Chronic Illness as Loss of Good Self: Underlying Mechanisms Affecting Diabetes Adaptation

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Abstract

The aim of the present study is to investigate the role of emotional variables in diabetes adaptation. This is in order to develop and test a conceptual model simultaneously involving emotional variables, consistent with a conceptual framework looking at chronic illness as a loss of good self. A convenience sample of 59 participants with a diagnosis of type 1 (n= 26) and type 2 (n=33) diabetes mellitus (Mean age= 57.17, *SD*=16.82) completed measures of diabetes distress, psychological adjustment to diabetes, diabetes self-care (as outcomes of diabetes adaptation) and depression, alexithymia and damaged ego-related strategies (as emotional variables). Correlation analyses among the examined measures were

performed; as well, regression analyses were used to test the role of such emotional variables (as potential predictors) in accounting for diabetes adaptation outcomes. The results overall suggest that lower depression and higher mania contribute to diabetes adaption to a statistically significant extent, despite mania not being associated with self-care behaviours. The study raises a controversial debate about the meaningfulness of the psychological process of adjustment to diabetes without considering the role of underlying symbolic and less conscious dynamics.

Key words: Chronic illness, Psychodynamic, Depression, Alexithymia, Diabetes

Introduction

Diabetes Mellitus is a chronic disease involving a metabolic disorder characterized by a high level of blood glucose caused by a pancreatic dysfunction in production of insulin. There are two different types of diabetes. Type 1 diabetes is an auto-immune condition where the body attacks pancreas with antibodies and it often arises during childhood. Whereas, type 2 diabetes is a progressive condition where the body fails to correctly use and store glucose and it often occurs in adulthood because of an unhealthy lifestyle. Both types of diabetes require demanding and lifelong self-management including regular blood glucose monitoring, diet, physical exercise and medication, which have an essential impact in preventing diabetes' complications and ensuring a good quality of life (American Diabetes Association, 2018).

Chronic Illness Adaptation: The Case of Diabetes Mellitus

Several studies have highlighted the emotional burden related to having a chronic disease, which requires a process of adaptation in order to integrate illness experience into individual's life context (Lapolla et al., 2012; Martino et al., 2018; Van Houtum, Rijken, & Groenewegen, 2015; Vari et al., 2017; Whittemore & Dixon, 2008; Williams et al., 2017).

Chronic illness adaptation is defined as the degree to which people cope - both physiologically and psychologically - with the stress of living with a chronic illness (Whittemore, Jaser, Guo, & Grey, 2010). With respect to diabetes, this entails individual's personal engagement on both psychological adjustment to and management of chronic disease, which are interdependent and simultaneous (Ebrahimi, Moonaghi, Jafarabadi, Areshtanab, & Jouybari, 2016).

Psychological adjustment concerns a developmental process toward the acceptance of the disease including toleration, approval, integration and identification (Schmitt et al., 2018; Stanton & Hoyt, 2017). Literature has shown that poor psychological adjustment to diabetes is associated with worse metabolic control and diabetes self-management (Schmitt et al., 2014) and lower quality of life (Misra & Lager, 2008).

Specifically, *diabetes distress* regards negative emotional burden in response to chronic disease and its requirements, including worry about complications, fear of hypoglycemia, feeling of guilt about uncontrolled blood glucose, and depressed mood (Dennick, Sturt, & Speight, 2017; Wardian et al., 2018). Researchers have found diabetes-related emotional distress being a negative independent predictor of glycemic control (Fisher et al., 2010) and overall adherence (Gonzalez, Shreck, Psaros, & Safren, 2015). Moreover, an indirect effect of diabetes distress on glycemic control through diabetes self-management behaviors has been highlighted (Cummings et al., 2014).

