The need for closure in caregivers of people with psychosis

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SUMMARY. **Aim** – The aim of the study was to determine how carer need for closure relates to expressed emotion. It also examined the links between carer need for closure and patient functioning including patient need for closure. **Methods** – In a cross-sectional study, 70 caregivers of patients with psychosis completed the Need for Closure Scale (NFCS), the Camberwell Family Interview (CFI) and measures of distress, burden, coping and social network. The NFCS was assessed in terms of its two primary dimensions: a need for simple structure (NFSS) and Decisiveness. Patients also completed measures of psychotic symptoms and affect, and in 50 matched caregiver patient dyads, direct comparisons were undertaken between caregiver and patient NFCS scores. **Results** – No links were found between caregiver NFC and EE in this predominately low EE sample. More decisive carers had higher levels of self esteem, were less distressed, and resorted less to avoidant coping. The need for simple structure was greater in carers who lacked a confidante. As predicted, patients reported significantly higher NFSS and lower Decisiveness scores than carers, but no relationship was observed between caregiver NFC and patient symptoms of psychosis. **Conclusions** – Carers reporting confident decision making were also more likely to report adaptive functioning in terms of having lower levels of avoidant coping and distress, and higher levels of self esteem. The results suggest that this style of thinking might be a helpful way of coping with some of the difficulties involved in caring for someone with psychosis.

Declaration of Interest: None.

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NEED FOR CLOSURE

Reasoning processes reflected in a need for closure (NFC) have recently attracted attention in psychosis literature (e.g. Colbert *et al*., 2006). Individuals with high NFC tend to be impatient or impulsive. They 'leap' to judgments on the basis of inconclusive evidence, exhibit rigidity of thought, and are reluctant to entertain views different from their own (Kruglanski & Webster, 1996; Kruglanski & Mayseless, 1988). They seem less amenable to persuasion (Kruglanski *et al*., 1993) and less motivated to search for additional information once an opinion has been formed (Klein & Webster, 2000; Van Hiel & Mervielde, 2002).

The Need for Closure Scale (NFCS; Webster & Kruglanski, 1994) is a self-report questionnaire; recent evidence attests a two factor structure (Neuberg *et al*., 1997; Roest *et al*., 2006; Colbert *et al*., 2006; Freeman *et al*., 2006; Mannetti *et al*., 2002). A first factor, described as *Need for Simple Structure (NFSS)*, reflects an individual's desire for order and a simple structure compatible with their existing beliefs. NFSS aggregates scores of three highly related NFCS subscales (i.e. preference for order, preference for predictability, and discomfort with ambiguity). The second factor, *Decisiveness*, taps the ability to reach decisions rapidly and confidently, as measured by the decisiveness sub-scale total.

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There have now been three primary studies of NFC in people with psychosis (Colbert *et al*., 2006; Freeman *et al*., 2006; Bentall & Swarbrick, 2003) and two studies with delusion prone individuals (Colbert & Peters, 2002; McKay *et al*., 2006). NFC tends to be greater in individuals with delusions and those vulnerable to delusions than in control groups (Colbert *et al*., 2006; Bentall & Swarbrick, 2003; Colbert & Peters, 2002). While the results linking NFC and psychotic symptoms have been inconsistent, it is much more clearly related to affect, particularly anxiety (Bentall & Swarbrink, 2003). Freeman *et al*. (2006) observed that NFSS was positively linked to depression and anxiety in patients with psychosis. In contrast, Decisiveness was negatively correlated with depression and anxiety (Freeman *et al*., 2006).

