al., 2007): The interview contains 58 questions with yes/no response which identify 12 psychosomatic syndromes including demoralization. Only demoralization syndrome presence was assessed through the corresponding 3 yes/no questions while the remaining DCPR syndromes were not considered in the present study. The primary aim of the DCPR is to provide a conceptual framework and assessment strategy for psychosomatic syndromes commonly encountered in the medical setting (Sirri & Fava, 2013; Fava et al., 2017). The authors base their demoralization operationalization on Schmale and Engel's giving up-given up complex (Schmale & Engel, 1967) and Frank's (1973) demoralization syndrome. The structured interview has demonstrated high inter-rater reliability and Cohen's kappa values ranging from 0.69 to 0.97 for the 12 syndromes. Cohen's kappa for demoralization was found to be 0.90 (Galeazzi et al., 2004). A control sample will be evaluated within the first study to collect initial data on demoralization prevalence in general population adolescents.

2) **Subjective Incompetence Scale (SIS; Cockram et al., 2009)** measures subjective incompetence, thought by authors to be the clinical hallmark feature of demoralization. It is a 12-item self-report questionnaire with no cut-off score, in which higher total scores indicating higher subjective incompetence (range 0-36). The SIS demonstrates high internal consistency with a reliability coefficient of 0.90. It asks subjects to consider the week preceding the day of assessment. The SIS demonstrates high internal consistency with a reliability coefficient of 0.90. The SIS has as of yet not been validated in adolescence. A control sample will be evaluated within the first study to collect initial data on SIS general population scores in adolescents.

3) **Beck Depression Inventory II** (BDI-II; Beck et al., 1996) is a self-rating 21 item questionnaire. A total score ranging 0-63 indicates depression severity with higher total scores indicate more severe depressive symptoms. Cut-off scores suggested by authors are the following: 0–13 (minimal), 14–19 (mild), 20–28 (moderate), and 29–63 (severe), with mean scores of 26.6 in mood disorders, and 28.1, 29.4, and 24.0 for major depressive episode, recurrent depression, and dysthymia, respectively. The BDI-II has shown convergent validity and stability in factorial structure in a wide variety studies on adolescent samples in multiple cultural settings with internal consistency described as around 0.9 and the retest reliability ranging from 0.73 to 0.96 (Krefetz et al., 2002; Osman et al., 2004; Wang & Gorenstein, 2013).

4) **Psychological Well-being Scales-PWB** (Ryff, 1989): an 84 item self-rated questionnaire that covers 6 inter-related areas of psychological well-being which allow the development of optimal functioning: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. The PWB does not have cut-off scores. Items are constructed on a six-point 1–6 Likert scale, yielding six subscale scores ranging from 14 to 84. Subscale scores range from 0-98 with higher scores indicate greater psychological well-being in specific dimensions. Cronbach's alpha coefficients in a sample of 321 individuals from the general population for the six scales ranged from .85 to .91. Test–retest reliability varied between .81 and .88, whereas validity correlations extended between .25 and .73 (Ryff & Singer, 1996). The Italian version was used (Ruini et al., 2003) with the following Cronbach alphas reported by Gremigni and Stuart-Brown (2011) autonomy – .86, environmental mastery – .78, personal growth – .75, positive relations – .84, purpose in life – .73, and self-acceptance – .71.

5) **Eating Attitudes Test-40** (Garner & Garfinkel, 1979): a 40 item screening measure identifying behaviors and cognitive patterns of eating disorders. Items are constructed on a 0–3 four-point Likert scale, yielding three subscale scores for dimensions of dieting, body, and food preoccupation,

oral control, and a total score ranging from 0 to 120. Higher scores indicate greater eating disorder psychopathology. It has been widely used in adolescent samples (Garfinkel, & Newman, 2001) as well as applied in extensive Italian adolescent populations (Abbate-Daga et al., 2007; Miotto et al., 2003). Cronbach's alpha coefficient ranged from .79 in female patients with AN to .94. Test–retest reliability was .84, and the validity coefficient was .87 (Garner & Garfinkel, 1979). In this study, the Italian validation of the EAT-40 was applied, which reports subscale Cronbach alphas of .80 for dieting, .70 for bulimic preoccupations, and .83 for oral control (Cuzzolaro & Petrilli, 1988).

6) Body mass index (BMI), illness duration in months, eating disorder diagnosis, and major depression and persistent depressive disorder (i.e. dysthymia) diagnoses were collected from medical records. BMI (kg/m²) is an indicator of nutritional state. Subjects with a BMI between 18.7 and 23.8 are considered to be of a normal weight (Società Italiana di Nutrizione Umana, 1996).

