INTRODUCTION

Schizophrenia is a complex illness that does not follow scientific explanation for all the aspects of the illness from overt behavior to the intracellular changes (Carroll and Owen, 2009). Till date, the researchers have not been able to identify even a single factor which can commonly explain/define all patients with schizophrenia. In spite of the challenges, still, many researchers have put most of the pieces in proper place in this field but the puzzle is still unsolved (Walker et al, 2004).

It is important to know the health beliefs of the individuals suffering from psychiatric disorders. These beliefs are the main factors in health models and illness related behaviour, and so they might affect clinical outcome, because these are directly related to patient's own viewpoint about his illness and treatment option (Williams and Healy, 2001). In the treatment process, the patient has now been considered an active partner because of the move towards patient centered care. For making the patient more active in the care process it is important to illustrate patient's own perspective of the treatment plan. This demands the exploration of the patients views about their illness and then addressing those views to strengthen therapeutic relationship and treatment effectiveness (McCabe and Priebe, 2004a). The pioneering explanatory approach developed by Klienman involved asking explanatory questions in a qualitative approach (Bhui and Bhugra, 2002). Beliefs about illness hold by the patients and their families effect their decisions about the consultation for the treatment and also perseverance of symptoms and the level of disability caused by illness. Illness perception models have theoretical structures to systemized the information about patients' beliefs and expectations and to explore their perceptions about the causes and consequences. These factors can strongly predict the outcomes related to health (Sumathipala et al, 2008).

For the last few decades, there is rising interest in how individuals think about their illnesses and how these explanations are different in culture (Mccabe and Priebe, 2004b). Explanatory models greatly differ from culture to culture and even within the culture, and it is proved by evidence. However very less research has been done on how these model differ across divergent exploratory framework (Lynch and Medin, 2006).

Evidence shows that patients with schizophrenia learn a lot through psychological interventions which help them to improve their quality of life. For the last 4 decades, psychoeducation is getting importance in the treatment of schizophrenia and other psychotic disorders. Number of psychoeducational approaches have developed in health psychology, specifically for patients with schizophrenia who are on antipsychotic medications and have problems of obesity and metabolic syndrome. Psychoeducational intervention designed for these problems help patients to adapt healthier lifestyle and dietary plans (Bisbee and Vickar, 2012). Furthermore, it is also a fact that these interventions are very helpful in reducing family burden, which is again associate in reduction of indirect costs due to loss of productivity of family members (Pingani et al, 2013). According to Cochrane analysis, psychoeducational interventions showed decrease rate of relapse, better compliance level, and improvement in psychopathology (Pekkala and Merinder, 2002; Magliano et al, 2006). Compliance is not that uncommon and the treating psychiatrist has to be mindful of it. Compliance counseling is important part of psychoeducation. Studies focused on educational formats have influenced improvements in general understanding of schizophrenia and its treatment (Turkington et al, 2006).

There is dearth of research on explanatory model of illness of psychosis in our settings and the inadequate and inaccurate knowledge about schizophrenia in general population is well documented (John, 1992.). It has been revealed that gaps between patients and mental health professionals understanding may affect help-seeking behaviour, adherence to medication and provision of effective psychosocial therapy. Dissonance between cultural and scientific explanations further deteriorates the much needed therapeutic relationship and long-term care of schizophrenia. To improve patient outcome, health professionals need to look at wider picture of illness rather than scientific model of disease and develop good communication skills to gain patients' trust. Therefore, we investigated the explanatory models of illness in patients suffering from Schizophrenia in our setting to find out the role of educational intervention, which is expected to be beneficial not only for the patients, caregivers and mental health professionals but also for overall care of psychiatric patients.

METHODS

Trial Design

This was a randomized controlled trial, conducted to explore the effectiveness of Structured Educational Intervention. The study consisted of two groups, i.e. the control group and the experimental group. Structured Educational Intervention was applied on the experimental group only, and, the control group received treatment as usual (TAU) only. The trial was approved by the Research Ethics Committee of Lady Reading Hospital Peshawar, Pakistan and was conducted in compliance with the Declaration of Helsinki.