Diabetes self-care is defined as a set of healthy behaviors the patient enacts in order to manage his/her chronic disease (Saad et al., 2018; Wagner et al., 2017). Diabetes self-care behaviors include the regulation of diet, physical exercise and medication, self-monitoring of glucose levels and foot care (Ausili et al., 2015). Several studies have highlighted the importance of performing self-care behaviors in reducing the severity of complications and improving quality of life and glycemic control (Guicciardi et al., 2014; Guicciardi et al., 2015; Shrivastava, Shrivastava, &

Ramasamy, 2013). Self-care can indeed be considered as an important indicator of patient's diabetes adaptation, along with both psychological adjustment to disease and diabetes related emotional distress.

Chronic Illness as "Loss of Good Self": Conceptual and Theoretical Framework

An object-relation perspective can be useful to understand adaptation to chronic illness (D'Alberton, Nardi, & Zucchini, 2012; Schattner, Shahar, & Abu-Shakra, 2008). The term "object relation" is referred to describe the internal images or mental representations of the self and others (intended as symbolic objects) which have the power to influence both the individual's affective states and overt behavioral reactions (Goldstein, 2001). Within this framework, individuals who face chronic illness may experience a loss of a self-representation (as an internal good object) characterized by health, bodily intactness, strength, youth and vitality due to the psychological and physical impact of disease. Persons with diabetes can indeed experience loss, narcissistic injuries, self-blame and guilt. This entails a condition of an ego, as expression of self-determination and effective adaptation to the environment, that is damaged by chronic illness (Goldstein, 2001). Consequently, when coping with this unpleasant condition, patients could experience a sense of self-defectiveness and deficiency of the capacity to cope with reality (Falvo & Holland, 2017; Palombo, 1985). This seems to be confirmed by a great amount of research that highlights the connection between diabetes and higher levels of depression, mainly due to the related complications or health problems and stressful rigors of diabetes management that may negatively affect mood and require lifestyle changes (Baucom et al., 2018; Das-Munshi et al., 2007; Dipnall et al., 2015; Kearns et al., 2017; Roy & Lloyd, 2012; Sartorius, 2018).

As well, a relationship between diabetes and emotional dysregulation has been detected; specifically, it has been reported that alexithymia – as inability to

distinguish between emotions, thoughts, and physiological responses and difficulty in recognizing and describing emotions - is frequently associated with diabetes mellitus (Gentili & Gentile, 2010; Topsever et al., 2006). Indeed, people with alexithymic traits are generally prone to develop physical illness (Di Trani, Mariani, Renzi, Greenman, & Solano, 2018; Lauriola, Panno, Tomai, Ricciardi, & Potenza, 2011; Porcelli & Taylor, 2018) and in patients with diabetes alexithymia correlates with higher levels of perceived stress and impaired ability to monitor body signals, thus resulting in poor metabolic control (Avci & Kelleci, 2016; Luca et al., 2015). The results concerning the high levels of depression and alexithymia in patients with diabetes seem to suggest a difficulty to deal with grief and loss because the painful feelings associated to chronic illness are not well processed at a symbolic level, thus preventing from psychological mourning elaboration. However, such a hypothesis has not been specifically tested yet also due to the difficulty to operationalize the discussed symbolic and unconscious dimension within a psychodynamic perspective. The exploration of strategies enacted to handle an ego damaged by the negative impact of diabetes could thus shed light on the above mentioned psychological mourning elaboration, contributing to widen the research about diabetes adaptation with regard to emotional and psychological dynamics.

Therefore, the aim of the present study is to investigate the role of damaged ego-related strategies, depression and alexithymia in psychological adjustment to diabetes, diabetes distress and diabetes self-care as indicators of diabetes adaptation.

This is in order to develop and test a conceptual model simultaneously involving emotional variables, consistent with a conceptual framework looking at chronic illness as the loss of good self.

Materials and Method

Participants and Procedures

A convenience sample of 59 participants with a diagnosis of type 1 (n= 26) and type 2 (n=33) diabetes mellitus was used for the present study. Participants (60% female) were on average aged 57.17 years old (SD=16.82) and were recruited from a hospital in Rome between March 2018 and July 2018. Before completing the examined measures, participants gave their informed consent to participate in the study. This study was approved by the research review ethical committee of the Department of Dynamic and Clinical Psychology at "Sapienza" University of Rome.

