The relationship between personality, supportive transactions and support satisfaction, and mental health of patients with early rheumatoid arthritis. Results from the Dutch part of the Euridiss study

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THE RELATIONSHIP BETWEEN PERSONALITY, SUPPORTIVE TRANSACTIONS AND SUPPORT SATISFACTION, AND MENTAL HEALTH OF PATIENTS WITH EARLY RHEUMATOID ARTHRITIS. RESULTS FROM THE DUTCH PART OF THE EURIDISS STUDY

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ABSTRACT. The relationships between two personality characteristics (neuroticism, extraversion), three types of supportive transactions (emotional support, social companionship, instrumental support) and satisfaction with these transactions, and two aspects of mental health (feelings of anxiety and depressive mood) were studied among 280 patients with early rheumatoid arthritis. Structural equation modeling of the relevant variables showed that people with a more neurotic personality profile showed more anxiety and depressed feelings. Extraversion had no direct effect on depression or anxiety. Companionship, both transactions and satisfaction, had an independent positive effect on depression but not on anxiety. The effect of emotional support ran via social companionship: more emotional support (both transactions and satisfaction) was expressed in companionship leading to a less depressed mood. Finally, more depressed people received more instrumental supportive transactions while more satisfaction with this type of supportive transactions was related to less anxiety.

Apart from the disturbing effect of a neurotic personality profile on mental health, the results once more underscore the importance of social companionship as a multifunctional activity for people's mental health. Maintaining this type of relationships despite a disabling condition gives people the opportunity to derive rewards that otherwise could not or only with more difficulty be achieved.

KEY WORDS: early rheumatoid arthritis (ERA), personality, social support, mental health, wellbeing

INTRODUCTION

It is frequently observed that patients with relative severe disease are socially and psychologically well adapted whereas their counterparts

with a more benign course are emotionally distressed and may have serious mental health problems needing treatment (see for example: Blaxter, 1980; Suurmeijer and Kempen, 1990). In fact, this was the starting point for this study among patients with an early onset of rheumatoid arthritis (ERA). In order to give a plausible explanation for this phenomenon the presence of a supportive environment was assumed to be of great importance for the patient's daily functioning and wellbeing. Part of this supportive environment is people's social network. It can be conceived as people's "social capital" that enables them to achieve goals which otherwise could not or with more difficulty be attained (Tijhuis et al., 1998). One of the important things social network can provide to their members is social support. Social support is supposed to have a beneficial effect on health and well-being of people and can be defined as "… the degree to which a person's basic needs are gratified through interaction with others … These needs may be met by either the provision of socio-emotional aid … or the provision of instrumental aid" (Thoits, 1982). Supposedly each dimension will be beneficial for different types of needs and, therefore, will have a different function in the social support process (McColl and Friedland, 1995). The last three decades, many studies have used the concept of social support in relation to the mental health or wellbeing of chronically ill people and almost all found an inverse relation between social support and mental health (Callaghan and Morissey, 1993; Krol et al., 1993; Vilhjalmsson, 1993). Particularly social-emotional support appeared to have a reducing effect on the intensity of fear, depressive feelings and anger which may result from serious illness (Cutrona and Russell, 1990). However, the concept is often not very accurately and carefully operationalized mixing up aspects like the size of social network, frequency of contacts, interactions and perceptions (appraisals and expectations of social support). In Figure 1, the relationships between social network, social support transactions and perceived social support is depicted (Van Sonderen and Sanderman, 2001).

In our study, social support is conceptualized as an "actual transaction or exchange of resources between at least one recipient and one provider of these resources, intended to enhance the well-being of the recipient" (Suurmeijer et al., 1995).

