

## BELIEFS ABOUT ILLNESS AND THEIR RELATIONSHIP WITH HOPELESSNESS, DEPRESSION, INSIGHT AND SUICIDE ATTEMPTS IN SCHIZOPHRENIA

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### SUMMARY

**Background:** Although the negative appraisals of the illness may be related to suicidal thinking and behaviours in schizophrenia, this has been insufficiently studied. The aim of this study was to analyze the relationship between schizophrenic patients' cognitions about their illness and past suicidal behaviours. The relationship between patients' beliefs about their illness with potential mediators of suicidal behaviours such as depressive symptoms, hopelessness and insight was also investigated.

**Subjects and methods:** A group of 60 patients diagnosed with schizophrenia according to ICD-10 criteria belonging to a follow-up study were assessed one year after their last psychiatric admission. Psychopathological variables were assessed by the Calgary Depression Scale, Beck Hopelessness Scale and the first three items of the Scale to Assess Unawareness of Mental Disorder. The appraisals of the illness were assessed by the Personal Beliefs about Illness Questionnaire.

**Results:** Negative appraisals were associated with hopelessness and depressive symptoms. Negative expectations and stigma showed the strongest associations. Contrary to our expectations, this scale was not able to differentiate between patients with and without past suicidal behaviour.

**Conclusions:** Negative appraisals of the illness in patients with schizophrenia seem to have psychopathological consequences such as greater hopelessness and depression. Since these psychopathological features are linked to suicidal risk, the psychotherapeutic approach counteracting negative beliefs about the illness may reduce the risk of suicide.

**Key words:** schizophrenia - suicide attempt - beliefs about illness - hopelessness

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### INTRODUCTION

Suicidal behaviour is highly prevalent in schizophrenia. Approximately 5% of patients with this illness commit suicide (Palmer et al. 2005) and between 20% and 40% of them attempt it (Pompili et al. 2007). The factors with the strongest association with later suicide include being young and male, a higher level of education, depressive symptoms, a history of suicide attempts, active hallucinations, delusions, insight, comorbid chronic physical illness, family history of suicide and co-existing alcohol and drug misuse (Hor & Taylor 2010).

The relationship between psychopathological features and suicide is complex, and it is likely an influence of mediator and modulator factors. Although a better insight on the illness is usually considered a desirable feature to achieve adherence to treatment, some authors have associated a better awareness of illness with depressive symptoms (Pyne et al. 2001, Lincoln et al. 2007) and hopelessness (Schwartz 2000, Schwartz 2001). However, the causal direction of the relationship

is unclear and the data are inconclusive (Lincoln et al. 2007), and the underlying processes of insight and depression need further clarification. Besides, although insight has been linked to suicidal behaviour, few studies have been conducted up to date (Hor & Taylor 2010).

It is likely that the quality of insight, further than just its 'quantity', plays a crucial role in the possible relationship with other psychopathological features and suicide. Thus, the negative cognitive appraisals about the illness have been associated with psychopathological features such as depression and hopelessness in schizophrenia (Birchwood et al. 2000, Karatzias et al. 2007, Rooke & Birchwood 1998). Some authors have suggested the existence of a continuum between these negative cognitive appraisals, being part of 'psychological vulnerabilities' (Birchwood & Iqbal 1998), hopelessness, depression (Birchwood et al. 1993), and eventually suicidal behaviour (Birchwood & Iqbal 1998, Birchwood et al. 2000, Schwartz 2001). These negative beliefs have shown to have prognostic value (Lobban et al. 2004). Defeatist belief endorsements have been

found to be mediators in the relationship between cognitive impairment and both negative symptoms and functioning (Grant & Beck 2009).

The potential association between personal beliefs about illness and suicide has not been sufficiently studied in patients with schizophrenia. This issue is particularly interesting, since these beliefs about the illness and coping styles may be potentially modifiable targets in psychotherapy (Birchwood et al. 1993). There seems to be enough support to explore relationships among negative cognitions about illness, insight, hopelessness, depression and suicidal behaviour in schizophrenia. Our study aimed to improve our understanding about the relationships between patients' cognitions about their illness and suicidal risk. We hypothesized that: a) Patients with past suicide attempts would show higher Personal Beliefs about Illness Questionnaire (PBIQ) scores than patients without these antecedents, and b) PBIQ scores would be positively associated with greater depressive symptoms, hopelessness and insight in our sample of patients with schizophrenia.