3.6.3 Treatment

Treatment was provided in a multidisciplinary clinical outpatient setting and consisted in individual weekly sessions composed of one hour psychotherapy sessions, provided by PsyD-level psychotherapists trained in CBT, either preceded or followed by one-hour sessions with a nutritional physician specialized in EDs. Average duration of treatment for patients is one year, roughly 48 sessions. Salient elements of the treatment program include cognitive-behavioral techniques, such as cognitive restructuring, assertiveness training, use of diaries, behavioral homework, exposure to avoided foods, and nutritional rehabilitation elements, such as psychoeducation on nutrition, on weight restoration, on health consequences if the illness. Integration is further implemented by weekly case discussions between psychotherapists and nutritional physicians of clinically useful information in order to tailor future patient sessions to emerging themes and needs.

3.6.4 Data Analysis

Firstly, an Independent t-test was conducted to verify changes in BMI by diagnostic group for descriptive purposes. Moreover, to determine changes in subjective incompetence scores (SIS) and depression scores (BDI-II) as well as ED symptomatology (EAT total scores), analyses of covariance for repeated measures (covariate illness duration) with baseline observation carried forward (BOCF) were performed to compare means score between pre-treatment (T0) and first reassessment time (T1) coinciding with mid-treatment. Illness duration was inserted as a covariate for illness severity since BMI has been previously criticized as a measure of severity in anorexia nervosa. It is considered an important predictor of outcome as a measure of illness severity (Maguire et al., 2008).

Secondly, to investigate changes in demoralization and depression cases, McNemar tests were conducted to determine whether diagnoses of demoralization syndrome and depressive disorders changed between pre-treatment (T0) and the first reassessment time (T1). Thirdly, hierarchical linear regression analyses were performed to determine the contribution of changes in subjective incompetence ($\Delta \text{SIS} = \text{SIS total score at T1} - \text{SIS total score at T0}$) in predicting changes in several treatment outcomes. Baseline observation carried forward method was applied for missing data. A series of two-stage hierarchical linear regressions were conducted with changes in EAT subscale scores: oral control ($\Delta \text{EAT oral control} = \text{EAT-oral control at T1} - \text{EAT-oral control at T0}$), food and bulimic preoccupations ($\Delta \text{EAT food and bulimic preoccupations} = \text{EAT food and bulimic preoccupations at T1} - \text{EAT food and bulimic preoccupations at T0}$), and dietary restraint ($\Delta \text{EAT dietary restraint} = \text{EAT dietary restraint at T1} - \text{EAT dietary restraint at T0}$) as the dependent variables. Illness duration and BDI-II total score at baseline (BDI-II T0) were entered at stage one of the regression to control for illness severity and depressive symptoms. The SIS score change variable (ΔSIS) was entered at stage two.

Subsequently, two-stage hierarchical multiple regressions were conducted with change in PWB scales of environmental mastery, autonomy and purpose in life, as the dependent variables (PWB scale T1- PWB scale T0). Illness duration and BDI-II total score at baseline (BDI-II T0) were entered at stage one of the regression to control for illness severity and depressive symptoms, while SIS score change (Δ SIS) was entered at stage two.

BMI and age were excluded as covariates as they did not correlate with any outcome measures (Miller & Chapman, 2001). Prior to conducting a hierarchical multiple regression, the relevant assumptions of this statistical analysis were tested. A sample size of 54 was deemed adequate given three independent variables to be included in the analysis (Field, 2013). The assumption of singularity was also met as the independent variables (Δ SIS, illness duration, and BDI-II total score at baseline) were not a combination of other independent variables. An examination of correlations revealed that no independent variables were highly correlated. Residual and scatter plots indicated the assumptions of normality, linearity and homoscedasticity were all satisfied (Field, 2013). In all analyses, the level of significance was set at $p < 0.05$ (two-sided). The Statistical Package for Social Sciences (SPSS) was used for all calculations. Sidak's correction for alpha level adjustment was considered for multiple testing (p-level adjusted to .0169). Given criticisms to the reliability of p-values, Cohen's d effect sizes were calculated (Sullivan & Feinn, 2012) where $d > .80$ indicates a large effect, $d > 1.1$ a very large effect (Cohen, 1988).

Finally, given the importance of the drop-out phenomena in ED treatment, a binary logistic regression was run as an exploratory analysis to predict drop-out or failure to engage status (grouped into one category) using the following as predictors: baseline subjective incompetence (SIS T0) and depression scores (BDI-II T0) and baseline diagnoses of demoralization and depressive disorders, as well as baseline psychological well-being scores (all six subscales at T0). Illness duration as illness severity was also inserted in the model. Drop-out or failure to engage status was assigned to patients who had interrupted treatment on their own while still having

significant ED symptoms ($EAT > 30$) at time of drop-out or failed to engage (had undergone only 1-3 assessment sessions).

3.7 Results

3.7.1 Patient Sample Characteristics

Sixty ED outpatients were analyzed for changes by mid-treatment (21 AN, 11 BN, 12 BED and 16 OSFED). Participants were all female with mean age 27.83 ± 12.64 and mean educational years 14.22 ± 3.27 . Mean illness duration was 7.88 ± 9.07 years. Mean BMI at baseline by diagnoses was 15.57 ± 1.65 kg/m² for AN, 23.36 ± 5.51 kg/m² for BN, 34.19 ± 9.31 kg/m² for BED and 21.43 ± 6.61 kg/m² for OSFED. The majority of the sample was single (70.5%), while 4.9% was married, 3.3 separated and 3.3 divorced. A fifth (23%) was in high school, another fifth was in college (23%), while 26% was employed, 4.9% worked as a free lance professional. Mean time from beginning of treatment to T1, mid treatment, was 5.23 ± 2.42 months.