Measures

Diabetes distress. The Italian version of the Problem Areas in Diabetes Scale- Short form (PAID-5; Nicolucci et al., 2014) was used to evaluate diabetes distress in terms of worries and negative emotions related to their diabetes. It includes 5 items with responses on a five-point Likert scale, with higher scores indicating greater diabetes-related distress. The instrument has been applied in the DAWN MIND (Monitoring Individual Needs in People with Diabetes) program across 10 countries (McGuire et al., 2010) and show good psychometric characteristics in terms of reliability and validity also in the Italian context (Nicolucci et al., 2014). In the present study the reliability (Cronbach's α) of the measure was .84.

Psychological adjustment to diabetes. The Italian version of the ATT-19 scale (Gentili, Rodà, & Saioni, 2008) was used to assess patients' psychological adjustment to diabetes status. It is a 19 item five-point Likert scale that is applicable to both type 1 and type 2 diabetes mellitus and refers to psychological integration of diabetes, in terms of the extent to which diabetes is integrated into the patient's lifestyle and personality. The scale has been widely used at international level (Welch, Dunn, & Beeney, 1994) and shows sound reliability and validity also in

the Italian context (Gentili et al., 2008). In the present study the reliability (Cronbach's α) of the measure was .76.

Diabetes Self-Care. The Italian version of the Summary of Diabetes Self-Care Activities (SDSCA) (Ausili et al., 2015) was used to assess levels of self-management across different components of the diabetes regimen. It is a 11-item scale, which assesses several self-care activities by the patient's report on the previous week with regard to general diet (prescribed or generally helpful diet), specific diet (consumption of fruits and vegetables and low-fat foods), physical exercise, blood-glucose testing, and foot care. The respondent marks the number of days of the week on which the indicated behaviors were performed. The questionnaire's first ten items are summed to a total score; whereas the eleventh item regards smoking and assesses the average number of cigarettes smoked per day. A previous review (Toobert, Hampson, & Glasgow, 2000) reported adequate reliability and good criterion validity of the instrument, as also shown in the Italian validation study (Ausili et al., 2015). In the present study the reliability (Cronbach's α) of the overall measure was .71.

Depression. The Italian version of the Beck Depression Inventory-II (BDI-II; Ghisi, Flebus, Montano, Sanavio, & Sica, 2006) was adopted to assess depression. This instrument is a 21-item scale evaluating depressive symptoms and depressive mood changes in the two last weeks, including both somatic-affective and cognitive symptomatology (Balsamo & Saggino, 2007). Reliability, construct and convergent validity with other depression measures has been demonstrated (Ghisi et al., 2006). In the present study the reliability (Cronbach's α) of the measure was .87.

Alexithymia. The Italian version of the Toronto Alexithymia Scale (TAS-20) (Bressi et al., 1996) was used to assess alexithymia. It is a 20-item questionnaire with responses on a five-point Likert scale evaluating emotional competence, with

higher scores representing greater degree of alexithymia (Bagby, Parker, & Taylor, 1994). Specifically, the measure is composed of three different dimensions: Difficulty with identifying feelings, Difficulty with describing feelings to others and Externally oriented thinking. The scale has good psychometric properties in terms of reliability and validity (Bressi et al., 1996). In the present study the reliability (Cronbach's α) of the overall measure was .72.

Damaged ego-related strategies. The Projective Envy Technique (PET) was employed to evaluate emotional dynamics enacted to handle the damaged ego's condition (Nannini et al., 2018). It is a sentence completion test consisting of 10 stories where the ego is symbolically confronted with one's loss/damage and, at the same time, with other's attainment/intactness across several life domains (e.g., having an unsatisfying couple relationship compared to another person). Consistently, the subject's relationship with the other's attainment may symbolically refer to an object relationship with goodness, where the damaged ego can get in touch with the good parts of self.