## SUBJECTS AND METHODS

### Subjects

Our sample was comprised of 60 patients diagnosed with schizophrenia according to ICD-10 criteria belonging to a prospective study about suicidal behaviour carried out in the Hospital Universitario de Canarias (Tenerife, Spain) (see Acosta et al. 2006, Acosta et al. 2009, Aguilar et al. 2003 for more details). Our sample was consecutively obtained one year after they entered the study when admitted in the acute psychiatric unit. Informed consent was obtained from the patients for inclusion in the study, after being approved by the Ethics Committee of the Hospital. One of the researchers (FA) and the psychiatrist in charge of the patient determined consensus diagnoses both at admission and follow-up.

### Methods

Clinical assessments were performed one year after their admission in our out-patient clinic. All of them were made by a single trained rater (FA). Depression was evaluated by the Calgary Depression Scale (CDS). This scale was specifically developed for the assessment of the level of depression in schizophrenia, and it has been widely used. The recommended cutoff scores are 0–5 (no depression) and 6–27 (depression) (Addington et al. 1993). Hopelessness was evaluated by the Beck Hopelessness Scale (BHS), a self-administered instrument which has been widely used in studies of schizophrenic patients, with recommended cutoff points of 0–3 (none or minimal), 4–8 (mild), 9–14 (moderate) and 15–20 (severe) (Beck et al. 1974). Insight was evaluated by the first three items of the Scale to Assess Unawareness of Mental Disorder (SUMD), which

assess general disorder awareness (Amador et al. 1993). There are no cut-off points for this scale: the higher the score, the lesser the insight. Beliefs about illness were evaluated by the Personal Beliefs about Illness Questionnaire (PBIQ) (Birchwood et al. 1993). The PBIQ measures patients' beliefs about their psychotic illness and its impact on their future goals and roles, social status, social marginalisation and the extent to which their illness is perceived to trap the individual, preventing him from asserting his/her aspired identity and role. This measure has been widely used to study patients' adaptation to psychosis and has extensive psychometric validation (Birchwood et al. 2006). It is self-administered and has five subscales: 'control over illness', 'self as illness', 'expectations', 'stigma' and 'social containment'. 'Control over illness' assesses the extent to which subjects feel they have control over their illness and includes four questions. 'Self as illness' assesses the extent to which subjects believe that the origin of their illness lies in their personality or psyche and includes four questions. 'Expectations' assesses whether they feel the illness affects their capacity for independence and includes three questions. 'Stigma' assesses whether subjects believe their illness is a social judgement upon them and includes three questions. 'Social containment' assesses subjects' belief in social segregation and control of the mentally ill and includes two questions. All 16 items on the PBIQ have a 4-point response scale: strongly disagree, disagree, agree, and strongly agree (Birchwood et al. 1993). Low scores on these subscales indicate favourable attitudes towards the self and psychosis.

The patients were classified into two groups: 'suicidal', when there were one or more previous suicide attempts (i.e., admission one year before due to suicide attempt, regardless of having previous suicide attempts or not) and 'non suicidal' when there were no previous suicide attempts (i.e., admission one year before due to other reasons, and no previous suicide attempts).

Suicide attempts were defined as any type of self-inflicted injury with a non-fatal outcome, with which the patient expressed suicide intent, or when the psychiatrist considered that suicide was the goal, although the patient did not clearly express it. Those who had self-inflicted injuries but whose purpose was not death were not included as suicide attempt.

### Statistical Analysis

Quantitative variables were described using central tendency and dispersion measures: arithmetic mean and standard deviation, median and range. Normality distribution was established with the Kolmogorov-Smirnov test. Qualitative variables were represented by the relative frequencies.

Statistical significance was set at  $P < 0.05$ . All data analyses were carried out using SPSS Version 12.0. We used non-parametric statistics after checking that several

continuous variables did not follow a normal distribution. The following statistical analyses were undertaken:

- Descriptive analysis of the sample.
- Mann-Whitney U test for PBIQ total score with past suicidal behaviour as dependent variable.
- Spearman rank order correlations between total PBIQ scores and psychopathological variables (CDS, BHS and SUMD).
- Spearman rank order correlations among psychopathological variables (CDS, BHS and SUMD) and PBIQ subscales score.
- Multiple regressions for all PBIQ subscales with CDS as dependent variable.
- Multiple regressions for all PBIQ subscales with BHS as dependent variable.