3.7.2 Changes in Demoralization and Subjective Incompetence in ED Outpatients

By mid-treatment, mean BMI change reached significance only in patients with anorexia nervosa ($p = .0002$). A one-way repeated measures baseline observation carried forward analysis of covariance was conducted to evaluate changes in SIS and BDI-II total score in ED outpatients ($n = 58$) between baseline and mid-treatment. The results of the BOCF ANCOVA indicated a significant time effect for EAT total scores ($p = .004$), subjective incompetence ($p = .001$) and depressive symptoms ($p < .0001$), independently of illness duration with medium effect size in terms of Cohen's d . See Table 1 for means and standard deviations.

Table 1. Changes in BMI, EAT, SIS and BDI in ED Patients (n=58)

Measure	T0 M±SD	T1 M±SD	Statistic t/F(df)	p	Partial η ²	Observed power	Cohen's d
BMI (kg/m²)	AN:15.19±1.22	AN:16.59±1.42	t(16) = -5.910	.0002*	-	-	1.11
	BN:21.72±1.93	BN:22.63±3.42	t(3) =-.921	.425			.378
	BED:34.33±11.04	BED:32.28±8.46	t(7) =1.356	.217			.223
	OSFED:20.98±11.19	OSFED:21.33±9.82	t(5) =-.542	.611			.036
EAT total score	41.02±24.96	29.91±19.71	F(1,55) =9.041	.004*	.141	.840	.498
SIS total score	18.19±6.72	14.09±7.32	F(1,55) =12.377	.001*	.184	.933	.584
BDI-II total score	22.90±11.12	15.45±10.42	F(1,56) =26.052	<.0001*	.318	.999	.691

Note. AN, anorexia nervosa; BDI, Beck Depression Inventory-II; BED, binge-eating disorder; BMI, Body Mass Index; BN, bulimia nervosa; Cohen's d effect size; df, degrees of freedom; EAT, Eating Attitudes Test; F, F-test statistic; M, mean; OSFED, otherwise-specified feeding or eating disorder; Partial η², partial eta-squared; SD, standard deviation; SIS, Subjective Incompetence Scale; t, t-test statistic. Illness duration inserted as covariate in repeated measures with no statistically significant interaction.

*Statistically significant after adjusting for multiple testing with Sidak's correction

Prevalence rates for demoralization and depressive disorders were available for 42 patients. According to the McNemar Tests, the percentage of cases with comorbid demoralization dropped significantly from 80.9% to 28.5% among ED patients reassessed at T1. Concerning cases of depressive disorders (major depression or persistent depressive disorder), diagnoses were also significantly reduced from 50.0% to 16.6% of the total reassessed sample. See Tables 2a and 2b.

Table 2a. McNemar Test for Demoralization Prevalence Change in ED Outpatients (n=42)

	Absence of Demoralization T1	Presence of Demoralization T1	Total	p
Absence of Demoralization T0	8	0	8	<.0001
Presence of Demoralization T0	22	12	34	
Total	30	12	42	

Note. T0, baseline; T1, mid-treatment.

Table 2b. McNemar Test for Depressive Disorder Prevalence Change in ED Outpatients (n=42)

	Absence Depressive disorders T1	Presence Depressive disorders T1	Total	<i>p</i>
Absence Depressive disorders T0	19	2	21	<.001
Presence of Depressive disorders T0	16	5	21	
Total	35	7	42	

Note. T0, baseline; T1, mid-treatment.

3.7.3 The Role of Subjective Incompetence in ED Outpatient Treatment Response

Hierarchical regression analyses were run on a total of 54 patients for whom data was available with baseline-observation carried forward method for missing data. Analyses revealed that change in SIS (Δ SIS), adjusting for BDI-II baseline scores and illness duration significantly predicted EAT oral control ($p=.004$), EAT food and bulimic preoccupations ($p=.0002$), and EAT-dietary restraint ($p=.015$). However, reductions in SIS predicted most significantly reductions in EAT-food and bulimic preoccupations scores ($\beta=.558, t=4.680, p=.0002$) independently of initial depressive symptomatology and illness severity. Change in SIS explained a significant portion of variance in EAT-food and bulimic preoccupations ($R^2=.328, F=7.972, p=.0002$).

Reductions in SIS also predicted significant gains in three psychological well-being dimensions, most robustly environmental mastery ($\beta=-.650, t=-6.029, p=.0001$) and purpose in life ($\beta=-.574, t=-4.933, p=.00001$) and to a lesser extent self-acceptance ($\beta=-.398, t=-3.071, p=.003$). Changes in SIS explained a large portion of variability in both environmental mastery ($R^2=.432, F=12.666, p=.00001$) and purpose in life ($R^2=.338, F=8.509, p=.001$). Changes in SIS however did not significantly predict changes in PWB dimensions of autonomy, personal growth, and positive relations with others. See Table 3 for model coefficients.