For each story, the respondent is asked to write down what the main character would answer to the other person. Respondents' answers are classified into four different strategies: Empathic identification (minimizing the frustrated ego and admiring other's attainment), Mania (denying the damaged ego and minimizing other's attainment), Frustration (emphasizing the damaged ego and expressing unpleasant feelings towards other's attainment) and Destructiveness (alleviating the damaged ego and expressing envious feelings towards other's attainment).

All responses were independently coded by two researchers by attributing a single code to each text unit (i.e. sentence). The score for each PET dimension was calculated as the percentage of relative codes out of the total coded text units. Inter-rater agreement was calculated using Cohen's K coefficient. Cohen's K value was 0.90 for Empathic identification, 0.90 for Mania, 0.87 for Frustration and 0.89 for Destructiveness.

Statistical analyses

In order to test the potential association between the emotional variables considered and the diabetes adaptation outcomes, Spearman's correlations were calculated. Then, in order to better understand the role of such emotional variables (as potential predictors) in accounting for diabetes adaptation outcomes (assumed as criterions), three linear stepwise multiple regression analyses were performed separately (one for each outcome), after having run a series of diagnostic tests to confirm that assumptions for linear regression were met, i.e. normality, linearity, homoscedasticity, multicollinearity, autocorrelation and outliers (Field, 2013). Stepwise linear regression is a method of regressing multiple variables to identify the best predictors for runoff coefficient and sediment yield, while simultaneously removing those that aren't important.

Our intent in using the stepwise approach was to identify the key emotional variables in adjustment to diabetes so to build an exploratory model that could provide meaningful insights about diabetes as a chronic illness from a psychodynamic perspective. Data were managed and analyzed using the SPSS Statistics 24 package.

As reported in Table 1, medium-sized statistically significant correlations were detected between the examined emotional variables and the diabetes adaptation outcomes. In detail, diabetes related emotional distress was associated with higher empathic identification and lower mania.

Psychological adjustment to diabetes was only associated with lower depression, whereas diabetes self-care showed no statistically significant associations.

Table 1. Correlation analyses between emotional variables and diabetes adaptation outcomes (Spearman's correlations)

	Problem Areas in Diabetes (PAID-5)	Psychological adjustment to diabetes (ATT-19)	Diabetes Self-Care (SDSCA)
Depression (BDI-II)	.24	-.33*	-.15
Alexithymia (TAS-20)	-.07	-.23	-.06
Emphatic Identification	.31*	-.05	.18
Mania	-.33*	.24	-.06
Frustration	.06	-.22	-.21
Destructiveness	.05	-.14	-.06

* Correlation is significant at the 0.05 level (2-tailed).

The preliminary diagnostic tests confirmed that the assumptions of the three linear stepwise multiple regression analyses were satisfied. Specifically, an examination of the scatterplots of the dependent variables against each independent variable showed each relationship to be approximately linear. Besides, the Normal Probability Plots showed that the distribution of the residuals was approximately normal. In the collinearity statistic tests all the predictors had tolerance values greater than .10, and variance inflation factor (VIF) values less than 10, thus revealing that multicollinearity was not a concern.

The Durbin-Watson values were 2.48, 2.10 and 2.10 for the three regression analyses respectively, thus falling within the range of 1.5 to 2.5 indicating no autocorrelation in the residual. Then, there was no sign of obvious outliers as scores had standardized residuals ranging from -3.29 and 3.29.

The summary of linear stepwise multiple regression analyses (Table 2) allowed the identification of some models including the key emotional variables that succeed to explain for about one-fifth of the overall variance of each diabetes adaptation outcomes. In detail, with regard to diabetes related emotional distress and psychosocial adjustment to diabetes, depression and mania served as the best predictors. Indeed, higher depression predicted higher distress and lower psychological adjustment in diabetes; instead, mania seemed to decrease distress and positively impact on psychological adjustment. Then, depression represented the only predictor explaining for worse diabetes self-care.