Whether the consequences of the social support provided are positive, neutral or negative depends, among other things, of the point

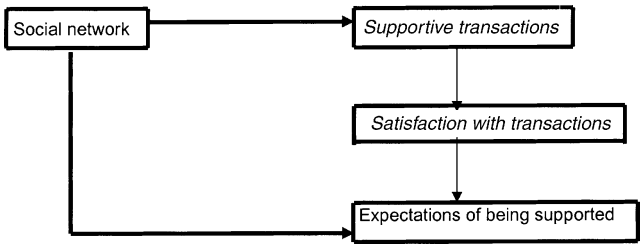

Figure 1. The relationships between social network, supportive transactions, satisfaction with these supportive transactions and expectations of being supported ("italic" is used in the present study).

of view of the person receiving the social support. Therefore, in the present study among ERA patients, the point of view of the patient (the recipient of the social support) has been taken as the starting point. Furthermore, based on theoretical ideas derived from the symbolic interaction theory, we assumed that not the supportive transactions as such are to be considered most relevant for one's mental health or wellbeing but the appraisal of or satisfaction with these transactions. Note that, in fact, Thoits' definition of social support (see above) explicitly refers to need satisfaction. Some empirical support for this point of view was found in one of our earlier studies in which satisfaction with supportive transactions appeared to be more relevant for the patients' wellbeing than these transactions as such (Doeglas et al., 1996). The amount of supportive transactions does not necessarily reflect the need for social support of the RA-patients while satisfaction/dissatisfaction does. The greater the discrepancy between the amount of supportive transactions received and a person's need for these transactions, the less the patients' needs are fulfilled and, consequently, the less they will feel satisfied with the social support received and the more their mental health or wellbeing will be jeopardized (Van Sonderen, 1991). This was confirmed in our study on measuring social support satisfaction among ERA patients (Doeglas et al., 1996; Doeglas et al., 2004).

Of course, the level of social support needed differs in the general population but probably even more so among chronically ill patients depending of the type and severity of the chronic condition. Because of variations in the restrictional level of RA patients and the erratic pattern of the disease, the differences in support needed will vary even more.

Apart from the contribution of social support on the RA-patients' mental health, several studies found evidence that the beneficial effect of social support is affected by individual dispositions (Sarason, 1988; Adler and Matthews, 1994). Of particular interest for the present study is that of Fyrand et al. (1997). Using the transactional part of a social support instrument (Suurmeijer et al., 1995; Doeglas et al., 1996), they found that personality (neuroticism and extraversion as assessed by Eysenck Personality Questionnaire [EPQ] [Eysenck and Eysenck, 1975]) explained the relationship between emotional supportive transactions and mental health (as assessed with the depression and anxiety subscales from the General Health Questionnaire, 28 item version [GHQ-28] [Goldberg and Williams, 1988; Sanderman and Stewart, 1990; Krol et al., 1994]) while social companionship had both a direct effect on mental health and partially mediated the relationships between personality and mental health (Figure 2).

However, based on the theoretical ideas discussed before, that the patients' mental health is not primarily affected by the transactions perse but particularly by the degree to which they satisfy needs, in the present study on personality, social support and mental health among ERA patients, we focus not only upon supportive transactions but in particular upon the satisfaction with supportive transactions. Being more or better able to mobilize one's social support system and to

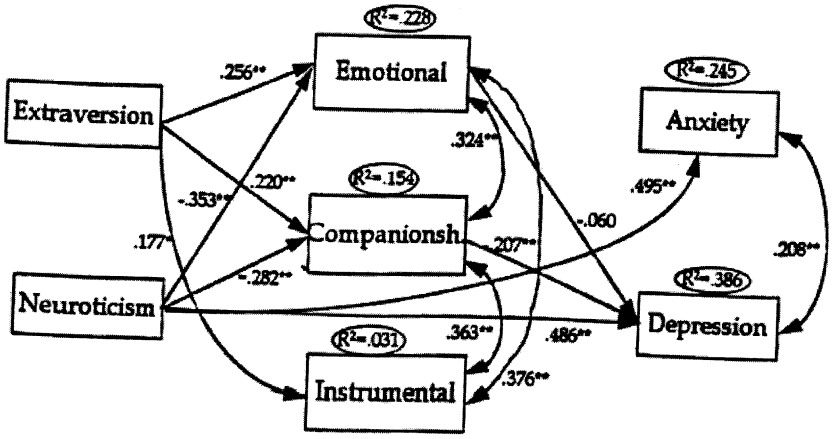

Figure 2. Path model of the impact of personality and social support on mental health acccording to Fyrand et al. (1997, p. 292).

