

## **‘Adaptation to Type 2 diabetes: Patients’ illness representation and the role of spouse’**

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Diabetes mellitus constitutes a serious medical, social, and economic issue of epidemic proportions for developing and developed countries alike. It represents a major public health hazard in the current century and is ranked fifth cause of death in the USA (Anderson, 2002). Diabetes-related morbidity and mortality are mainly linked to common complications such as cardiovascular disorders, diabetic retinopathy, kidney disease, and peripheral neuropathy. Diabetes complications seriously impact health-related patient quality of life and daily function. Diabetes is also closely related to the development of depression with approximately 2/3 of patients likely to be diagnosed with major depression (Anderson, Freedland, Clouse & Lustman, 2001).

Depression may hinder engagement of self-care behaviors, commitment to medical treatments, and systematic adoption of potentially beneficial lifestyle (i.e., proper diet and regular exercise) (Anderson, Horton, O’Toole, Brownson, Fazzino,

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Fischer, et al., 2007. Gonzalez et al., 2007). Patients with diabetes are twice as likely to develop an anxiety disorder as compared to the general population (Bouwman, Adriaanse, Van'tRiet, Snoek, Dekker & Nijpels, 2010) worsening disease course by making it more difficult to follow routine diabetes self-care strategies (Inui, Kitaoka, Majima, Takamiya, Uemoto, Yenenaga, et al., 1998).

In view of the serious burden and behavioral demands incurred by a chronic disease such as diabetes, the role of self-regulation strategies becomes all the more crucial for disease progress. According to the widely adopted *common sense* model, the concept of self-regulation includes key factors involved in the person's perception of the threat of illness, the relation between these perceptions and the emergence of disease-related physical symptoms and, also, how these personal beliefs affect decision making regarding self-care behaviors (Leventhal, Brissette & Leventhal, 2003). According to the common sense model, when personal health is threatened certain representations begin to form in two levels: cognitive representations, concerning the nature of the threat, and emotional representations, such as fear. This process involves first recognizing the threat, and subsequently becoming aware of the associated emotion. Disease-related representations are known to affect the types of threat management strategies (i.e., coping) that will be engaged by the person. These strategies relate to the person's attempts to control fear and other illness-related emotions and to achieve health-related goals.

Significant associations between illness representations, including diabetes, and subjective health are supported by a large body of empirical evidence. For instance, the perception of limited control over the illness and the belief that the latter will have a significant impact on the person's life are associated with higher levels of anxiety and depression and further deterioration of physical health (e.g., Paschalides, Wearden, Dunkerley, Bundy, Davies & Dickens, 2004). These results were corroborated by a recent prospective study on 84 patients with diabetes aged 65 years (SD = 11.47), including 29 women recruited from the two public hospitals of the Prefecture of Herakleion, Crete. Specifically, the belief that diabetes will significantly impact the patient's life and that symptoms will follow a waxing and waning course was linked to increased depression and anxiety symptomatology and poor general physical health. Conversely, high levels of perceived control of the disease were



associated with reduced depressive symptomatology and better overall health levels (Table 1).

Table 1

Descriptive statistics and intercorrelations between consequences, personal control and timeline cyclical representations, and physical and psychological well-being (N=84 patients)

	Mean	SD	1	2	3	4	5	6
Physical Health	42.57	22.25						
Depression	0.80	0.59	-0.48**					
Anxiety	0.98	0.65	-0.43**	0.80**				
Consequences	3.30	0.95	-0.46**	0.43**	-0.00			
Personal control	3.78	0.88	0.31**	-0.35**	0.016	-0.14		
Timeline cyclical	3.24	1.10	-0.38**	0.38**	0.38**	0.29**	-0.22**	

\*\* $p < 0.01$

At the behavioral level, those patients with diabetes who adopt problem-focused coping strategies display lower levels of psychological distress, adapt better to the disease and achieve better glycemic control than patients who adopt emotion-focused strategies (Karlsen, Idsoe, Hanestad, Murberg & Bru, 2004. Sultan & Heurtier-Hartmann, 2001). In addition, the sense of control over the illness is a strong predictor of the adoption of effective dietary habits in type II diabetes. Interestingly, patients who believe that the medical treatments they receive can be effective may adopt healthy, disease-recommended dietary style and exercise regimen, even if they perceive diabetes as a particularly severe disease (Glasgow, Hampson, Strycker & Ruggiero, 1997. Hampson, Glasgow & Foster, 1995). Moreover, patients who attribute causes of their disease to internal factors and believe that the treatments they receive are helpful are more likely to achieve better glycemic control. In other words, a strong belief in personal responsibility and in the etiology of diabetes contributes to maintenance of low glucose levels, especially among women (Hampson, Glasgow & Foster, 1995).



