

ORIGINAL PAPER

A Systematic Narrative Synthesis of Psychosocial Interventions to Enhance Insight in Schizophrenia

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Abstract

Objective: To systematically review and appraise the studies of existing psychosocial interventions focused on improving insight in schizophrenia spectrum disorders. **Methods:** Electronic data sources used in PubMed from 2004 to 2017 to explore the Randomized Controlled Trials on insight. **Results:** A total number of 2124 studies were found with MeSH terms and finally 24 studies were included in the review. Studies include Cognitive Behavioral Therapy, Cognitive Behavioral Therapy ^{Plus} /Meta-Cognitive Therapy, Structured Psycho-Education, Video Self-Observation, Social Skills Training, Compensatory Cognitive Training, Self-Stigma Reduction Program, Community Re-entry Model, Guided Group Self Determination, Motivational Interview, Naikan Therapy and Adherence Therapy. **Conclusions:** Overall, it seems that present interventions have a significant impact on insight enhancement but some limitations would be overcome in the future studies.

Keywords: Insight, Awareness, Psychosocial Intervention, Schizophrenia

Introduction

Schizophrenia represents one of the top ten reasons for continuing disability globally¹ and empirical research attests that 50% to 80% of persons with schizophrenia lack insight into their illness^{2,3}. Insight can be classified in two levels, clinical insight and cognitive insight. Clinical insight as understood from the clinician's point of

view is that the persons with schizophrenia are aware about the signs and symptoms and compliant to treatment. Cognitive insight involves higher level of cognitive process related to insight⁴.

Researchers consider insight in psychiatric illness as a multi-dimensional entity. Insight consists of the person's awareness (the ability to understand the signs, symptoms of

the illness, being labeled, consequences of illness).

Insight is explained as the unwanted pathological experiences, correct attribution to the etiology of illness, (ability to appreciate the unrealistic perceptual experiences or beliefs).

Insight is also described as the ability to come to the right cognitive representations, suitable affective responses (behaviors or actions). Likewise insight is the acceptance of treatment (realizing the benefits of treatment thereby ensuring adherence)^{5,6}.

The Diagnostic and Statistical Manual (DSM) describes poor insight as a symptom related to schizophrenia and a coping strategy, which can lead to non-compliance, increased risk of relapse, involuntary hospital admissions, decreased psychosocial functioning and a poor prognosis⁷. The further consequences could be loss of independent living, impaired quality of life, increased risk for substance use, and aggressive behavior which may also lead to suicide^{8,9}. These factors hinder the attempts of a mental health professional to rehabilitate the person with schizophrenia. However, helping a person with schizophrenia to gain better insight can be used to separate the symptoms of the illness from reality and self-identity³. This systematic review exclusively attempts to study and understand various psychosocial interventions for improving insight.

Aim

The aim of this review is to appraise the studies of psychosocial interventions focused to improve insight in schizophrenia. The research question is to assess the strengths and limitations of recent intervention studies focused on improving

insight in persons with schizophrenia spectrum disorders.

The specific objectives were to find out the various modes of psychosocial interventions available for enhancing insight in schizophrenia spectrum disorders, to systematically review these studies, and to inform future researchers in this area on the basis of strengths and limitations of the conducted studies.

Materials and Methods

Inclusion & Exclusion Criteria

The inclusion criteria were Randomised Controlled Trials (RCT's) of psychosocial interventions designed to enhance insight in schizophrenia spectrum disorders published from September 2004 to January 2017. The studies had to be focused on insight as a mediator or primary or secondary outcome, assessing clinical and cognitive insight, using a valid scale for insight, and published in peer reviewed journals.

Studies that focused on other mental disorders and pharmacological interventions, pilot studies, and those not available in English were excluded.

Search Procedure: Electronic data sources used for searches online were Pubmed & Google Scholar, for peer reviewed studies.

Search MeSH Terms: ((schizophrenia [tiab] OR psychosis [tiab] OR "severe mental disorder" [tiab]) AND (insight [tiab] OR awareness [tiab] OR knowledge [tiab]) AND (intervention*[tiab] OR therap*[tiab] OR education* [tiab]))

Study Selection: The primary author screened articles on relevance to find appropriate articles based on the criteria of the Joanna Briggs Institute Reviewers

Manual¹⁰. The MeSH terms detected 2124 studies. After using pubmed’s filters for clinical trial studies, this number reduced to 203. After screening the titles and abstracts and removing duplicates, 24 studies were included after inspecting the full texts based on the inclusion & exclusion criteria. Pertinent information was then extracted with a thorough review.

The second and third authors of this review assessed the study quality with information pertaining to socio-demographic details, design, insight scale, clinical or cognitive insight. sample size, duration of

intervention, individual or group intervention, number of sessions.

Research studies focused insight as mediator or primary or secondary outcome measure, details about the intervention, CONSORT checklist (CONSolidated Standards Of Reporting Trials).