elicit more satisfactory social support from their social network, the more one's needs in emotional, social or instrumental respect will be satisfied and the better one's mental health or wellbeing. This is particularly expected for persons with a more extravert personality profile. In contrast, persons with a neurotic personality profile may be expected to face more problems in generating and/or maintaining a sufficient level of supportive transactions and, if these transactions do occur, to evaluate them more negatively (Tempelaar et al., 1989; Bolger and Eckenrode, 1991).

The purpose of the present study, therefore, is to explore the relationships between personality traits i.e. neuroticism and extraversion, transactions of and satisfaction with three types of supportive transactions i.e. emotional support, social companionship and instrumental support actually provided as evaluated by the recipient (ERA patients), and mental health i.e. depressive and anxiety feelings.

METHODS

Sample and Data Collection

The present study made part of the "European Research on Incapacitating Diseases and Social Support" (EURIDISS) (Euridiss, 1990), a multicenter, multidisciplinary study set up to explore the relationships between "disease variables", "social support" and a number of quality of life measures among patients with early RA.

From the hospitals in the northern region of the Netherlands the rheumatology patient files were screened. Those patients presenting complaints referring to or suspect for RA were selected. Next, the following inclusion criteria were applied: resident in the sampling areas, aged 20–70, diagnosis of RA according to the 1987 ARA criteria (Arnett et al., 1988) assessed by the treating rheumatologist, and a disease duration of four years or less. Exclusion criteria were: other serious incapacitating disorders for reasons of possible interference with RA, stage IV according to Steinbrocker's FG (wholly handicapped or bedridden) (Steinbrocker, 1949), or probable unavailability to follow up. According to these criteria, the initial sample consisted of 292 patients with rheumatoid arthritis (response rate = 88.2%).

A signed letter of informed consent was obtained from all the subjects participating in the study.

Of the patients 36% were males and 64% were females, 78% of the patients was married. Twenty two percent of the respondents had a paid job, 41% called themselves a housewife or houseman, 21% was disabled, 12% was retired and the remaining 4% was unemployed. The mean age of the respondents was 53.4 years (range: 21–71; sd = 11.9) and the mean disease duration was 1.8 years. During extensive interviews at the patients' home, of 280 of these patients, information was collected on, among other things, social support and mental health. All the interviewers received a thorough interview-training and were supplied with a detailed interview instruction manual. The time needed to administer the interview took about 2 h . Information on personality was collected by means of a questionnaire. Because of incomplete data, the final analyses were performed on 243 respondents.

Instruments

Scales from the EURIDISS interview were employed for measuring social support. Supportive transactions were assessed with the "Social Support Questionnaire for Transactions" (SSQT) (Suurmeijer et al., 1995). It measures the amount of supportive transactions. Satisfaction with the actual social support received was assessed with the "Social Support Questionnaire: Satisfaction with transactions" (SSQS) (Doeglas et al., 1996). It measures the degree of satisfaction with the support provided from the perspective of the recipient i.e. the RA patient. As has been described in greater detail elsewhere (including all items and response categories), the instruments have been extensively tested to insure validity and reliability (Suurmeijer et al., 1995; Doeglas et al., 1996). In order to make our results comparable to those of Fyrand et al. supportive transactions and support satisfaction were measured in terms of (1) social companionship transactions and social companionship satisfaction (5 items, Cronbach's $\alpha = 0.64$ resp. 0.80 [Cronbach, 1951]); (2) emotional supportive transactions and emotional support satisfaction (11 items, $\alpha = 0.80$ resp. 0.84); and (3) instrumental supportive transactions and instrumental support satisfaction (7 items, $\alpha = 0.62$ resp. 0.80).