### **The role of the family in coping to a chronic disease**

The role of the family and close friends in modifying the impact of the disease on the patient is increasingly becoming the focus of systematic research (Patterson & Garwick, 1994. Revenson 1994). The patient's social network may be affected by the disease and also actively contribute to its management by helping the patient adopt health-related behaviors and modify pre-existing behaviors that have become dysfunctional (Kerns & Weiss, 1994. Reich & Zautra, 1995). A chronic physical illness can affect all the members living with the patient and mainly their spouse or partner who is asked to assume an active role in treatment planning during the early phases post diagnosis. In reality, very few couples have made provisions for the drastic life changes incurred by the disease (Manne, Ostroff, Sherman, Glassman, Ross, Goldstein & Fox, 2003). In addition to presenting a life threat to the patient, a chronic disease may have a significant impact on the partner's well-being, social identity and roles, financial status, and capacity to plan for the future. The partner is asked to take on new responsibilities or become more actively involved in tasks such as housekeeping, contributing to the family income, medical procedures and care (Baanders & Heijmans, 2007). In addition, the partner faces new psychological challenges such as managing his/her own fear of loss, and negotiating the patient's acute emotional responses (D'Ardenne, 2004). These developments are likely to disturb the regular patterns of interaction among partners inducing rising tensions and greater physical and emotional burden for both. It should be noted, however, that many families eventually overcome these difficulties and succeed in attributing new meaning to the illness and in making the management of the disease part of everyday life.

### **The dyadic approach to chronic disease**

Those involved in a dyadic relationship or even a relatively brief dyadic interaction are likely to influence each other with respect to cognitions, emotions, and behavior (Kelley et al., 1983). The theory of interdependence which was developed to account for these phenomena (Kelley & Thibaut, 1978) specifies that exchanges between partners are determined by the dyad and not independently by each partner's behavior. Recently interdependence theory has been applied to the context of chronic



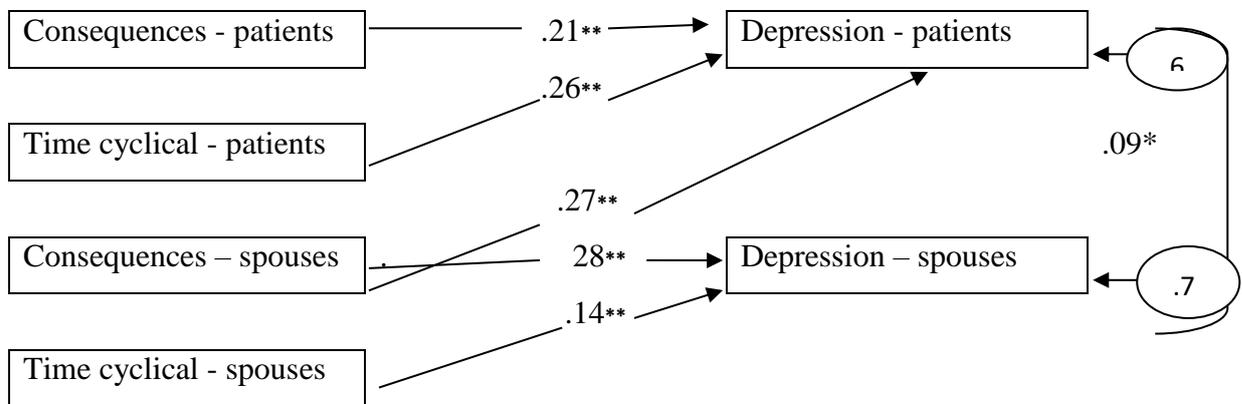
illness proposing that when a couple faces such a stressful event, stress-coping strategies available to both partners are engaged in order to maintain or restore joint homeostasis in both partners. The strategies engaged by each partner are likely to change over the phase of life and to adapt to the current stage of the illness to render daily dyadic interactions more effective in coping with daily stressors (Berg & Upchurch, 2007).