Individuals with psychosis often depend on extensive support from caregivers (Fleury *et al*., 2008). Expressed emotion (EE) is a well established measure of the affective climate in caregiving relationships (Mubarak & Barber, 2003). High EE, identified by caregivers' elevated levels of critical, hostile and/or intrusive behaviours towards patients, is a robust predictor of poor patient outcomes in psychosis (Bebbington & Kuipers, 1994; Butzlaff & Hooley, 1998). High EE caregivers are often less flexible and less tolerant of patients' problems than their low EE counterparts (Leff & Vaughan, 1985; Hooley & Hiller, 2000; Van Humbeeck *et al*., 2002). They tend to be more behaviourally controlling (Hooley & Campbell, 2002; Peterson & Docherty, 2004), and report an 'internal' locus of control. They are more inclined to believe that, through taking action themselves, they can effect change (Hooley, 1998; 2004). High EE caregivers also believe in the effectiveness of their behaviour; for example, that expressing dissatisfaction with patients is a good way to control symptoms (McNab *et al*., 2007). To date, however, there have been no empirical investigations of the links between caregiver EE and reasoning styles such as need for closure. If such links exist, this might suggest novel pathways for influencing caregiver functioning and, potentially, patient outcomes. We do know, however that high EE is closely linked with reduced flexibility and openness (Hooley & Hiller, 2000; Van Humbeeck *et al*., 2002). Openness reflects an individual's curiosity towards novel situations and a less conventional approach to rules (Van Humbeeck *et al*., 2002). Individuals high in NFC favour structured, ordered and predictable environments (Kruglanski & Maysless, 1988). We also know that social isolation can affect many caregivers with psychosis and leave them lacking support and encouragement from peers (Magliano *et al*., 2006). In the absence of support, caregivers may be less inclined to try novel ways of managing situations and tolerate periods of uncertainty.

There is clinical merit in examining how caregiver NFC relates to patient functioning, including patient NFC. Previous investigations of thinking and information-processing styles (e.g. mentalising skills) in the non-psychotic relatives of patients have identified similar deficits to those reported by patients, albeit much less marked (Janssen *et al*., 2003; Irani *et al*., 2006; Versmissen *et al*., 2008).

We sought to determine the relationship of NFC to levels of EE, emotional functioning, coping and support in caregivers. In caregiver-patient dyads, we also examined the relationship between caregiver NFC, patient symptomatology and patient NFC. We tested the following hypotheses:

- Caregiver NFSS would be positively correlated with high EE (high criticism, hostility and emotional over-involvement), and negatively with their social network.
- Caregiver Decisiveness would be negatively correlated with caregiver emotional dysfunction, burden and avoidant coping.
- Patient affective symptoms would be positively correlated with caregiver NFSS, but negatively with caregiver Decisiveness. Moreover, patients would report higher NFC scores when compared to caregiver scores.

METHOD

Participants

The study comprised patient participants and their caregivers recruited as part of the Psychological Prevention of Relapse in Psychosis (PRP) Trial (ISRCTN83557988) (Garety *et al*., 2008). This was a multi-centre British randomised controlled trial of cognitive behaviour therapy and family intervention for psychosis. The participants were recruited from specified NHS teams within the research centres of London and East Anglia. They were eligible to take part in the study if they were aged 18-65, had an International Classification of Diseases, version 10, F20 diagnosis of non affective psychosis (schizophrenia, schizoaffective disorder, persistent delusional disorder) and had experienced a recent relapse in positive symptoms. Patients were excluded from participation in the study if they had a known organic disorder, a primary diagnosis of substance abuse had moderate to severe learning disability.

Those in contact with caregivers for at least 10 hours a week were also asked for consent to approach their caregivers. In line with previous studies (Kuipers *et al*., 2006), caregivers were defined as those who were parents, spouses, partners of an identified patient and living with the patient. It also referred to those individuals living with a patient as a caregiver or individuals acknowledged as caregivers not living with the patient but maintaining three or more face to face weekly contacts with the patient, totalling at least 10 hours. The data used in the analyses presented here were obtained by trained assessors during the baseline assessment phase and before random allocation. The South Thames Multi-Centre Research Ethics Committee provided ethical approval of the study.

CAREGIVER MEASURES

The Need for Closure Scale (NFCS; Webster & Kruglanski, 1996)