Information on supportive transactions and satisfaction with these transactions was obtained by asking the patients each item twice: the frequency of supportive transactions was registered by asking the respondents whether certain transactions happened ''seldom or never'' (score 1), ''now and then'' (score 2), ''regularly'' (score 3) or ''often'' (score 4). In addition, information on the (dis)satisfaction with the amount of related transactions received was obtained by asking the patients whether the amount of transactions was ''much less than I like'' (score 1), ''less than I like'' (score 2) or ''just as much as I like'' (score 3). Higher scores refer to more supportive transactions or more satisfaction, respectively.

The shortened version of the *Eysenck Personality Questionnaire* (EPQ-R) (Eysenck and Eysenck, 1984; Sanderman et al., 1991) was administered as a measure of personality in both groups. In total, the questionnaire counts 48 items, divided across 4 subscales: Neuroticism, Extraversion, Psychoticism and Lie. Each subscale counts 12 items. Respondents had to indicate whether or not they agreed with each of the 48 statements. After recoding, the range of the subscales runs from 0 to 12. The higher the score on whatever subscale, the more respondents presented that particular personality characteristic. In this paper we will concentrate on the subscales Neuroticism and Extraversion. Cronbach's α were 0.82 and 0.81, respectively.

Mental health was measured with the ''General Health Questionnaire, 28 item version'' (GHQ-28) (Goldberg and Williams, 1988; Sanderman and Stewart, 1990; Krol et al., 1994). Due to possible contamination of some items by the RA condition itself (Smedstadt et al., 1996) and to enable a comparison with the results of Fyrand et al. it was decided for the present analyses to use two subscales of the GHQ-28: the presence or absence of feelings of anxiety and depressive mood. Each subscale consists of seven items with scores running from (1) not at all, (2) no more than usual, (3) rather more than usual and (4) much more than usual. The higher the score, the worse the mental health (more feelings of anxiety and/or depressive mood). Cronbach's α were respectively 0.82 and 0.86.

Data analyses were conducted with SPSS (Nie et al., 1975) for descriptive statistics and bivariate correlations and LISREL 8 program (Jöreskog and Sörbom, 1993) for the development and testing of a path model.

RESULTS

The means and standard deviations of all relevant variables are presented in Tables I and II. From these tables it can be concluded that apparently persons with an extravert personality profile were somewhat more able to mobilize supportive transactions (Table I) while persons with a neurotic profile were less satisfied with the social support provided to them. Furthermore, as stated in the introductory section, our findings confirm that mental health was more strongly related to the satisfaction with supportive transactions than with the transactions alone.

Next, we tested two models: one in which the relationship between personality profile, supportive transactions and mental health was analysed, and one in which the relationship between personality profile, satisfaction with related supportive transactions and mental health was analysed. Analyses were performed using LISREL 8 (Jöreskog and Sörbom, 1993). In order to achieve maximum comparability with the model Fyrand et al. presented, we analysed a path model in which measurement error was not taken into account. However, we also did perform analyses with measurement errors. The results of these latter analyses were largely similar to the results presented hereafter.

The results for the two models with transactions (model 1) respectively satisfaction (model 2) are presented in Table III.

This table contains for each model the χ^2 values, together with degrees of freedom and significance level, and two fit indices, RMSEA and ECVI. For the root mean square error of approximation (RMSEA) a value below 0.05 is supposed to indicate a good fit, values up to 0.08 being acceptable as well. The expected cross validation index (ECVI) is an index that takes fit as well as parsimony of the model into account and therefore ''protects'' the researcher for adding too many irrelevant parameters into the model (Browne and Cudeck, 1989). ECVI values should be low. Especially values lower than the ECVI for the saturated model indicate a good fit of the model. Figures 3 and 4 present the best fitting models (only significant path coefficients).