Table 2. Summary of linear stepwise multiple regression analyses for emotional variables predicting diabetes adaptation outcomes (standardized coefficients)

Predictors β (SE, 95% CI)	Problem Areas in Diabetes (PAID-5)	Psychological adjustment to diabetes (ATT-19)	Diabetes Self-Care (SDSCA)
Constant	6.87*** (1.26, 4.34−9.39)	72.64*** (2.73, 67.13−78.14)	48.30*** (3.13, 41.99−54.62)
Depression (BDI-II)	.29* (.08, .02−.36)	-.42** (.18, -.98−.24)	-.48** (.23, -1.29−.35)
Alexithymia (TAS-20)	–	–	–
Empathic Identification	–	–	–

Mania	-.42** (3.19, -16.83–-4.00)	.30* (6.94, 1,98–29.91)	–
Frustration	–	–	–
Destructiveness	–	–	–
R	.49	.49	.48
Adjusted R²	.21	.21	.21
F	7.316**	7.422**	12.410**

* Significant at the 0.05 level.

** Significant at the 0.01 level.

*** Significant at the 0.001 level.

Discussion

The aim of the present study was to investigate the role of damaged ego-related strategies, depression and alexithymia in diabetes adaptation, in order to develop a conceptual model conceiving diabetes as a chronic illness involving the loss of good self.

Firstly, correlation analyses have shown that higher depression is moderately associated with lower levels of psychological adjustment, consistently with previous research (Schmitt et al., 2018). Instead, no association has been highlighted between alexithymia and diabetes adaptation indicators, not confirming previous findings about the role of alexithymia in patients with diabetes (Gentili & Gentile, 2010; Topsever et al., 2006). However, it should be acknowledged that self-reported alexithymia is not always associated with performance-based measures about the ability to attribute and express emotions (Balottin, Nacinovich, Bomba, & Mannarini, 2014). Indeed, adopting a self-report method to measure a construct supposing the subject's inability to refer to what he/she feels is indicated as one of the major limitations of TAS-20 (Balottin et al., 2014). With regard to damaged-ego related strategies, statistically significant close to medium correlations have emerged between empathic identification as well as mania and

diabetes distress. In detail, the perceived negative impact of diabetes is higher when minimizing the frustrated ego and valuing the other's happy-wealthy condition, thus revealing the persistent desire for good self. Because empathic identification is routed in depressive concern for health, deemed as a good symbolic object that can be restored so to be introjected again, diabetes distress can be linked to the perceived distance between the damaged ego and the other's wealthy condition, which in turn contributes to increase loss-related painful feelings. As far as mania is concerned, a negative correlation with diabetes distress has been found, suggesting that denying the damaged ego and minimizing the other's happy-wealthy condition can lessen worries and negative emotions related to diabetes. Indeed, because manic defenses tend to protect the self from loss, feelings of anxiety, sorrow, or pain related to diabetes may be experienced to a lesser extent.

With regard to the regression models allowing the understanding of the diabetes adaptation outcomes based on the examined emotional variables, the results suggest that such variables can have a relevant role, explaining for 21% of the overall outcome variability. Specifically, higher diabetes distress is accounted for by lower mania and higher depression. These two predictors are strongly related each other as mania represents a way to evade the pains of the depressive position. This is consistent with the most recent research findings (Nouwen, 2015) highlighting that depressive symptoms occurring in patients with diabetes are intertwined with illness-related distress. As a consequence, resorting to manic defense mechanisms could represent an adaptive strategy in the short term to alleviate such painful feelings, despite this being done by denying the experience of loss rather than elaborating mourning. In this regard, several authors have reported that denial may just allow an emotional regulation by influencing the acknowledging of the burden diabetes but does not succeed restructuring self-adaptation to diabetes (Dunn, Smartt, Beeney, & Turtle, 1986; Gois et al., 2012). Besides, better psychological adjustment to diabetes is explained by lower depression and higher mania, in line