Instruments

Semi structured-interview was conducted at first on all the patients in order to get basic sociodemographic information and to satisfy the diagnosis according to ICD-10 criteria.

The first scale we used was Short Explanatory Model Interview version 3.0 (Mirza et al. 2006) which elicited the patients' concepts, causes, treatment choice and severity of the illness, responses of the patients were recorded in a written verbatim form. SEMI has been designed in a simple way that it can be easily used in day to day clinical practice and research. The language used in the scale is non-technical and can be easily translated. It does not require any special training for the interviewer from any background. Qualitative analysis methods are suitable for the analysis of the data taken from this tool.

Positive and Negative syndrome scale (Kay et al, 1987) was applied to measure the severity of the symptoms. It is a 30 item rating scale, designed to assess individuals with schizophrenia and other psychotic disorders and is widely used in research settings. Items are divided into 7 positive items, 7 negative and the remaining 16 constitute general psychopathology scale. Each item is scored from 1 to 7 and total scores are obtained by the sum of ratings of each component of the scale. Therefore, possible ranges of score are 7-49 for the positive and negative scales, and 16 -112 for the general psychopathology.

Global assessment of Functioning was administered to rate the functioning of the patients. GAF is representation of clinical interpretation through numerical approach to the person's overall

functioning level. Impaired functioning in psychological, social, occupational and academics are taken under consideration. The scale ranges from 0 (inadequate information) to 100 superior functioning or having no impairment at all.

Brief Psychiatric Rating Scale (Leucht et al, 2005) was also applied on all the patients in order to rate the psychotic behavior of the patients. It is one of the most widely used instrument for assessing psychopathology in patient suffering from schizophrenia. BPRS includes 5 sub scales, i.e., Thought disorder, Withdrawal, Anxiety /Depression, Hostility and Activity, which is symbolically denoted as (TD), (W), (AD), (H), and (A) respectively.

Compliance Rating Scale (Herz et al, 2000) was administered to check the patient's adherence to treatment. It has three measures. None, partial and complete compliance. However, for the sake of analysis, none and partial were combinedly considered as non-compliance.

All these scales were administered on all the patients on baseline and on 3 months follow up.

Setting

This randomized controlled trial was conducted at the inpatient care of the department of Psychiatry, Lady Reading Hospital, Peshawar from February to August 2015. **This department has the capacity of 36 beds for in-patients, both male and female. It is one of the very few purpose built departments of Psychiatry in Pakistan, catering for patients of almost all sub specialties of Psychiatry.**

Procedure

All the patients who visited psychiatric OPD and diagnosed by the consultant psychiatrist as schizophrenia were referred to the researcher after prescribing medications. Outline of the research was given to all the patients and after getting their willingness for the participation in the research, written Informed consent was taken from the patients and attendants. Patients who fulfilled the inclusion criteria were randomly assigned to each treatment group using computer generated randomization method. After complete assessment, the patients who were included in

the experimental group were administered Structured Educational Intervention 19, which was repeated once in a month.

Participants

Patients who fulfilled the ICD-10 diagnostic criteria for schizophrenia were included in the study with their relatives. Patients with any other psychiatric co morbidity, for example Learning Disability or with any severe physical problem were excluded. Patients who were not able to respond or communicate were also excluded.

Figure 1 here

A total of 121 participants were referred (figure 1) and 103 were randomised; 53 were randomized to the intervention arm and 50 were randomized to the control (Treatment As Usual, TAU) arm .

Sample size

Based on the prevalence reported in a previous study and using WHO sample size calculation software, a total of 103 patients were included in the study.

Randomization

After completion of the assessment, participants were randomized to two groups i.e., TAU and experimental by using computer generated randomization method. The allocation list was kept in a remote secure location, and an independent person randomly allocated the included participants after they signed informed consent.