The NFC scale is a 42-item self-report instrument designed to measure an individual's desire to obtain firm answers, and avoid ambiguity and confusion. Participants rate how much they agree with a statement on a six-point scale. Five facets are assessed: preference for order and structure (e.g. I enjoy having a clear and structured mode of life); preference for predictability in future contexts (e.g. 'I dislike unpredictable situations); discomfort with ambiguity (e.g. I feel uncomfortable when someone's meaning or intention is unclear to me); closed-mindedness (e.g. I usually do not consult many different opinions before forming my own view), and decisiveness (e.g. I usually make important decisions quickly and confidently). Scores range from 42-252; higher scores indicate greater need for closure. In line with recommendations from Neuberg *et al*. (1997), we used two sub scores in our analyses: Decisiveness and NFSS. The reliability and validity of the NFCS is well established in non-clinical populations (Berenbaum *et al*., 2008; Webster & Kruglanski, 1994) and has been used successfully in varied psychosis populations including those with acute presentations (e.g. Bentall & Swarbrick, 2003; Colbert *et al*., 2006). For example, Bentall & Swarbrick (2003) used the NFCS with individuals with current delusions and individuals in remission, whilst Colbert *et al*. (2006) used the measure with an early psychosis sample experiencing current delusional beliefs rated at least moderate or greater on the Positive and Negative Syndrome Scale (PANSS, Kay *et al*., 1987).

Camberwell Family Interview (Vaughn & Leff, 1976)

This is the 'gold standard' measure of EE, a semi-structured audiotaped interview. Interviewers ask caregivers about their relationship with the patient. EE ratings are made from the audiotape on five dimensions: critical comments (a frequency count), hostility (0, 1, 2 or 3), emotional over involvement (0-5), positive remarks (frequency count) and warmth (0-5). Caregivers were defined as high EE if they made six or more critical comments, displayed any degree of hostility (i.e. scored 1 or above), or scored three or more on the emotional over-involvement scale. Taped interviews had been rated previously by assessors trained to criterion by Dr. Christine Vaughn; high correlations or phi coefficients (i.e. >0.76) were obtained on all EE components and the overall EE category. The EE raters were blind to the hypotheses in the current study.

The General Health Questionnaire (GHQ-28; Goldberg & Williams, 1988)

The GHQ-28 is a scaled version of the General Health Questionnaire (GHQ). It has four sub-scales (somatic symptoms, anxiety and insomnia (stress), social dysfunction, and depression), each with seven items rated on a four-point Likert scale (0-3). The current study used GHQ-28 total scores, with higher scores denoting higher levels of distress.

The Experience of Caregiving Inventory (ECI, Szmukler et al., 1996)

The ECI is a 66 item, self-report questionnaire developed to assess the subjective negative and positive experience of caregiving. Respondents rate how often they have thought about particular issues in the last month prior to completing the questionnaire on a five-point scale. Negative caregiving appraisal is calculated from the sum of the eight negative ECI subscales, and positive appraisal from the sum of the two positive ECI subscales. Higher scores reflect greater negative or positive caregiving appraisal. The scale has good reliability and validity (Szmukler *et al*., 1996).

Rosenberg Self-Esteem Scale (Rosenberg, 1965)

This well-established self-report measure has been designed to assess current levels of global self-esteem. It comprises ten items that are measured on a four point Likert-style scale. Higher totalled scores indicate lower self-esteem.

Abbreviated COPE Inventory (Modified from Carver et al., 1989)

The COPE Inventory (60 items) assesses an extensive range of functional and dysfunctional coping

responses on a four-point scale. It comprises fifteen distinct scales and total scores for each scale are calculated by summing individual items. The abbreviated COPE includes all the scales, but has two questions per scale instead of the usual four. As in previous studies (Raune *et al*., 2004; Kuipers *et al*., 2006) we used an 'avoidant coping' scale, which comprises the summed scores of behavioural disengagement, mental disengagement, alcohol/drug use, and denial subscales. The COPE has good reliability and validity (Carver *et al*., 1989; 1994a, b).

Confidante question

An indication of caregiver social support was assessed by asking caregivers to answer Yes or No to the following question: *Do you have someone in whom you can confide?* Similar brief questions have been used in studies of physical disorders (Dickens *et al*., 2004).

PATIENT MEASURES

The Need for Closure Scale (NFCS; Webster & Kruglanski, 1994) and Rosenberg Self-esteem Scale (Rosenberg, 1965)

As reported in the caregiver measures.

The Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987)

This is a thirty-item semi-structured interview designed to rate psychotic symptomatology in relation to the last 72 hours. It has three subscales; positive symptoms, negative symptoms, and general psychopathology. All items are rated on a 7-point Likert type scale representing increasing levels of psychopathology. Trained assessors obtained high levels of inter rater reliability with intra class correlation coefficients of 0.92 and above.

Beck Depression Inventory-ll (BDI; Beck et al., 1996)

The BDI-ll is a well established 21-item, four point self-report measure for the assessment of depression in the previous two weeks.