with the findings discussed above. This means that the extent to which diabetes is integrated into the patient's lifestyle and personality may depend on the reduced perception of being damaged and on resorting to self-enhancement strategies, thus preserving the integrity of good self as a symbolic object. As reported by Tripathy, Chandalia and Das (2012) denial could represent an emotion focused coping strategy in patients with diabetes aimed at lowering distress perception. Then, better diabetes self-care is accounted for by lower depression, confirming previous findings (Roy & Lloyd, 2012), highlighting that depression may interfere with diabetes management and effective lifestyle changes.

Overall, in order to trace a conceptual model looking at an object relation-informed perspective on chronic illness, our results suggest the central role of depression as indicative of loss feelings. Indeed, chronic disease seems to negatively impact on the holding of a good self by interfering with ego's functions (self-determination and effective adaptation to the environment), in turn affecting diabetes related adaption outcomes. As well, also ego defenses should be considered, especially mania that plays a meaningful role in handling such depressive feelings. Nevertheless, the lack of an effect of mania on self-care and adherence behaviors seems to suggest that such a damaged-ego related strategy does not result in an effective management of chronic disease but almost exclusively serve as a way to deny some painful aspects of psychic reality. This is in line with other pieces of research that have shown that defensive mechanisms – especially denial – are associated with poor metabolic control (Harvey, 2015; Hyphantis et al., 2005) because the tendency to avoid some situations that are restricting or uncomfortable can keep patients with diabetes from following precautions to maintain one's health (Tripathy et al., 2012; Langher, Marchini, Balonan, & Caputo, 2018). This raises a controversial debate about the meaningfulness of the psychological process of adjustment to diabetes without considering the role of underlying symbolic and less conscious dynamics, which may have broader implications in care relationships (Caputo, 2013; Tomai, Esposito, & Rosa, 2017). As highlighted by our study, the

subject's perception of being well adapted is to some extent accounted for by avoidant strategies that are not effective in the long run with regard to diabetes management and adherence to medical treatment.

Some limitations of the present study should be acknowledged. Firstly, the generalizability of our findings can be called into question due to the convenience nature of the sample that could have generated a self-selection bias. Moreover, the measures used were self-reported, albeit in some instances related to behavioral indicators as in diabetes self-care. Besides this, the correlational nature of the present study does not allow the disentanglement of the complex patterns among the examined measures, because only associations between emotional variables and diabetes adaptation outcomes may be detected, without further considering potential causal explanations. Another limitation refers to the potential role of social desirability bias or further unobserved variables (Caputo, 2015, 2017) - such as specific disease-related (e.g., different types of diabetes or time from diagnosis) or environmental variables (e.g., perceived social support) - which may interfere with the relationship among the examined measures and could better deepen the practical relevance of this research study.

With regard to future research directions, some suggestions may be particularly fruitful. For example, further medical outcomes (e.g., Hba1c) and clinician reported measures of treatment adherence could be taken into account. As well, longitudinal research could be further developed to causally infer the impact of the examined emotional variables on diabetes adaptation. Then, given the lack of statistically significant results about alexithymia, interview-administered instruments could be used to better grasp alexithymic traits in patients with diabetes (Di Trani, Costantini, Capozzi, Pepe, & Solano, 2014). Besides, more specific psychodynamically-oriented measures of depressive feelings related to chronic illness could be useful to better test the conceptual model here proposed. To this

purpose, alternative methods such as interviews focused on such relevant issues could be developed to integrate more qualitative data, also according to a case study approach (Langher, Caputo, & Martino, 2017).

In conclusion, the added value of the present study from a clinical psychological perspective is to enrich the conception of psychological processes affecting diabetes adaptation from an object relation perspective, looking at the interplay between more and less conscious aspects and considering the challenges posed to the ego in facing the chronic implications of physical disease.

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