Drop outs

Eighteen cases that were referred for recruitment did not gave consent and were excluded from randomization. We obtained contact numbers and consent from participants at baseline to contact them in future, if needed. Seven patients from experimental group did not complete their follow up visits while the number for the TAU group drop out was 14.

Interventions

The original intervention was developed by Smith and Birchwood in 1987 (Smith and Birchwood, 1987). For our trial, it was translated in local language by a group of four mental health professionals including two consultant psychiatrists and two psychologists using back translation method, which was later verified by an expert in English and local language. It was provided to experimental group once in a month for three months by the researcher.

The intervention had four parts, first part was about giving simple explanations of possible causal factors, e.g. the role of genetic and biochemical abnormalities, second section focused on the nature of schizophrenia, describing common symptoms and behaviors in terms of disturbances in thinking, feelings and behavior, third section described the function of the relevant psychiatric services and the role of neuroleptic medication in acute and maintenance phases, fourth section was concerned with helping relatives to identify support services in terms of hospital and community resources available. All the patients of both arms were reassessed after 3 months' follow-up. The scale mentioned above were applied once again after 3 months to see if there was any difference between the two groups related to the improvement and illness perception. Reassessment was carried out by an independent scorer to reduce biasness.

TAU group

The Treatment As Usual (TAU) group received the treatment provided by the consultant psychiatrist in routine clinical care in their practice. This normally consists of prescribing antipsychotic medication as considered suitable by the treating psychiatrist and nursing care.

Statistical Analyses

We followed the CONSORT guidelines for randomized controlled trials (Moher et al, 2001). We used SPSS version 20 for the data analysis. Mean and SD were calculated using t test for the quantitative data. Content analysis was used for the analysis of the qualitative data. Responses to the SEMI questions concerning concept, severity, course, aetiology and treatment from the sample of both groups were content analyzed. Codes were given to frequently occurred items. Categories were then established according to the responses.

RESULTS

Participants Description and Other Characteristics at Baseline

The mean age of the sample was 30.5+9.4 years with majority of males (n=80, 77%) in the sample. The mean duration of the illness was 78.4+6.0 months. Fifteen (14.6%) were unemployed, 54 (52.4%) were employed, 22 (21.4%) were house ladies and 12 (11.6%) were students. There were 25(24.3%) patients who had no formal education, seventy-seven (74.4%) were living in joint family system and 62 (60.2%) belonged to rural area. From total sample, 28(27.2%) had received non pharmacological intervention in the past. Differences in demographic and clinical variables at baseline are given in Table 1.

Table 1 here

Symptoms measure

There was significant difference on the scores between the two groups, at follow up, on the psychometric tools, i.e., Brief Psychiatric Rating Scale, BPRS (0.002), Positive and negative syndrome scale, PANSS Total (0.000), Global Assessment of Functioning, GAF (0.000).

Table 2 here

Compliance

As measured by Compliance rating scale, there was no significant difference in compliance to the antipsychotic medication on baseline of TAU and experimental group, as there were 23 (46%) patients in TAU while 13 (24.5%) in experimental group who had complete compliance rate at baseline ($p = 0.022$). On follow up, there were 17 (47.2%) cases in the TAU group and 44(95.6%) cases in the experimental group with complete compliance ($p = 0.000$).

Short Explanatory Model Interview (SEMI)