Beck Anxiety Inventory (BAI; Beck et al., 1988)

The BAI is a self-report, 21-item measure used for the assessment of common anxiety symptoms. Individual items are measured on a four point (0-3) scale.

STATISTICAL ANALYSES

Analyses were conducted using the SPSS for Windows (version 15.01). As this study is one of the first to use the NFCS with caregivers of patients with psychosis, reliability analyses using the Cronbach alpha statistic were reported. Further, NFCS inter-subscale correlations were undertaken with caregiver and patient NFCS data. Bivariate correlations using the Pearson's r coefficient were employed to investigate the associations between caregiver NFC, EE, and key caregiver and patient variables. Caregiver-patient NFC differences were examined using Paired Samples t-tests. All statistical tests were two-tailed, with an alpha level of $p < .05$.

RESULTS

Demographic data

In the PRP randomised trial (Garety *et al*., 2008), 301 patients consented and were recruited out of 683 screened. Of these latter, 114 patients with caregivers were excluded from the recruitment process because they did not give consent for their carer to be approached. A comparison of patients who consented and those who did not indicated that consenting patients were more likely to be male (Chi Square = 8.23, df = 1, P = 0.004), with a history of voluntary admissions (Chi Square = 17.2, df = 1, P <. 01). Consenters were less likely to have a history of violence (Chi Square = 11.3, df = 1, P = 0.001) or sexual offences (Chi Square = 7.43, df = 1, P = 0.006). 94 patients with carers therefore gave consent to be included in the trial, and a further 11 carers declined to participate in that study despite patient consent. For the measures used in this study, 70 participants and their caregivers provided sufficient information to be included.

The majority of caregivers (N=70) were female (66%) and white (85.9%), with a mean age of 52 years (SD 12.8; range 26 to 78). Over half were married (63.4%). Approximately one third of caregivers described themselves as unemployed (30.4%) while 42% reported they were in paid employment. Caregivers were predominately the parents (47.8%) or partners (39.4%) of the patient. The patients were mainly white (82%) and male (73.2%), with a mean age of 35.8 years (SD 12.0; range 18-64). Most were single (62%) and unemployed (87.1%). More than two thirds of patients (78.1%) lived with their caregivers. The average illness history from first contact with mental health services was 9.4 years (SD 10.1).

Table I – *Need for Closure Scale, mean subscale scores and Cronbach alpha coefficient in caregivers (N = 70) and patients (N = 50).*

Need for Closure Scale (NFCS)	Mean	(SD)	Range	Cronbach's alpha
NFCS Total Score	P: 170.1	(15.3)	143-213	0.50
	C: 164.5	(22.3)	93-204	0.83
Preference for order and structure	P: 42.62	(6.92)	27-60	0.53
	C: 41.74	(8.41)	20-57	0.70
Preference for predictability	P: 36.73	(6.92)	20-48	0.71
	C: 32.43	(7.51)	14-48	0.81
Discomfort with ambiguity	P: 40.10	(7.85)	19-54	0.67
	C: 36.97	(7.79)	17-50	0.60
Closed mindedness	P: 26.25	(6.14)	13-41	0.45
	C: 24.98	(4.99)	13-38	0.40
Decisiveness*	P: 23.91	(7.69)	7-42	0.71
	C: 27.69	(6.91)	10-42	0.70
NFSS*	P: 119.5	(15.3)	91-152	0.74
	C: 111.1	(20.4)	59-150	0.85

P - patient, C – caregivers
*Subscales used in main analyses
NFSS (i.e. aggregated scores for preference for order, preference for predictability, and discomfort with ambiguity)

Table II – *Caregiver NFCS: Pearson's correlations inter-subscale (N = 70).*

NFCS	Predictability	Order	Ambiguity	Close-mindedness	Decisiveness
Predictability		0.70 (P<0.001)	0.65 (P<0.001)	0.28 (P = 0.03)*	- 0.12 (P = 0.36)
Order			0.50 (P<0.001)	0.25 (P = 0.04)*	0.14 (P = 0.24)
Ambiguity				0.12 (P = 0.33)*	- 0.18 (P = 0.13)
Close-mindedness					- 0.09 (P = 0.49)
NFSS	0.90 (P<0.001)	0.86 (P<0.001)	0.83 (P<0.001)	0.25 (P = 0.04)*	- 0.06 (P = 0.65)