Table 3. Hierarchical Linear Regressions for Δ SIS in ED Outpatients (n=54)

	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²	ΔR^2	ΔF	<i>p</i> ΔF	Model <i>F</i> (<i>p</i>)
Dependent Variable: Δ EAT oral control										
Model 1						.113	.113	3.186	.050	3.186 (.050)
Illness duration	.001	.003	.037	.273	.786					
BDI-II T0	-.082	.034	-.327	-2.401	.020					
Model 2						.238	.125	8.020	.007	5.095 (.004)*
Illness duration	.0003	.003	.013	.101	.920					
BDI-II T0	-.068	.033	-.269	-2.087	.042					
Δ SIS	.162	.057	.359	2.832	.007*					
Dependent variable: Δ EAT food and bulimic preoccupations										
Model 1						.028	.028	.709	.497	.709 (.497)
Illness duration	-.722	.004	-.073	-.511	.612					
BDI-II T0	-.002	.038	-.165	-1.157	.253					
Model 2						.328	.300	21.906	.0002	7.972 (.0002)*
Illness duration	-.003	.003	-.110	-.920	.362					
BDI-II T0	-.020	.032	-.076	-.624	.535					
Δ SIS	.268	.057	.558	4.680	.0002					
Dependent variable: Δ EAT dietary restraint										
Model 1						.082	.082	2.241	.117	2.241 (.117)
Illness duration	.003	.007	.048	.348	.729					
BDI-II T0	-.145	.073	-.273	-1.974	.054					
Model 2						.191	.109	6.581	.013	3.855 (.015)*
Illness duration	.001	.007	.026	.194	.847					
BDI-II T0	-.116	.070	-.219	-1.652	.105					
Δ SIS	.318	.124	.335	2.565	.013*					
Dependent Variable: Δ PWB autonomy										
Model 1						.006	.006	.160	.852	.160 (.852)
Illness duration	-.003	.012	-.032	-.222	.101					
BDI-II T0	-.069	.125	-.078	-.552	.583					
Model 2						.022	.015	.781	.381	.367 (.777)
Illness duration	-.002	0.012	-.021	-.150	.882					
BDI-II T0	-.082	.126	-.092	-.646	.521					
Δ SIS	-.197	.223	-.125	-.884	.381					

	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²	ΔR^2	ΔF	<i>p</i> ΔF	Model <i>F</i> (<i>p</i>)
Dependent Variable: Δ PWB Environmental Mastery										
Model 1						.019	.019	.489	.616	.489 (.616)
Illness duration	-.009	.010	-.126	-.890	.378					
BDI-II T0	.027	.103	.037	.262	.794					
Model 2						.432	.413	36.343	<.0001	12.666 (.00001)*
Illness duration	-.005	.008	-.072	-.666	.508					
BDI-II T0	-.026	.080	-.036	-.328	.744					
Δ SIS	-.850	.141	-.650	-6.029	.0001*					
Dependent Variable: Δ PWB Personal Growth										
Model 1										
Illness duration	-.005	.008	-.084	-.597	.553	.016	.016	.415	.663	.415 (.663)
BDI-II T0	.048	.085	.080	.568	.572					
Model 2						.093	.077	4.233	.045	1.705 (.178)
Illness duration	-.004	.008	-.061	-.447	.657					
BDI-II T0	.029	.083	.049	.355	.724					
Δ SIS	-.300	.146	-.280	-2.058	.045					
Dependent Variable: Δ PWB Positive Relations										
Model 1						.037	.037	.984	.381	.984 (.381)
Illness duration	-.007	.010	-.103	-.735	.466					
BDI-II T0	.105	.101	.146	1.042	.302					
Model 2						.039	.001	.078	.781	.670 (.574)
Illness duration	-.007	.010	-.099	-.703	.485					
BDI-II T0	.102	.103	.141	.996	.324					
Δ SIS	-.051	-.039	-.039	-.279	.781					
Dependent Variable: Δ PWB Purpose in Life										
Model 1						.016	.016	.408	.667	.408 (.667)
Illness duration	-.009	.011	-.115	-.815	.419					
BDI-II T0	-.062	.117	-.075	-.531	.598					
Model 2						.338	.322	24.339	<.0001	8.509 (.0001)*
Illness duration	-.005	.009	-.068	-.581	.564					
BDI-II T0	-.115	.097	-.139	-1.184	.242					
Δ SIS	-.846	.171	-.574	-4.933	.0001*					

	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>R</i> ²	ΔR^2	ΔF	<i>p</i> ΔF	Model <i>F</i> (<i>p</i>)
Dependent Variable: Δ PWB Self-acceptance										
Model 1						.022	.022	.585	.561	.585 (.561)
Illness duration	-.013	.012	-.151	-1.070	.290					
BDI-II T0	-.005	.127	-.006	-.041	.968					
Model 2						.178	.155	9.434	.003	3.599 (.020)
Illness duration	-.010	.011	-.118	-.903	.371					
BDI-II T0	-.046	.119	-.050	-.384	.703					
Δ SIS	-.642	.209	-.398	-3.071	.003*					

Note. β , standardized coefficient; Δ , increment of change; B, unstandardized coefficient; BDI-II, Beck Depression Inventory II; F, F-test statistic; PWB, Psychological Well-being Scales; *R*², coefficient of determination; SE, standard error; SIS, Subjective Incompetence Scale; *t*, t-test statistic; T0, baseline.