Taking into account the principles of the dyadic model, namely behaviors, motives, and emotions of both patient and partner, aspires to increase the effectiveness of interventions toward improving communication and joint problem solving. This outcome is expected given that dysfunctional dyadic exchange patterns tend to complicate chronic illness adaptation and increase risks for cardiovascular, immunological and endocrine dysfunctions (Kiecolt-Glaser & Newton, 2001. Robles & Kiecolt-Glaser, 2003). Type II diabetes is among such illnesses as it significantly affects patient's everyday life. There is a scarcity of empirical studies addressing the relationship between patient's behaviors toward the partner and the psychological consequences of the illness. In this context, Schokker, Links, Bouma, Keers, Sanderman, Wolffenbuttel and Hagedoorn (2010) employed a dyadic model to study how the qualities of care provided by the partner can affect relationship satisfaction for partner and patient alike. Results indicated that high levels of satisfaction were associated with care characterized by demonstrations of active support. Conversely, low levels of satisfaction were associated with support models characterized by the tendency to avoid conflict and "pretending" that all is well. The fact that partners also showed this pattern of associations demonstrates that diverse care models for diabetes patients can have very different positive or negative effects on both partner and patient. Using similar dyadic analysis models Franks, Lucas, Stephens, Rool and Gonzalez (2010) found that the levels of diabetes-related distress was associated with the severity of depressive symptomatology in both partners, especially in male patients.

Along the same lines, the study of Dimitraki (2012), mentioned above, further addressed the interaction between (a) perceived illness consequences and (b) the belief that the illness' physical symptoms follow a cyclical pattern on subjective health. Results showed that a representation of the illness as having serious consequences on the patient is associated with the emergence of depression symptoms

in both the patient and partner. Moreover, patient's depression symptoms could be predicted, by his/her own representations as well as by corresponding representation of his/her partner. Similarly, representations of cyclic symptoms in both partners were associated with increased depression symptomatology of both (figure 1). In addition, representations of the disease as unpredictable was associated with higher levels of anxiety in both partners (figure 2), whereas the partner's belief in the uncontrollable nature of the illness may even impair the patient's overall health. Conversely, the impact of the illness on the partner appears to be determined primarily by his or her emerging beliefs (figure 3). Thus, partners tend to rely on their own beliefs and regulate their actions based on these beliefs. A different picture emerges with respect to the patient's attitudes toward diabetes, which is determined jointly by his own and by the partner's beliefs.

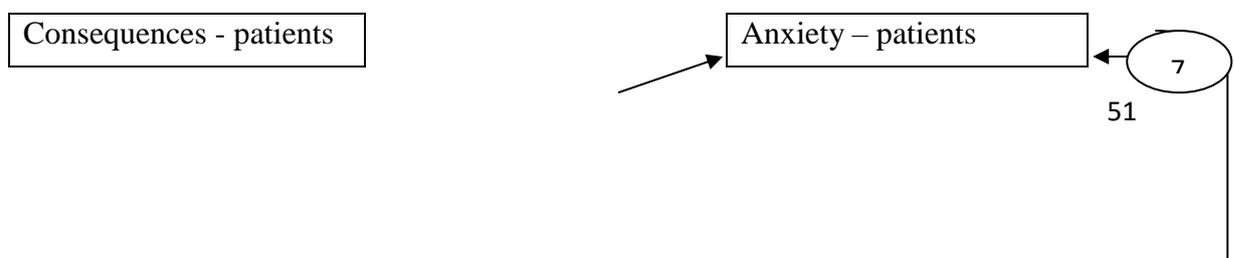
Figure 1. Beta –coefficients from the SEM analysis for actor and partner effects of illness representations on depression (N=84 couples)