NFSS (i.e. aggregated scores for preference for order, preference for predictability, and discomfort with ambiguity)
*N = 65

The Need for Closure Scale (NFCS): Caregiver

The mean sub-scale scores of the caregiver NFCS are reported in Table I along with the internal reliability coefficients (Cronbach alpha). The total score and four of the five sub-scales had satisfactory Cronbach alpha coefficients. Table II reports the inter-subscale correlations between the caregiver NFCS sub-scales. The scales comprising NFSS (i.e. aggregated scores for preference for order, preference for predictability, and discomfort with ambiguity) were all strongly positively correlated. Closed-mindedness was weakly correlated with two of these sub-scales (i.e. preference for order & preference for predictability). Decisiveness was negatively correlated (albeit non-significantly) with all the sub-scales excluding preference for order. Overall, the pattern of results was consistent with those of Neuberg *et al*. (1997).

The Need for Closure Scale (NFCS): Patient

Twenty patients had incomplete NFCS data; thus patient data is based on a smaller sub sample (n =50). There was, however, no significant differences between those patients with complete NFCS data sets and those without in terms of their age, and their scores on the PANSS positive, negative and general psychopathology subscales, and levels of anxiety and depression on the BAI and BDI respectively (p >.05).

The mean scores of the patient NFCS and the Cronbach alphas are also reported in Table I. Inter-subscale correlations are reported in Table III. As for caregivers, there were positive correlations between the preference for predictability and discomfort with ambiguity sub-scale scores. Decisiveness was significantly negatively correlated with preference for predictability, discomfort with ambiguity, closed-mindedness, and the NFSS.

Caregiver need for closure, caregiver EE and caregiver functioning

A summary of caregiver clinical variables are reported in Table IV. Approximately one third of carers (32.9%) obtained an overall rating of high EE. There were no sig-

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nificant correlations of overall EE or any of its individual sub-scales with NFSS or Decisiveness. However, caregiver Decisiveness was inversely correlated with avoidant coping low caregiver self-esteem and caregiver distress. There was also a weak negative correlation between NFSS and caregivers reporting that they had a confidante. Given that NFC in patient studies has been closely associated with mood (Freeman *et al*., 2006) and thus could be considered an indicator of mood, we repeated the significant correlations between caregiver Decisiveness and caregiver characteristics whilst controlling for their levels of distress on the GHQ-28. Caregiver Decisiveness continued to be inversely associated with avoidant coping (Partial r =.-0.26, P = 0.04, df =55) and carer self-esteem[a] (Partial r =-0.53, P = 0.001, df = 55). Likewise, NFSS remained negatively correlated with caregiver access to a confidante after controlling for caregiver distress (Partial r = -0.29, P = 0.03, df = 48).

There were no significant correlations between NFSS, Decisiveness, and prosocial caregiving processes (e.g. positive caregiving experiences, warmth) and negative caregiving appraisals (caregiver burden).

Table III – *Patient NFCS: Pearson's correlations inter-subscale correlations (N = 50).*

NFCS	Predictability	Order	Ambiguity	Close-mindedness	Decisiveness
Predictability		0.14 (P = 0.30)	0.38 (P = 0.004)	0.06 (P = 0.65)	- 0.38 (P = 0.004)
Order			0.21 (P = 0.11)	- 0.20 (P = 0.14)	0.09 (P = 0.53)
Ambiguity				0.20 (P = 0.15)	- 0.32 (P = 0.02)
Close-mindedness					- 0.41 (P = 0.002)
NFSS	0.71 (P<0.001)	0.63 (P<0.001)	0.78 (P<0.001)		- 0.30 (P = 0.03)

NFSS (i.e. aggregated scores for preference for order, preference for predictability, and discomfort with ambiguity)