The main conclusion that can be derived from these figures is that neuroticism has a direct effect on both anxiety and depression apparently regardless the amount of supportive transactions or

TABLE I

Bivariate correlations between neuroticism, extraversion, emotional support transactions, social companionship transaction, instrumental support transaction, anxiety and depressive mood; means and standard deviations[a]

	1	2	3	4	5	6	7
1. Neuroticism	1.00						
2. Extraversion	−0.26**	1.00					
3. Emotional support transactions	−0.02	0.18**	1.00				
4. Social companionship transactions	−0.10	0.28***	0.33***	1.00			
5. Instrumental support transactions	0.07	0.11*	0.43***	0.34***	1.00		
6. Anxiety	0.35***	−0.09	−0.02	−0.10	0.06	1.00	
7. Depressive mood	0.37***	−0.10	−0.07	−0.19**	0.10	0.53***	1.00
Means	4.27	7.64	27.13	11.56	13.34	11.79	8.64
Standard deviations	3.17	3.85	4.32	2.29	2.85	3.64	2.67

[a] A higher score on a certain measure refers to more of the characteristic involved.
* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$ (one tailed).

TABLE II

Bivariate correlations between neuroticism, extraversion, emotional support satisfaction, social companionship satisfaction, instrumental support satisfaction, anxiety and depressive mood; means and standard deviations[a]

	1	2	3	4	5	6	7
1. Neuroticism	1.00						
2. Extraversion	−0.26***	1.00					
3. Emotional support satisfaction	−0.29***	0.12*	1.00				
4. Social companionship satisfaction	−0.18**	0.13*	0.51***	1.00			
5. Instrumental support satisfaction	−0.07	−0.03	0.36***	0.49***	1.00		
6. Anxiety	0.35***	−0.09	−0.26***	−0.19**	−0.20***	1.00	
7. Depressive mood	0.37***	−0.10	−0.32***	−0.29***	−0.07	0.53***	1.00
Means	4.27	7.64	31.10	13.80	20.03	11.79	8.64
Standard deviations	3.17	3.85	2.89	1.90	2.13	3.64	2.67

[a] A higher score on a certain measure refers to more of the characteristic involved.
* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$ (one tailed).

TABLE III

Final models personality, social support and mental health: LISREL results

Model	χ^2	df	p	RMSEA	ECVI
1. Transactions	10.42	10	0.40	0.011	0.19 (sat: 0.23)
2. Satisfaction	13.93	10	0.18	0.039	0.21 (sat: 0.23)

satisfaction with these transaction. In addition, the impact of neuroticism on depression but not anxiety is also mediated by the satisfaction with social companionship. Neuroticism had no significant direct effect on supportive transactions.

In contrast, the impact of extraversion on mental health (both depression and anxiety) is always indirect and runs mainly via companionship transactions. Finally, for emotional support there was no direct effect left on mental health when personality characteristics were entered into the model. Although more supportive transactions were elicited by people with an extravert personality profile, the satisfaction with this type of transactions was determined by neuroticism.

CONCLUSIONS AND DISCUSSION

In general, we found (like Fyrand et al. did) a different pattern of relationships between different personality traits, different types of supportive transactions and various types of mental health. But the pattern we found in this ''transaction model'' differed markedly from that of Fyrand et al. When supportive transactions were replaced by the satisfaction with these transactions (not investigated by Fyrand et al.), the pattern of relationships encountered in this ''satisfaction model'' also differed markedly from that in the ''transaction model'' of Fyrand et al. and it differed also markedly from the pattern of relationships encountered in our ''transaction model''.

The five main conclusions that can be derived from our findings are, firstly, that neuroticism but not extraversion had an independent effect on both anxiety and depression (more neurotic people had more anxiety and depressed feelings). Secondly, that the effect of neuroticism on depression was also mediated by companionship as