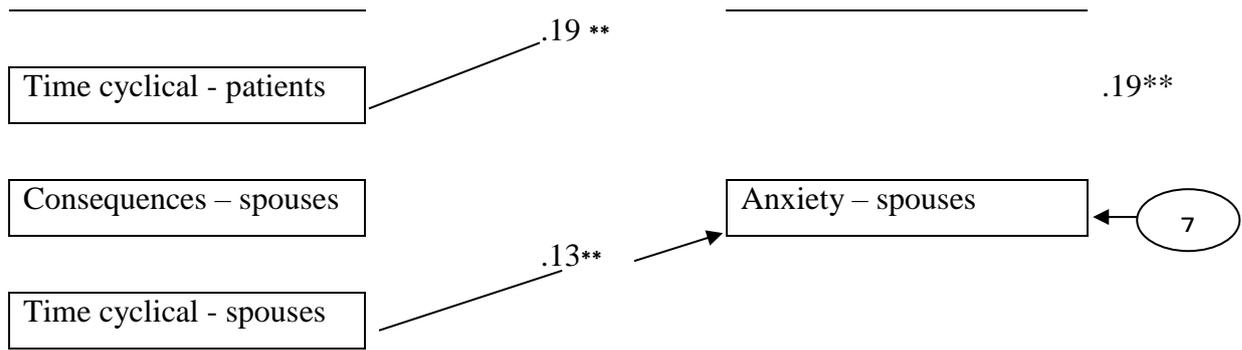


Note: For clarity reasons, co-variances between explanatory variables as well as insignificant paths are omitted from the figure.

\*\* $p < 0.01$

Figure 2. Beta –coefficients from the SEM analysis for actor and partner effects of illness representations on anxiety (N=84 couples)

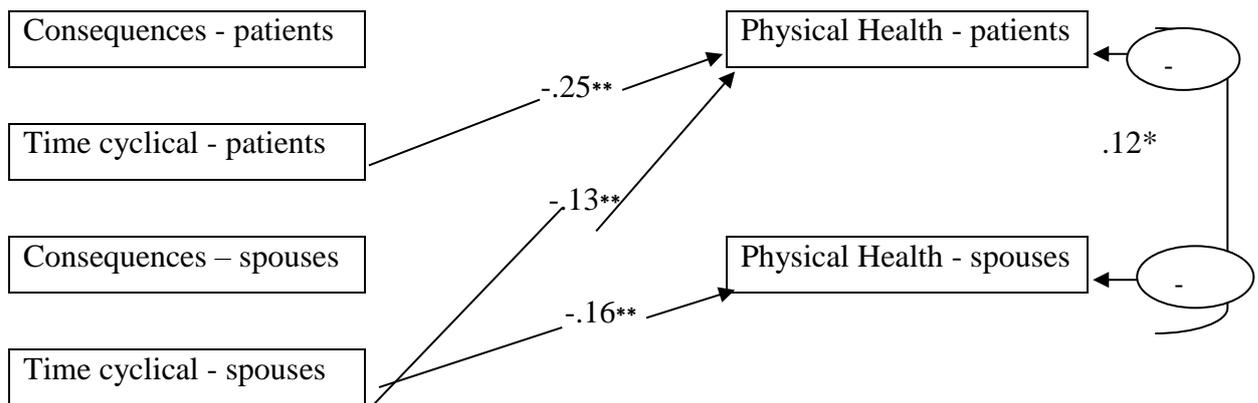




Note: For clarity reasons, co-variances between explanatory variables as well as insignificant paths are omitted from the figure.

\*\* $p < 0.01$

Figure 3. Beta –coefficients from the SEM analysis for actor and partner effects of illness representations on physical health (N=84 couples)



Note: For clarity reasons, co-variances between explanatory variables as well as insignificant paths are omitted from the figure.

\*\* $p < 0.01$

These results may prove useful in clinical practice. Documenting that diabetes-related problems may impact both partner’s and patient’s well-being stresses the need to adapt existing intervention approaches that “welcome” the partner into the therapeutic process without actively engaging him/her in the management of the challenges of the illness (Franks et al., 2010). It is therefore crucial to target the partner’s illness-related representations as well as the patient’s beliefs and coping strategies in order to promote successful adaptation of the patient to diabetes. This conclusion is supported by evidence on the effectiveness of psychosocial



interventions that actively encourage the involvement of the partner in the process as compared to interventions that focus solely on the patient (Martire, 2005. Martire, Lustig, Schulz, Miller & Helgeson, 2004). Particularly encouraging are the results of interventions that focus on the management of elements of the dyadic relationship. Relevant approaches target patient-partner exchanges concerning the illness and how the illness affects the quality of the relationship (Scott, Halford & Ward, 2004), whereas others focus on social support and illness coping strategies (Bodenmann, Charvoz, Cina, & Widmer, 2003. Bodenmann & Shantinath, 2004. Widmer, Cina, Charvoz, Shantinath, & Bodenmann, 2005).

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