Table IV – *Summary of clinical caregiver and patient clinical variables.*

	Mean	SD
Caregiver variables		
Emotional over involvement	1.7	1.21
Hostility	0.2	0.7
Critical comments	3.4	4.6
Positive remarks	1.9	1.8
Warmth	2.31	1.15
Distress	26.6	14.3
Avoidant coping	14.6	4.1
Self esteem	19.5	5.4
Negative caregiving appraisal	99.1	30.8
Positive caregiving appraisal	31.1	7.8
Patient variables		
BAI	21.3	15.3
BDI	24.8	13.4
PANSS – positive	17.2	5.4
PANSS – negative	16.6	5.2
PANSS – general	34.3	7.7
Self-esteem	24.5	6.2

Caregiver need for closure and patient functioning

Patient clinical variables are reported in Table IV. There were no significant associations between psychotic symptoms (PANSS-positive, PANSS-negative, PANSS-general), caregiver NFSS, and Decisiveness (P >.05). Caregiver NFSS scores were positively correlated with patient anxiety (Pearson's r = 0.31, P = 0.01, N = 67). There was a small and statistically insignificant association between caregiver NFSS and patient depression scores (Pearson's r = 0.22, P = 0.07, N = 69). There were no significant associations between caregiver NFSS and patient self-esteem scores (Pearson's r = 0.20, P = 0.12, N = 61). In contrast, caregiver Decisiveness was inversely correlated with patient depression (Pearson's r = -0.34, P = 0.004, N = 69) and self-esteem (Pearson's r = -0.35, P = 0.006, N = 61) but not significantly associated with patient anxiety (Pearson's r = -0.14, P = 0.24, N = 67). However, when the analyses were repeated, controlling for patient levels of NFC, no significant observations were observed between caregiver need for closure and patient affective symptoms(Partial r P >.05).

Need for Closure: caregiver and patient

There were positive associations between the NFSS scores in matched caregiver -patient dyads (Pearson's r = 0.33, P =0.02, N = 50). However there was no significant association for Decisiveness (Pearson's r = 0.17, P = 0.24, N = 50). The mean scores for caregivers and patients on the NFSS and Decisiveness were compared with Paired Samples t-Test; patients reported significant-

[a]N.B. Low scores indicate high self esteem.

ly higher scores on the NFSS (Mean diff = 7.84, t = 2.66, P = 0.01, 95%CI, -13.7 to -1.92), whereas the opposite was true for the Decisiveness sub-scale (Mean diff = 4.76, t = 3.60, P = 0.001, 95%CI, 2.10 to 7.41).

Table V – *Pearson's correlation between caregiver NFC and caregiver functioning.*

Carer variables	Carer NFSS	Carer Decisiveness
Criticism	p >.05	p >.05
Hostility	p >.05	p >.05
Emotional over involvement	p >.05	p >.05
Warmth	p >.05	p >.05
Positive remarks	p >.05	p >.05
Low/High EE*	p >.05	p >.05
Burden	p >.05	p >.05
Distress	p >.05	p >.05
Avoidant coping	p >.05	-0.34 (p <.01)
Carer self esteem	p >.05	-0.59 (p <.01)
Social support	-0.26 (p >.05)	p >.05

*Point-biserial

DISCUSSION

This study is one of the first to examine NFC in caregivers of patients with psychosis, and to explore its links with caregiver and patient characteristics. The questionnaire assessment of NFC by the NFCS comprised two distinct dimensions; the need for simple structure (NFSS), and Decisiveness. These dimensions were consistent with the results of Neuberg *et al*. (1997). Caregivers generally rated themselves as being decisive. They expressed moderate levels of discomfort with ambiguity and had a modest need for predictability and structure.

Contrary to our original predictions, there were no links between caregiver NFSS and EE. This is despite evidence suggesting that high EE caregivers tend to display elevated levels of rigidity, and intolerance, and are less flexible towards patients (Leff & Vaughn, 1985; Hooley & Hiller, 2000). On the face of it, these behaviours overlap with the profiles of individuals with high NFSS (e.g. rigidity of thought, reluctance to entertain views different from their own) (Kruglanski & Webster, 1996; Kruglanksi & Mayseless, 1988). However, consistent with our predictions, caregiver Decisiveness was related to other aspects of caregiver behaviour and functioning. Higher levels of Decisiveness were recorded in caregivers reporting lower levels of psychological distress and avoidant coping, and higher levels of self-esteem.