The major concept of patients on Short Explanatory Model Interview (SEMI) was mental illness (without naming). This was consistent on baseline [TAU (20, 40.0%), Experimental (14, 26.4%) (p=0.143)], as well as on follow up [TAU (15, 41.7%), Experimental (14, 30.5%) (p=.291)]. Patients mostly attributed at both baseline and follow up, stress [Experimental (18, 33.9%), TAU (6, 12.0%), p=.008 and Experimental (32, 69.6%), TAU (4, 11.1%), p=.000] and spiritual [Experimental (10, 18.8%), TAU (7, 14.0%), p=.506 and Experimental (3, 6.5%), TAU (4, 11.1%), p=.460] as causes to their illness. However, the description of biological and supernatural cause of their illness was increased more at follow up in experimental and TAU group, respectively (p=0.000 & p=0.000). Regarding treatment choice patient reported their preferences as medication only at baseline [Experimental (13, 24.5%), TAU (11, 22.0%)] and medication with spiritual healing [Experimental (28, 52.9%), TAU (29, 58.0%)] which at follow up changed to a majority considering medication only as treatment choice [Experimental (26, 56.5%), TAU (17, 47.1%)]. Considering the illness as very serious, there was no significant difference between both the groups at baseline (p=.876) while it was significant at follow up (p=.003).

Table 3 here

DISCUSSION

This RCT attempted to assess the explanatory model of illness of patients with schizophrenia and the role of structured educational intervention in modifying their EMs. It discussed patients' beliefs and presented alternative biomedical explanations for schizophrenia. We combined the qualitative and quantitative methodologies.

Few studies have so far attempted to modify the explanatory models by applying educational interventions (Bhikha et al, 2012). These interventions directed to acquire significant information about schizophrenia, equally across all relevant knowledge areas including improved optimism regarding the family member's role in sustaining the patient's well-being, reduced level of family member's anxiety, and improvements in social independence (competence), and that knowledge was maintained at six-month follow-up (Smith and Birchwood, 1987). Significant difference was found in the level of knowledge and information about schizophrenia at follow up assessment as compared to the baseline information of our sample. Patients acquired satisfactory knowledge about the disorder including concepts and causes for developing schizophrenia after receiving educational intervention for three months. People became aware of the name of their illness i.e., Schizophrenia [25(54.3%)]. Spiritual issue as a cause decreased [3(6.5%)]. Biological causes' awareness had significantly improvement [15 (32.6%)]. The finding as stress being the cause is in line with Stress vulnerability model. Treatment choices did not change even after the intervention because people were already taking medication. However, it should be noted that the participants using treatment only in experimental group got doubled [26(56.5%)] TAU group when treated thought it is not "very serious", highlighting the possibility of non-Compliance, in comparison to Experimental group (p=.003)

In this study there were more male patients in each arm comprising 80% of each group. Previous evidence suggested that schizophrenia develops equally in the genders (Dohrenwend and Dohrenwend, 1974; Lewine and Meltzer, 1984), current research data suggests that incidence rates are higher among men than women (Iacono and Beiser, 1992). It appears that predominance of male subjects in our study is due to differential help seeking patterns, in which female patients are likely to be brought to the hospital only when they are most severely ill. The cultural norms

in our society and stigma attached to the severe mental illness such as Schizophrenia perhaps results in female patients less likely to presenting in the tertiary care centers.

In a systematic review on antipsychotics (Lepping et al, 2011) it was found that the mean score on PANSS of patients with schizophrenia on baseline was 81.05(12.73) and it was 64.77(11.29) on follow up which is again close to our findings. There was difference between the mean score of PANSS at baseline and on follow up of our experimental group with the p value of 0.00, which shows that the intervention proved to be effective in improving the symptomatology of the patients. We found significant difference in the level of GAF of experimental group at the end of the intervention. In a study conducted for exploring the specific and non-specific effects of educational intervention for families living with schizophrenia (Smith and Birchwood, 1987), that the GAF of the sample got improved after three months' follow-up. The study also reported that significant improvements in social functioning are observed at six months.

Psycho education about the compliance should be routinely offered to all patients with schizophrenia and their families (Pitschel-Walz et al, 2006). It improves adherence and motivates patients to accept a maintenance therapy as recommended by the guidelines (Bauml et al, 2016). Our study found that the part of the intervention related to compliance to the antipsychotic drugs was effective as compliance rate of the experimental group was improved on follow-up assessment as compared to the TAU group (p=0.000). This is comparable with another study that demonstrated the importance of education on the compliance, as well as on the positive attitude towards the drug treatment, which is one of the most important predictors of the successful treatment of the schizophrenia (Degmecic et al, 2007).