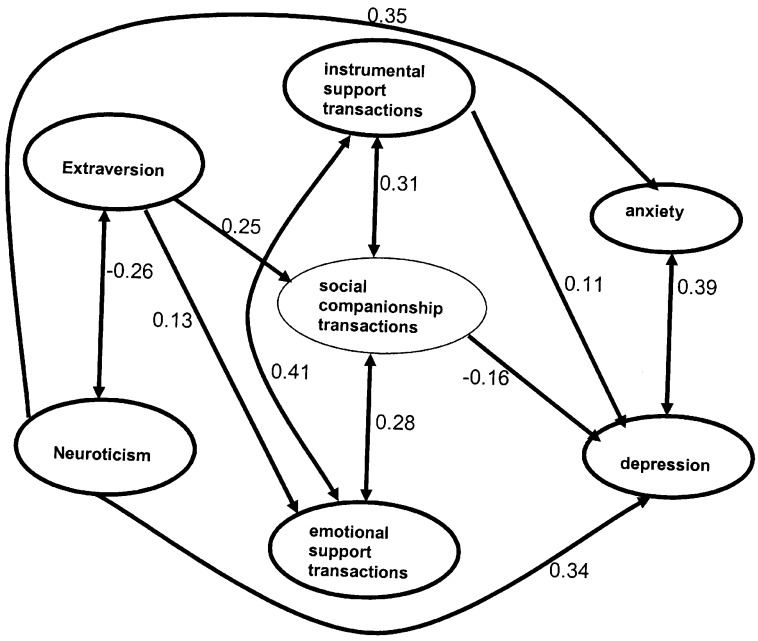

Figure 3. Final structural equation model of personality characteristics, social support transactions and mental health aspects (''transaction model'') (N = 243; all paths are significant).

far as satisfaction with these kind of transactions was concerned (more neurotic people had less companionship satisfaction and a more depressed mood). Thirdly, that companionship, both transactions and satisfaction, had an independent effect on depression but not on anxiety (respondents with more companionship had a less depressed mood). Fourthly, that the effect of emotional support ran via social companionship (both transactions and satisfaction) (more emotional supportive transactions and satisfaction with these transactions were expressed in companionship leading to a less depressed mood). And finally, that instrumental supportive transactions were directly related to depressive feelings (more depressed respondents received more instrumental supportive transactions) and that the satisfaction with instrumental supportive transactions was directly related to anxiety (more satisfation with this type of supportive transactions was related to less anxiety).

These different relationships between instrumental supportive transactions and satisfaction respectively and the different aspects of

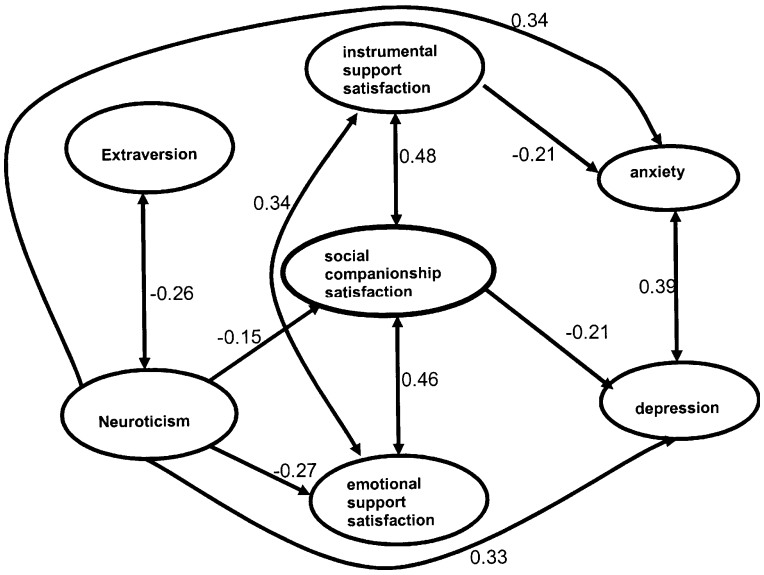

Figure 4. Final structural equation model of personality characteristics, social support satisfaction and mental health aspects (''satisfaction model'') (N = 243; all paths are significant).

mental health are somewhat difficult to interprete. If we conceive depressive feelings as a mental reaction to *actual* losses and anxiety as a mental reaction to *potential* losses then we might interprete the (weak) positive relationship of instrumental supportive transactions with depression as a reaction to feelings of loss of autonomy while more satisfaction with this type of support might just mitigate the deterrent effect of feelings of potential losses.

Apart from the strength of the relationships in the ''transaction model'' and the ''satisfaction model'', the most striking difference between these two models is that neuroticism is only related to satisfaction with supportive transactions but not with the transactions themselves. This is in sharp contrast with the findings of Fyrand et al. and their interpretation of the relationships between personality (neuroticism), social support (emotional supportive transactions) and mental health (depressive mood).