Although the Decisiveness sub-scale has not been critically evaluated, its importance as a single factor structure has been previously acknowledged (Neuberg *et al*., 1997; Freeman *et al*., 2006). In terms of the caregiving process, these findings suggest that caregiver Decisiveness may have some benefits. Caregivers often report feeling unsure about what to do for the best, and this can be stress provoking (Rose *et al*., 2006). Being able to decide confidently how to manage problems might help caregivers to feel more positive about themselves and their ability to cope. They may also be less inclined to engage in avoidant behaviours which are, themselves, associated with higher levels of distress (Raune *et al*., 2004). It is also worth noting the small inverse correlation between caregiver NFSS and social support; caregivers who expressed a greater need for structure, order and clarity were less likely to report access to a confidante.

The initial significant correlations between caregiver NFC and patient affect were no longer apparent once patient NFC scores were controlled for. However, as predicted, NFC scores differed within matched caregiver-patient dyads; patients obtained significantly higher NFSS scores, while caregivers had significantly higher Decisiveness sub-scale scores. The confusion and ambiguity commonly associated with psychosis might mean that patients have a greater need for and derive greater benefit from an ordered, predictable and unambiguous environment than their caregivers. There is some support for this view (Bentall & Swarbrick, 2003; Colbert & Peters, 2002; Roberts, 1991). Alternatively, due to the myriad difficulties associated with supporting their relatives with psychosis, Decisiveness might be more helpful for caregivers. This view is supported in the context of recent evidence, which suggests that indecisiveness can be problematic (Germeijs & De Boeck, 2002). Indecisive individuals depend upon larger amounts of information before being able to formulate an opinion, and are more likely to doubt the validity of their decisions (Reed, 1985). A caregivers' role, however, can often require the rapid consideration of small amounts of new information (e.g., subtle changes in a patients' mental state) and a prompt response. Such responses then seem to be associated with less distress in caregivers.

Limitations

Firstly, the cross-sectional design precludes conclusions about the direction of causality. Further, the reliance on correlational analysis, together with the size of the coefficients, would have increased the chance of Type 1 errors. However, because this area of research is relatively new in psychosis, especially in caregivers, we chose not to adjust the p-level, while readily acknowledging the

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necessity of replication. The patients and caregivers within the sample were predominately white and the average illness length was 11 years. They were also predominately low EE and thus may not be a typical caregiver sample (Kuipers *et al*., 2006), limiting generalisabilty. Future studies would benefit from a broader sample (e.g. by including patients with shorter illness histories).

There is already evidence suggesting that NFC is a dimension of stable individual differences, but is also situationally responsive (Kruglanski & Webster, 1996). Thus, the reasoning styles exhibited by caregivers (at the time of patient relapse) may be different from those reported at less emotionally charged times. However, changes in NFC in individuals with psychosis have not been associated with corresponding changes in positive symptoms. Indeed, early indications suggest that NFC in psychosis appears to be a stable trait that does not necessarily alter with symptomatic recovery (Colbert *et al*., 2006). Finally, as others have found (Freeman *et al*., 2006), the assessment of NFC from self-report measures is problematic. Participants may be poor witnesses to their own reasoning processes. This may have contributed to the lack of association between EE and NFC. We need methods for identifying specific reasoning styles that are less reliant on self-report data.

Clinical implications

Caregiver distress is an important determinant of the decision to continue providing care and support to individuals with psychosis. Caregivers who are negatively affected by their role are less likely to continue to provide care; this, in turn, can have adverse effects on patient outcomes (Oyebode, 2003; Vitaliano *et al*., 2003). The current findings suggest that improved functioning in carers (i.e. lower distress, less avoidant coping, and higher self esteem) was associated with one aspect of caregiver reasoning; specifically, their ability to make decisions in a quick and confident manner. These findings, although preliminary, may have implications for cognitive behavioural-based interventions for carers (Barrowclough & Tarrier, 1992; Kuipers *et al*., 2002). Coping strategies that build on promoting greater levels of effective problem solving skills (of which Decisiveness should form part) may be of clinical benefit in reducing the negative impact of the illness on caregivers as well. There is some support for this from a study suggesting good problem solving skills in caregivers were linked to less negative caregiving environments and relationships (O'Brien *et al*., 2009). Given the links between NFSS and the lack of a confidante, it would seem that greater efforts should be made to help carers increase their access to supportive networks, since this may have a positive impact on their ability to be cope with uncertainty in their care-giving role.

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