Help can be sought from different sources e.g., mental health practitioner, spiritual healer, religious healer, etc, no matter what kind of health model patient hold a patient holds(Das 2006). We did not find significant difference in the treatment choice on pre and post assessment, suggesting that while people may acknowledge causal medical Explanatory Models, they reserve the right to seek all available therapies, medical and non-medical, to get relief from their chronic illnesses.

There is a rich diversity of beliefs in the knowledge of explanatory models but within this mixture are a number of shared concepts in different cultures (Patel, 1995). **There are obvious differences in patterns of health and illness across cultures, over time, and within particular society types(Williams 2001). Explanatory models are influenced by culture. People share common beliefs about health and illnesses within the same culture(Fox 2005). The models of illness impact upon help-seeking behaviours and care pathways, southasian patient's beliefs were similar to the people from the same culture (Bhikha 2015).**As we too observed that patients from our sample hold the beliefs about the disorder, which are common in Asian culture.We could elicit multiple concepts and causes by exploring the health models of the patients.

It has long been considered that psychosocial stress plays a role in the expression of symptoms in schizophrenia. Stress was frequently reported cause by our patients, they attributed tension/stress of psychosocial stressors to the development of their illness. A study reported that 46% of 50 patients with schizophrenia had been exposed to stressful life events in the preceding 3 months as compared to only 14% of 325 controls (Corcoran et al, 2002).

Spiritual and traditional healers have historically provided 'healing' through various spiritual and medical modalities (Leayey et al, 2016) they are still an important help-seeking resource for the mental health problems. This is very common in Asian culture (Mojaverian et al, 2012). We too observed in our study that more than 50% of our patients were visiting spiritual healers for the treatment of the illness.

The educational intervention was effective in improving the concepts of the patients as at the end 54.3 % ($p=0.000$) from experimental group named the illness as schizophrenia. In contrast, a study on the explanatory model of illness of ethnic groups (Mccabe and Priebe, 2004) reported that 20% of the total sample called their illness as schizophrenia.

Various explanatory models are considered as norms in Asian cultures so the education about mental illness should present biomedical model without dismissing local EMs. Biopsychosocial explanations should not claim superiority or exclusivity over local models. People should be encouraged to employ diverse approaches to manage their mental health(Elizbeth 2002).

LIMITATIONS

Our sample consisted of patients who had different educational status, if all the patients were of same educational background we could have control the skewness of the results to some extent. The persistence of changes in beliefs and its effect on compliance have to be reconfirmed after some time. We used only verbal communication for the impartment of the knowledge. Although it proved to be effective but keeping in view the socio demographics of the sample, audio/visual aids could help to apply the intervention in more appropriate way.

CONCLUSIONS

In our settings, beliefs, concepts and ideas of the patients with schizophrenia about their illness contradict the biopsychosocial model. Our sample believed that there are other reasons like spiritual and supernatural which have caused the illness. We also concluded that such beliefs and concepts need to be explored and discussed before exposing the patients to psychological interventions. Patients prefer to visit spiritual healers for help along with taking medication. Furthermore, the results of the study suggest that educational interventions can alter the non-biomedical explanatory models of patients with schizophrenia, which is directly related to the compliance and recovery.

REFERENCES

1. Bauml, J., Pitschel-Walz, G., Volz, A., Luscher, S., Rentrop, M., Kissling, W., & Jahn, T. (2016). Psychoeducation Improves Compliance and Outcome in Schizophrenia Without an Increase of Adverse Side Effects: A 7-Year Follow-up of the Munich PIP-Study. Schizophrenia Bulletin, 42(1), 62-70. doi: 10.1093/schbul/sbw008.

2. Bhikha, GA., Farooq, S., Chaudry, N., Hussain, N. (2012). A systematic review of explanatory models of illness for psychosis in developing countries. International Journal of Psychiatry, 24(5), 450-62.