## RESULTS

Socio-demographic and clinical characteristics of the sample are shown in table 1. PBIQ mean total score was 36.5±6 (22-57). Mean scores for the subscales were as follows: Control over illness (9.2±2.7), Self as illness (8.7±2.8), Expectations (7.0±2.0), Stigma (6.4±2.0) and Social containment (5.2±1.4).

Mann-Whitney U tests did not raise significant differences in PBIQ total scores or subscales scores when comparing patients with and without previous suicidal attempts.

While PBIQ total score showed significant correlations with BHS ( $\rho=0.60$ ,  $p<0.001$ ) and CDS ( $\rho=0.38$ ,  $p<0.01$ ), it did not significantly correlate with SUMD scores.

Control over illness subscale scores significantly correlated with BHS ( $\rho=0.56$ ,  $p<0.001$ ) and CDS ( $\rho=0.34$ ,  $p<0.01$ ). Expectations subscale scores significantly correlated with BHS ( $\rho=0.47$ ,  $p<0.001$ ) and CDS ( $\rho=0.38$ ,  $p<0.01$ ). Stigma subscale scores significantly correlated with BHS ( $\rho=0.56$ ,  $p<0.001$ )

and CDS ( $\rho=0.37$ ,  $p<0.01$ ). Self as illness subscale only presented a significant correlation with BHS ( $\rho=0.30$ ,  $p=0.02$ ).

We then used a multiple regression model with PBIQ subscales as independent variables and separately CDS and BHS total scores as dependent variables. Conditional forward stepwise was used to select variables in both cases. Expectations (Beta=0.43,  $p<0.001$ ) and Stigma (Beta=0.28,  $p<0.05$ ) entered the model for CDS ( $r^2=0.39$ , Standard Error =1, 91, F (2, 57) =17.9,  $p<0.001$ ). The same variables entered the model when including BHS as dependent variable: Expectations (Beta=0.40,  $p<0.001$ ), Stigma (Beta=0.42,  $p<0.001$ ), being the equation ( $r^2=0.50$ , Standard Error=3,40, F (2, 57)=28.5,  $p<0.001$ ).

## DISCUSSION

Against our expectations, negative cognitions about schizophrenia diagnosis were not different in patients with and without a history of previous suicidal attempts. On the other hand, since these negative appraisals about their illness were associated with depressive symptoms and hopelessness, our second hypothesis was partially confirmed.

Several possibilities can be considered. There may well be an indirect model between these cognitions and suicidal risk, involving several mediating variables apart from depression and hopelessness. This could justify the absence of an association between negative appraisals and history of suicidal attempts. In this line, it might be that only a certain subtype of patients, those that preferably show depressive reasons for their suicidal behaviour, attempt suicide in relation with these cognitions. This would be concordant with our previous hypotheses and findings about a clinical heterogeneity in this population because of the existence of subtypes of suicidal schizophrenia (Acosta et al. 2006, Aguilar et al. 2003). It could also be the case that these cognitions

**Table 1.** Characteristics of the sample (N=60)

	%		
Sex: Men	75		
Married (vs. other <sup>a</sup> )	11.7		
Education: Primary or below (vs. secondary or beyond)	63.3		
Work: Active	15		
Previous suicide attempts	58.3		
Drug abuse	50		
	Mean	S.D. <sup>b</sup>	Range
Age (years)	31.1	8.1	19-55
Length of illness (years)	9.1	6.9	1-30
Beck Hopelessness Scale	4.9	4.7	0-18
Calgary Depression Scale	2.3	2.4	0-10
SUMD <sup>c</sup> , first three items subscale	5.4	2.7	3-14

<sup>a</sup> Other: single, separated, widowed or divorced; <sup>b</sup> S.D.: Standard Deviation; <sup>c</sup> SUMD: Scale to Assess Unawareness of Mental Disorder

do not have trait characteristics. Although it is unlikely that these cognitions have predominance of state nature, we cannot dismiss this possibility, since we did not assess patients with the PBIQ at baseline. Another possibility is that actually negative beliefs are not relevant for suicidal behaviour in schizophrenia, but this cannot be concluded by our study.