Another striking finding is that, apparently, social companionship – both transactions and satisfaction with these transactions – is the most important part of the social support people experience. Having people to socialize with elicits simultaneously more

emotional and instrumental supportive transactions, a greater satisfaction with these transactions which, in turn, reduces the degree of depression and partly, also anxiety leaving them, consequently, in a better mental shape. It also partly mediates the effect of neuroticism on depressive mood. In addition, considering both the strength of the path coefficients and the correlation coefficients between neuroticism, social companionship and emotional support, we think that, in contrast with the interpretation of Fyrand et al. (see above), it is primarily the satisfaction with social companionship interactions that ''interpretes'' the relationship between the satisfaction with emotional support received and depressive mood and not neuroticism.

The fact that social companionship played such a central role regarding the mental health of our respondents, once more underscores the importance of maintaining this type of relationships for people's mental health. To put it differently, social companionship can be considered as multifunctional activity, i.e. ''doing things together'' provides people simultaneously with emotional and instrumental support. Maintaining relationships despite a disabling condition implies that people maintain their social capital which gives them the opportunity to derive rewards that otherwise could not or only with more difficulty be achieved. Although neuroticism had an independent effect on mental health, network interventions aimed at the prevention of a reduction of people's social relations may contribute to people's mental health and quality of life (Suurmeijer et al., 2001; Fyrand et al., 2003; Ethgen et al., 2004). More generally, we would like to claim that a supportive environment including supportive behaviors and attitudes of health professionals as well are beneficial to the mental health of chronically ill people. Supportive health professionals contribute to a better social and mental functioning and quality of life of (chronically) ill people (and related significant others such as, for instance, partners and parents) (Schou and Hewison, 1998; Hoevenaars et al., 2000; Austin et al., 2002).

One should be critical to the causal suggestions implied in the models. As Fyrand et al. already emphasized, the cross-sectional nature of the data make causal inferences rather hazardous. That is particularly the case for the relationships between the several types social supportive transactions and mental health aspects (Van

Sonderen and Sanderman, 2001). One might agree with their conclusion that personality traits such as distinguished in their and our study ''most probably are causes rather than effects of both mental health status and social support''. However, also this interpretation should not be taken for granted. Besides that depressed people may avoid interactions with other people, interactions with ''deviating people'' (for example distressed people) may cause discomfort to other people. In this sense, these interactions may become ''costly'' to them resulting on the one hand in the (gradual) avoidance of interactions by these people with the patient and on the other hand to less satisfaction of the distressed person with these interactions (Tijhuis et al., 1998; Doeglas et al., 2004). Furthermore, Charmaz (1983) and Horowitz (1980) among others, pointed out that an additional possible reversal of the relationship between personality and social support should be considered. That is: persons who received no or only little supportive transactions and/or who felt lonely before the onset of a chronic illness, will adjust less well to such a serious event and develop a more neurotic personality. A very recent study showed that personality characteristics (''the big five'' particularly ''conscientiousness'' and ''agreeableness'' and, for women, also ''neuroticism'') were less stable than is often assumed and that changes occur in later life due to all kinds of influences related to the life course and normative social role transitions (Srivastava et al., 2003). Major role transitions often occur in patients suffering from a chronic condition such as RA. This is certainly true for the work role (Doeglas et al., 1995) but may also be expected for other major roles such as the spousal and parenting roles. Such (stressful) events may not only change the need for certain types of supportive transactions but also change personality characteristics such as neuroticism and extraversion just because of the level of the supportive exchanges preceding the onset of illness. More generally stated, personality traits have been and are being acquired during long lasting socialization processes in which people, among other things, learn how to acquire supportive interactions which, in turn, will shape personality. In this sense, personality can be considered as a result of supportive interactions, not only in early life but in later life as well. Thus, cause-and-effect interpretations of the relation between personality and, for example, social support depend heavily on the time scale or time span used.

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