*Statistically significant after adjusting for multiple testing with Sidak's correction.

3.7.4 Predicting Drop-out and Failure to Engage Status

A logistic regression analysis was conducted to predict drop-out/failure to engage status in ED outpatients. Forty-eight outpatients were included in analyses as the remaining ones were still too early in treatment at time of analyses to classify as drop-out patients or as completers of treatment.

Among the 48 patients, 10 ED outpatients were classified as drop-outs or failure to engage cases while the remaining 38 had completed treatment. Mean mid-treatment number of sessions for ED outpatients continuing treatment (21.70±11.24 sessions), was significantly greater ($p < .0001$) compared to mean mid-treatment number of sessions undergone by patients who dropped out or failed to engage (of 7.82±7.52 sessions). No significant differences emerged between continuers of treatment and patients with drop-out/failure to engage status in age ($p = .852$), educational level ($p = .431$), BMI ($p = .140$), illness duration ($p = .394$), or number of past treatment attempts ($p = .249$). Moreover, the groups did not differ in baseline disorder psychopathology, that is eating disorder symptoms in EAT total score ($p = .673$). Drop-out/failure to engage patients had the following diagnoses: two AN, three BN, two BED, and three OSFED.

Predictor variables included in the model were: no comorbid demoralization or depressive disorder (categorical), comorbid demoralization only (categorical), comorbid depressive disorder

(categorical), illness duration, baseline BDI-II total score, baseline SIS total score, and baseline scores of PWB dimensions (autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance) (See Table 4).

Table 4. Exploratory Logistic Regression for Drop-out and Failure to Engage Status

Variable	B	SE	Wald	df	p	Exp(B)	95% CI for Exp(B)
Absence of comorbidity ^o (n=15)			1.586	2	.452		
Only comorbid demoralization (n=15)	1.564	2.551	.376	1	.540	4.777	.032-708.658
Depressive disorder comorbidity (n=18)	4.105	3.611	1.292	1	.256	60.637	.051-71874.685
Illness duration	.008	.006	2.205	1	.138	1.008	.997-1.020
PWB-autonomy	.154	.070	4.900	1	.027	1.167	1.018-1.338
PWB-Environmental Mastery	-.006	.099	.004	1	.952	.994	.818-1.208
PWB-Personal Growth	-.179	.101	3.159	1	.075	.836	.686-1.019
PWB-Positive Relations	-.056	.073	.589	1	.444	.945	.819-1.091
PWB-Life Purpose	.175	.104	2.837	1	.092	1.191	.972-1.461
PWB-Self-acceptance	.013	.072	.033	1	.857	1.013	.880-1.166
SIS T0 total score	.147	.113	1.708	1	.191	1.159	.929-1.445
BDI-II T0 total score	-.197	.114	3.000	1	.083	.821	.657-1.026
Constant	-5.006	6.475	.598	1	.439	.007	

Note. ^ono demoralization syndrome or depressive disorder diagnosis; B, coefficient for the constant or intercept; BDI-II, Beck Depression Inventory II; CI, confidence interval; df, degrees of freedom; Exp(B), exponentiation of the B coefficient or odds ratio; SE, standard error; SIS, Subjective Incompetence Scale; PWB, Psychological Well-being Scales; T0, baseline; Wald, Wald chi-square test.

A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between continuers of treatment and patients who had drop-out/fail to engage status ($\chi^2=19.920$, $p=.046$, $df=11$). Nagelkerke's R^2 of .530 indicated a moderately strong relationship between prediction and grouping. Prediction success overall was 89.6% (97.4% for continuing treatment and 60.0% for dropping out/failing to engage). The Wald criterion demonstrated that only PWB-autonomy made a significant contribution to prediction ($p=.027$). Demoralization and depression comorbidity, depressive and subjective incompetence severity were not significant predictors. $\text{Exp}(B)$ value indicates that when PWB-autonomy is raised by one unit the odds ratio is 1.167 times as large and therefore ED outpatients are 1.167 more times likely to drop-out.

3.8 Discussion

To the best of our knowledge the current study is the first to test whether demoralization syndrome and subjective incompetence, important psychological factors derived from the psychosomatic literature, are modified by standard treatment for EDs in a sample of eating disorder outpatients. Moreover the current study explored whether abating subjective feelings of incompetence in ED outpatients improves treatment response in terms of both eating-disorder related symptomatology and positive functioning domains, independently of depression at beginning of treatment, a common psychiatric comorbidity in EDs.