3. Bhikha, GA.,Farooq, S.,Chaudy, N.,Naeem,F.,Hussain,N. (2015). Explanatory Model of psychosis amongst British South Asians. Asian Journal of Psychaitry,16, 48-54.

4. Bhui, K., & Bhugra, D. (2002). Explanatory models for mental distress: implications for clinical practice and research. The British Journal of Psychiatry, 181(1), 6–7. doi:10.1192/bjp.181.1.6

5. Bisbee, C. C., & Vickar, G. M. (2012). A Review of Psychoeducation for Patients with Schizophrenia. Psychiatric Annals, 42(6), 205–210. doi:10.3928/00485713-20120606-03 doi:10.1192/bjp.181.1.6

6. Carroll, S L., & Owen, J M. (2009). Genetic overlap between autism, Schizophrenia and bipolar disorder. Genome Medicine, 1(10),102.

7. Corcoran, C., Parodi, M L., Yale, S., Leitman, D., Malaspina, D. (2002). Could Stress Cause Psychosis in Individuals Vulnerable to Schizophrenia. CNS Spectrums, 7(1), 33–42.

8. Das, S., Saravanan, B., Karunakaran, KP., Manoranjitham, S., Ezhilarasu, P., Jacob, KS. (2006). The effect of a structured educational intervention on explanatory models of relatives of patients with schizophrenia: A Randomized controlled trial. British Journal of Psychiatry, 188, 286-87.

9. Degmecic, D., Pozgain, I., Filakovic, P. (2007). Psychoeducation and compliance in the treatment of patients with schizophrenia. Collegium antropologicum, 31(4), 1111-5.

10. Dohrenwend, B., & Dohrenwend, B. (1974). Sex differences and psychiatric disorders. Annual Review of Psychology, 25, 417–452.

11. Elezabeth, J.,Kenny, K., Evelyn, L., Henry, C. (2002). Cultural factors influencing the mental health of Asian Americans. Western Journal of Medicine, 176(4),227-231

12. Fox, N., Ward, K., O'Rourke, A. (2005). Pro-anorexia, weight-loss drugs and the internet: an 'anti-recovery' explanatory model of anorexia. Sociology of Health and Illness, 27(7), 944-71

13. Herz, M, I., Lamberti, S., Mintz, J., & Scott, R., et al. (2000). A program for relapse prevention in schizophrenia. A controlled study. Archives of General Psychiatry,57, 22-83.

14. Iacono, W. G., Beiser, M. (1992). Where are the women in first-episode studies of Schizophrenia? Schizophrenia Bulletin, 18, 471–480.

15. John, M. (1992). Mental disorder and violent behavior: perception and evidence. American Psychologists, 47(4), 511-21.

16. Kay, RS., Fiszhein, A., Opler, A L. (1987). The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia. Schizophrenia Bulletin, 13(2), 261-76.

17. Leayey G, Loewenthal K, King M. (2016). Locating the Social Origins of Mental Illness: The Explanatory Models of Mental Illness Among Clergy from Different Ethnic and Faith Backgrounds. Journal of Religion and Health, 55, 1607-22.

18. Lepping, P., Sambhi, RS., Whittington, R., Lane, S., & Poole, R. (2011). Clinical relevance of findings in trials of antipsychotics: systematic review. The British Journal of Psychiatry, 150(5), 645-52. doi:10.1192/bjp.bp.109.075366.

19. Leucht, S., Kane, J. M., Kissling, W., Hamann, J., Etschel, E., & Engel, R. (2005). Clinical implications of Brief Psychiatric Rating Scale scores. The British Journal of Psychiatry, 187(4), 366–371. doi:10.1192/bjp.187.4.366.

20. Lewine, R, J., Meltzer, H, Y. (1984). Negative symptoms and platelet monoamine oxidase Activity in male schizophrenic patients. Psychiatry Research, 12, 99-109.