According to our results, there seems to be an association between patients' negative beliefs about their illness (poor expectations and control over their illness, and feeling stigmatized) and the presence of more depressive symptoms and greater hopelessness. Poor expectations and stigma best predicted both depression and hopelessness scores. This is in concordance with previous reports (Birchwood et al. 1993, 2000, Karatzias et al. 2007, Lysaker et al. 2007, Ritscher & Phelan 2004, Rooke & Birchwood 1998, Yanos et al. 2008). Our findings are similar to those of White et al. (2007), who found positive correlations between each of the PBIQ subscales and hopelessness, and between all except one subscales of the PBIQ and depression. In that study the CDS scores and the "humiliating need to be marginalized" subscale of the PBIQ were two out of the three variables that accounted for 60% of the variance in hopelessness scores. Although the most likely cause – effect relationship is the continuum negative cognitive appraisals – hopelessness – depression – suicidal behaviour (Birchwood & Iqbal 1998, Birchwood et al. 2000, Schwartz 2001), it is also plausible that hopeless and depressed patients may identify themselves with such negative statements about mental illness, particularly in the presence of a more deteriorating illness. Fear of stigma and negative labelling has been found to be an important factor for the delay of treatment in first episode psychosis (Ienciu et al. 2010).

Insight did not correlate with these negative appraisals of the illness. The most probable explanation for this finding is that a certain group of patients with insight develop adequate appraisals and coping styles. The role of insight in this cognitive framework probably depends on the presence of several psychological mediators. Patients might change their personal beliefs about their illness somehow independently of a general awareness or awareness of specific symptoms. Some non-depressed and non-hopeless patients may have a good general awareness of their illness while not identifying themselves with those negative beliefs. In this respect, perception of controllability of the illness was the most important variable discriminating depressed from non-depressed psychotic patients (Birchwood et al. 1993). According to Lysaker et al. (2007), high insight would be related to hopelessness and low self-esteem when moderate internalized stigma is present and would be associated with less social impairment if minimal stigma is experienced by the patient. The relationship between insight and suicide in

schizophrenia is complex and needs further clarification. A positive association has been found; however, some authors have found it to be mediated by depression and hopelessness (Bourgeois et al. 2004), whereas others have found an independent association, not mediated by depressive symptoms (Barret et al. 2010).

Our study has several limitations. First, the sample size is relatively small. Second, although this evaluation was part of a prospective study, we did not include PBIQ in our baseline assessments and therefore we do not have prospective data on these cognitions, resulting in a cross-sectional design. This design does not allow establishing cause – effect relationships in the interpretation of the results; hence we can only hypothesize them. Third, the temporal distancing between the evaluation and previous suicide attempts involves that only those psychological and psychopathological features with trait characteristics can be detected. Hopelessness (Harkavy-Friedman et al. 2004, Young et al. 1996) and depression (Addington & Addington 1992) have shown to have trait characteristics. Although both hopelessness and depression have trait and state characteristics, the trait component seems to be the predominant in hopelessness, and the state component in depression (Acosta et al. 2009, Beck et al. 1985, 1990; Young et al. 1996). Despite that insight may probably have a more changing nature in the course of the illness, in several studies insight at baseline predicted later suicide attempts (Bourgeois et al. 2004, Crumlish et al. 2005, Cunningham-Owens et al. 2001). Nevertheless, we previously studied our sample of admitted patients in an acute unit after a suicidal attempt or because any other reasons, and found an association between suicidal attempts and the presence of more depressive symptoms, greater hopelessness and less positive symptoms (Aguilar et al. 2003).

Our findings may have potential clinical implications. Trials of cognitive behaviour therapy specifically directed to reduce suicide behaviours are still scarce and inconclusive. Since the negative appraisals about illness are linked to depression and hopelessness which in turn are associated with suicide behaviours, these cognitive negative appraisals may be potential targets for psychotherapeutic interventions. The key in these interventions would be the identification and challenging of the negative appraisals held regarding self and psychosis (Birchwood & Iqbal 1998). Cognitive Behavioural Therapy has shown to reduce suicide risk (Tarrier et al. 2008). In patients with psychosis, it has shown to reduce negative appraisals of loss arising from psychosis (Gumley et al. 2006), and it is starting to be implemented to prevent suicidal risk in patients with schizophrenia (Bateman et al. 2007). It is necessary to further explore negative beliefs about their illness in patients with schizophrenia, particularly in regard to suicidal risk.

## CONCLUSIONS

This study provides support to an association between the presence of negative cognitive appraisals of the illness and greater depressive symptoms and hopelessness in outpatients with schizophrenia. Since these psychopathological features are linked to suicidal risk, the psychotherapeutic approach counteracting negative beliefs about the illness may reduce the risk of suicide.

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