3.8.1 The Treatment of Subjective Incompetence and Demoralization

In our sample both demoralization diagnoses and subjective incompetence scores were significantly reduced by treatment, attesting to the abatement of feelings of helplessness, giving up, sense of failure and incompetence in such patients undergoing CBT-based therapy integrated with nutritional rehabilitation. Using the CBT framework as reference, the type of therapy undergone by patients, it is possible to hypothesize that feelings of inadequacy and incompetence most likely

improved through the modifications of negative and irrational global beliefs about the self, which are at the core of psychopathology according to cognitive theory (Bridges & Harnish, 2010; Vísľá, Flückiger, grosse Holtforth, & David, 2016) as well as characteristic internal attributions typical of ED patients (Morrison et al., 2006), both common targets in cognitive-behavioral therapy (Cooper, 2005).

While demoralization has seldom been studied longitudinally, specifically in EDs, previous studies investigating similar constructs have shown how self-efficacy (Ohmann et al., 2013) and self-competence (Surgenor, Maguire, Russell, & Touyz, 2007) improve in anorexia nervosa with CBT-based treatment. In the latter study however, improved self-competence was observed in only 30% of patients (Surgenor et al., 2007). Only one study, conducted in acutely suicidal patients, had seen the effects of brief cognitive treatment on demoralization as measured by the Demoralization Scale (Kissane et al., 2004), finding that the syndrome symptoms were significantly reduced (Catanese et al., 2009).

In the current study, the successful reduction of demoralization syndrome in about 60% of cases by mid-treatment is particularly important in eating disorders as this psychological state has been found to correlate with adverse health outcomes in medical patients (Tecuta et al., 2015) as well as abnormal illness behavior, particularly illness denial, and somatization processes, both of which are particularly high in AN (Abbate-Daga et al., 2013). However, the persistence of demoralization syndrome in 12 cases may be problematic, as feelings of demoralization may progress to a more complex distressed clinical picture including the emergence of suicidality (de Figueriedo, 2013). Moreover, such feelings characterize chronically ill ED patients and may constitute obstacles to recovery (Wade et al., 2011; Nordbø et al., 2012; Dawson et al., 2014; Robinson et al., 2015). The reduction of subjective incompetence is important as well as it is associated with behavioral disengagement as a coping style in cancer patients (Cockram et al., 2009) rather than with active engagement in treatment. Moreover, subjective incompetence and

demoralized states may represent a tendency to attribute negative events to the self, a common cognitive bias in ED patients, which may be a maintenance factor of the illness (Morrison et al., 2006). Additionally, high levels of ineffectiveness have been found to be significantly associated with worse prognosis in EDs (Bizeul et al., 2001).

3.8.2 The Role of Subjective Incompetence in ED Treatment Response

The second and main aim of the study was to explore the role that feelings of subjective incompetence may play in treatment response. Cognitive-behavioral theories of eating disorders (Fairburn, Cooper, & Shafran, 2003; Cooper, 2005) have for quite some time attributed negative beliefs about the self a central role, considering dysfunctional self-beliefs as core features and factors maintaining the disorder. As highlighted by Cooper (2005), one of the main recurrent cognitive theories in EDs hypothesizes a causal relationship between underlying assumptions and negative self-statements and eating behaviors such as dietary restraint in AN and binge-eating in BN. In other words, the activation of negative cognitions about the self are thought to increase distress and arousal resulting in maladaptive eating behaviors, enacted to dissipate negative thoughts and emotional distress (Fairburn et al., 1993; Wilson, 1996; de la Rie, Noordenbos, Donker, & van Furth, 2007). Perfectionism and distrust, closely correlated with self-competence, have long been hypothesized to be coping mechanisms or defenses in anorexia nervosa against feelings of inadequacy and lack of worth (Bruch, 1982; Slade, 1982) creating an inevitably self-defeating behavioral trap in which the clear inability to achieve perfection fosters feelings of inadequacy in any case, proving in the long run no solution or relief (Surgenor et al., 2007). Indeed, significant associations between feelings of ineffectiveness or incompetence and pathological eating-related symptomatology such as disordered eating and laxative use, have been documented in both non-ED college age women and AN patients, with higher ineffectiveness associated with greater severity of disordered eating (Dancyger & Garfinkel, 1995; Kovacs & Palmer, 2004; Ferrier & Martens, 2008). Such associations were found even when controlling for depression (Jacobi et

al., 2004). Moreover anorexic symptoms, in particular, have been found to be highly correlated with increased rates of helplessness and lower rates of mastery (Troop & Treasure, 1997).