21. Lynch, E., & Medin, D. (2006). Explanatory models of illness: a study of within-culture variation. Cognitive Psychology, 53(4), 285–309. doi: 10.1016/j.cogpsych.2006.02.001.

22. Magliano, L., Fiorillo, A., Malangone, C., De Rosa, C., Maj, M., & the Family Intervention Working Group. (2006). Implementing Psychoeducational Interventions in Italy for Patients with Schizophrenia and Their Families. Psychiatric Services, 57(2), 266–269. doi: 10.1176/appi.ps.57.2.266.

23. McCabe, R., & Priebe, S. (2004). Assessing the stability of schizophrenia patients' explanatory models of illness over time. Journal of Mental Health, 13(2), 163–169. doi:10.1080/09638230410001669291.

24. Mccabe, R., Priebe, S. (2004). Explanatory models of illness in schizophrenia: comparison of Four ethnic groups. The British Journal of Psychiatry, 185 (1), doi 10.1192/bjp.185.1.25.

25. Mirza, I., Hassan, R., Chaudhary, H., & Jenkins, R. (2006). Eliciting explanatory models of common mental disorders using the Short Explanatory Model Interview (SEMI) Urdu adaptation--a pilot study. Journal of the Pakistan Medical Association, 56(10), 461–463.

26. Mojaverian, T., Hashimoto, T., Kim, S H. (2012). Cultural differences in professional help seeking: A comparison of Japan and the U.S. Frontiers in Psychology, 3:615.

27. Moher, David, Schulz, Kenneth F., Altman, Douglas, CONSORT Group, 2005. The CONSORT statement: revised recommendations for improving the quality of reports of parallel group randomized trials 2001. Explore 1 (1), 40–45 (New York, N.Y.).

28. Patel, V. Explanatory models of mental illness in sub-Saharan Africa. (1995). Social Science and Medicine, 40(9), 1291-8.

29. Pekkala, E., & Merinder, L. (2002). Psychoeducation for schizophrenia. Cochrane Review, Cochrane Data Base, 002831, 1–41.

30. Pingani, L., Fiorillo, A., Luciano, M., Catellani, S., Vinci, V., Ferrari, S., & Rigatelli, M. (2013). Who cares for it? How to provide psychosocial interventions in the community. International Journal of Social Psychiatry, 59(7), 701–705. doi:10.1177/0020764012453812.

31. Pitschel-Walz, G., Bauml, J., Bender, W., Engel, RR., Wagner, M., Kissling, W. (2006). Psychoeducation and compliance in the treatment of schizophrenia: results of the Munich Psychosis Information Project Study. Journal of clinical psychiatry, 67(3), 443-52.

32. Smith, J. V., & Birchwood, M. J. (1987). Specific and non-specific effects of educational intervention with families living with a schizophrenic relative. The British Journal of Psychiatry, 150(5), 645–652. doi:10.1192/bjp.150.5.645.

33. Sumathipala, A., Siribaddana, S., Hewege, S., Sumathipala, K., Prince, M., & Mann, A. (2008). Understanding the explanatory model of the patient on their medically unexplained symptoms and its implication on treatment development research: a Sri Lanka Study. BMC Psychiatry, 8(1), 54. doi:10.1186/1471-244X-8-54.

34. Turkington, D., Kingdon, D., & Weiden, PJ. (2006). Cognitive behavior therapy for schizophrenia. American Journal of psychiatry, 163, 365-373. doi: 10.1176/appi.ajp.163.3.365.

35. Walker, E., Kestler, L., Bollini, A., & Hochman, K. M. (2004). Schizophrenia: Etiology and Course. Annual Review of Psychology, 55(1), 401–430. doi: 10.1146/annurev.psych.55.090902.141950.

36. Williams, B., & Healy, D. (2001). Perceptions of illness causation among new referrals to a community mental health team: “explanatory model” or “exploratory map”? Social Science & Medicine, 53(4), 465–476. doi:10.1016/S0277-9536(00)00349.