In the current study, in line with cognitively-oriented clinical considerations, decreased subjective incompetence was found to significantly predict improvements in eating-related pathology, independently of depression at baseline, including such key diagnostic features of dietary restraint with associated attention to calories ingested and burned doing physical exercise, desire to be thin, sense of guilt after eating, as well as bulimic tendencies, excessive worrying over food and oral control. Several mechanisms of change may be hypothesized based on the available literature and theoretical frameworks for EDs. As already underscored, according the cognitive theories of EDs such improved sense of competence promoted by cognitive restructuring in CBT likely attenuates the need to enact maladaptive eating behaviors which had emerged as a response to a defeated sense of self. A previous study had found how improvements in both self-competence and self-liking at the end of treatment were associated with reduced drive for thinness (Surgenor et al., 2007).

Reductions in subjective incompetence also significantly predicted gains in positive functioning specifically relating to dimensions of environmental mastery and a sense of direction and purpose in life. Improvements in psychological well-being domains following CBT-based treatment were previously observed in eating disorder patients with moderate effect size correlations in environmental mastery, personal growth, and self-acceptance (Tomba et al., 2017). Such themes of mastery and life purpose are intrinsically linked with ED symptomatology. Theoretical perspectives and recent data suggest that ED patients attribute a sense of self-worth and accomplishment to their restrictive behaviors in which they invest their ability to exert external control in their lives, giving a false sense of mastery over one's self and environment and contributing to a distorted sense of purpose in life (Garfinkel & Garner, 1982; Fairburn et al., 1993; Wilson, 1996; de la Rie et al., 2007; Tomba et al., 2014). In EDs, the patient's underlying sense of

inadequacy and basic assumptions on self-worth become focal in the patient's sense of identity, reinforcing pathological eating behaviors (Garfinkel & Garner, 1982). Indeed studies have reported how ED patients' sense of ineffectiveness is correlated with reduced sense of mastery (Froreich et al., 2016) which in turn is associated with greater ED symptomatology (Tomba et al., 2014). Moreover, women with AN symptoms commonly report low existential meaning in their lives compared to their unaffected peers (Fox & Leung, 2009) and may attribute purpose in life to their oral control (Tomba et al., 2014).

Through a decrease in feelings of incompetence, patients may be able to engage actively in treatment. Gains in environmental mastery and purpose in life, may be the result of patients constructing an alternative sense of worth and greater competence in several ways. Firstly, the patient can challenge and modify underlying assumptions on self-worth and gain a sense of mastery through the use of behavioral homework, by actively engaging in previously avoided activities due to feelings of inadequacy both in therapy and in their daily environments. Moreover, as such activities are aimed at establishing new goals, patients may increment their sense of directedness and purpose in other areas of life and redefine their self-evaluation on other terms. In qualitative studies patients themselves report that once active pursuit of symptom reduction took place, their successes were met with a sense of boosted self-efficacy (Dawson et al., 2014). Additionally, reaching a healthy sense of purpose unrelated to eating behaviors and body issues is cited in former ED patients as an important aspect in their quality of life (de la Rie et al., 2007).

Self-acceptance is another major theme in treatment and recovery in EDs, often underscored by ED researchers as both a deficit in patients and target for treatment (Garfinkel & Garner, 1982; Finelli, 2001; Espindola & Blay, 2009; Rodriguez-Cano, Beato-Fernandez, Moreno, & Vaz Leal, 2012). Indeed in our previous study, PWB-self-acceptance was found to significantly correlate with oral control and dieting in EDs (Tomba et al., 2014), while low self-esteem, with components of self-liking and self-competence, correlate significantly with severity of ED symptoms in another

study (Surgenor et al., 2007). Self-acceptance was also found to characterize the last phase of AN, as patients express their need for self-love, improved self-worth and self-acceptance in treatment (Fogarty & Ramjan, 2016). Improvements in self-acceptance were also predicted by changes in subjective incompetence, although when adjusting for multiple testing this significance was lost. Even so, by targeting unrealistic and perfectionist expectations, excessive self-criticism, and correcting the attribution of self-worth to weight and shape, and internal attributions of negative events, CBT may both diminish feelings of inadequacy and incompetence, and foster a redefined adaptive sense of self-worth which increases positive regard towards the self (Garfinkel & Garner, 1982; Morrison et al., 2006).

Overall the current findings support a long-held but seldom tested clinical hypothesis according to which young women at risk for developing EDs specifically may attempt to gain autonomy and a sense of competence through disordered eating behaviors to overcome an internal sense of ineffectiveness and lack of control associated with distressed feelings (Bruch, 1982; Garfinkel & Garner, 1982; Fairburn, Shafran, & Cooper, 1999; Foreich et al., 2016) for which some limited evidence has been summarized (Cooper, 2005). It is worthy of note that while feelings of inadequacy may be attributable to depression, the finding that subjective incompetence reductions were predictive of both ED symptom abatement and positive functioning improvements independently of depression severity at baseline, is particularly telling and underscores the clinical importance of considering specific factors that may augment incremental validity of assessment strategies rather than focusing solely on the intensity of a heterogeneous collection of symptoms subsumed under a diagnostic label. The role of subjective incompetence in increasing positive functioning is particularly encouraging as compromised psychological well-being may create vulnerability to adversity and increase chances of relapse (Fava, 2012; Ryff, 2014).

3.8.3 Autonomy and Treatment Drop-out

Demoralization and subjective incompetence at beginning of treatment did not seem to predict dropping out of treatment or failing to engage. Indeed in a previous study in cyclothymic patients demoralization diagnosis did not seem to play any role in treatment in general (Tomba et al., 2016) despite initial clinical observations had suggested that demoralized individuals would respond more readily to treatment having high suggestibility and responsiveness to non-specific therapeutic factors (Frank, 1961). However, it is important to not confuse demoralization with readiness to change and motivational aspects.

Autonomy emerged as the sole predictor, albeit not robustly. Hence the finding should be interpreted with caution due to small sample size and power. It is worthy of note that deficits in autonomy have been considered, along with a sense of ineffectiveness, at the core of the development of EDs in various psychological perspectives, especially ones emphasizing family structure and environments (Strauss & Ryan, 1987). Bruch (1973) had defined patients with anorexia nervosa in particular as having difficulties with autonomy, continuously engaged in a "struggle for control, for a sense of identity, competence, and effectiveness" (p. 251). To date there is increasing evidence that ED patients indeed exhibit impaired autonomy compared to controls (Huemer et al., 2012; Tomba et al., 2014; Kuipers, van Loenhout, van der Ark, & Bekker, 2016). However, altered autonomy is observed once the disease has already progressed, underscoring how it may most likely be a consequence of the illness rather than a risk factor (Huemer et al., 2012).

Once in treatment, ED patients (most likely patients with AN), who may have enacted behaviorally inappropriate dietary patterns in an effort to gain control and autonomy which has not developed in other healthy ways, encounter a dilemma: being stuck between intense fears of losing control and autonomy and suffering potentially deleterious health consequences (Sato, 2003; Brockmeyer et al., 2013). Authors (Brockmeyer et al., 2013) confirmed in their study that anorexia nervosa patients do exhibit a stronger motivation to avoid dependency, i.e. avoiding a loss of

autonomy, compared to both healthy and clinical controls, as well showing lower strivings for intimacy. Therefore, speculatively, it is plausible that patients who exhibit greater autonomy may indeed have a stronger fear of losing control and autonomy and hence a greater fear of engaging in therapy which would facilitate drop-out. However, more detailed in-depth studies on additional facets of drop-out, including motivational factors, as well as personality traits that may influence autonomy, are needed to draw such considerations less tentatively.

Limitations of the current study include the small sample size, lack of post-treatment data and follow-up as well as not taking into account personality characteristics which may be important in further characterizing patients that response to therapy with improved self-competence and those who may prematurely interrupt treatment.

3.9 Clinical Implications

Current findings underscore the need in EDs to evaluate often ignored psychological dimensions which have therapeutic and prognostic implications such as demoralization and subjective incompetence. As assessment is frequently focused in EDs on diagnostic comorbidities, broadening psychological evaluation to include subclinical depressive symptomatology and mood-related constructs not necessarily integral to diagnostic categories may aid in identifying clinically useful characteristics that may be targeted more efficiently in therapeutic efforts. Enhancing self-efficacy and self-directness may be crucial for good clinical outcome. Indeed better outcomes in EDs, especially behavior aspects associated with eating disorders, are obtained when active coping, which may be hampered by feelings of ineffectiveness, self-blame and incompetence, is engaged by patients (Davies, Bekker, & Roosen, 2011).

How may therapeutic interventions promote greater self-efficacy and reduce feelings of incompetence in ED patients? According to de Figueiredo (1993) subjective incompetence requires an in depth modification of subjects' attitudes, thereby indirectly suggesting cognitive therapeutic strategies. Demoralization, characterized by subjective incompetence, a sense of failure and

helplessness have also been considered optimal targets for CBT (Clarke & Kissane, 2002) while others have suggested a psychotherapeutic approach mainly of the supportive kind (Angelino & Treisman, 2001) as well as existential inquiry, a type of focal and crisis psychotherapy (Griffith, 2013). Specifically in EDs authors have suggested that interventions may be most effective when emphasizing the promotion of people's needs for autonomy and competence (Froreich et al., 2016) as well as targeting cognitive biases of internal attributions relating to self-blame (Morrison et al., 2006). Moreover, in addition to targeting subjective incompetence and ED symptomatology, treatment strategies may augment their focus on patient's impaired positive functioning, that is a lack of psychological well-being (Tomba et al., 2014; Tomba et al., 2017).

3.10 Implications for Future Research

Current findings support the need to investigate further the role that demoralized feelings and feelings of inadequacy may play in treatment, while considering other associated factors such as specific distorted cognitions for a more direct and targeted promotion of well-being and reduction of disorder symptomatology. Moreover, testing novel approaches aimed specifically at enhancing psychological well-being, such as Well-being therapy (Fava, 2016), recently tested with positive results in a case study of AN (Tomba & Tecuta, 2016), may prove to enhance treatment response in EDs, a population in which treatment options are often limited.

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