Studied followed RCT norms including blinding, inter-rater reliability, details of therapists training, fidelity of intervention, duration of training for the therapists, period of follow up, clinical trial registration, details of participants drop out, and final outcome.

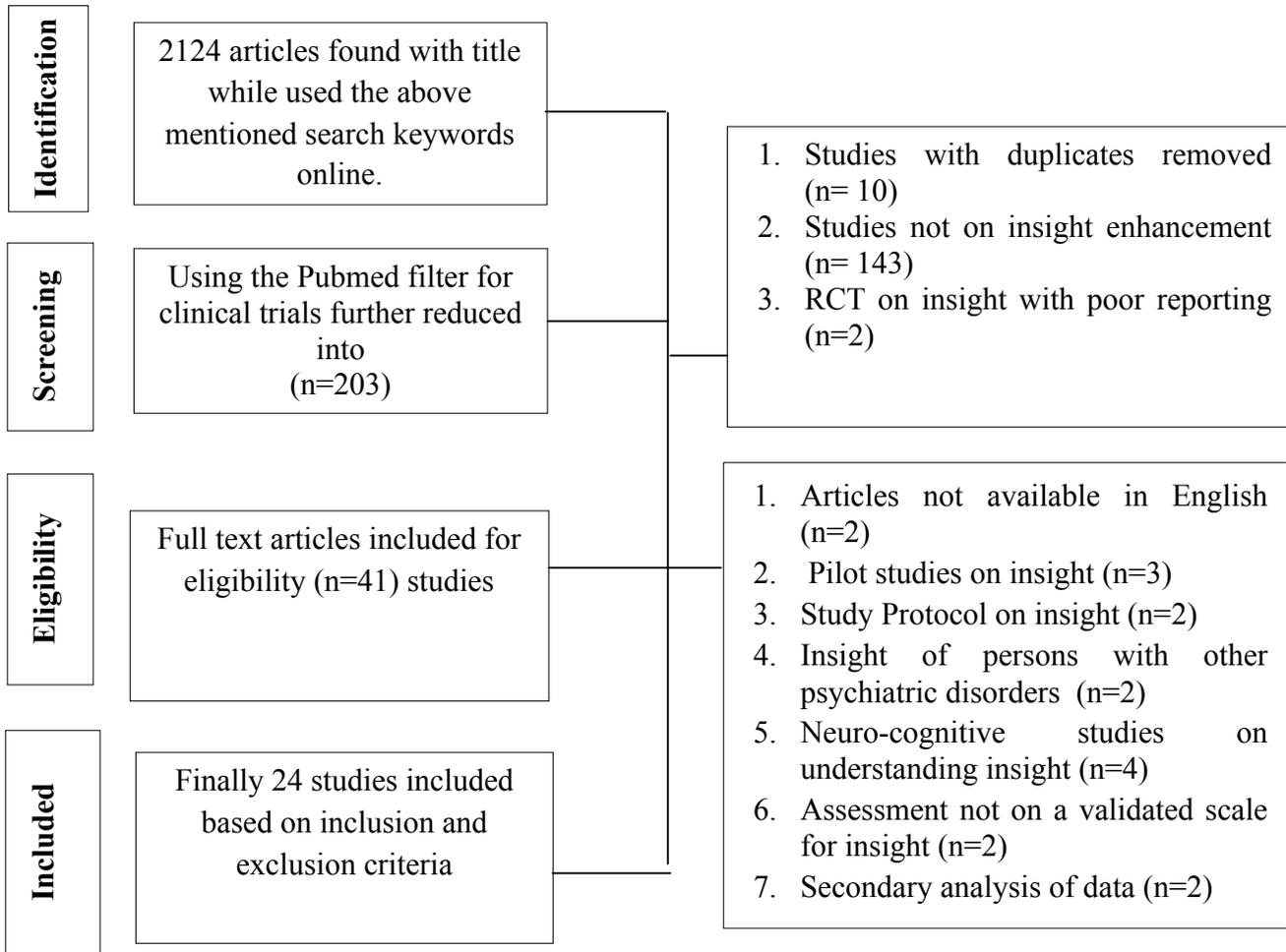


Figure 1. PRISMA chart of study inclusion process

Results

Video-Self Observation (VSO)

We identified one study in this section. This study focused on people with schizophrenia, schizoaffective disorder, or BPAD with psychotic symptoms based on ICD-10 & DSM IV diagnosis. A video was recorded and showed while patients were symptomatic at their interview or another person or an actor mimicked similar symptoms.

All the participants were randomly assigned to the intervention group. The strengths of this study included the scale used in the study which had good predictive validity and reliability. This study concluded that VSO as a safe mode of intervention for enhancing insight. However, in this study¹¹ the follow up period was too short to confirm durability of insight as an outcome.

The details of the duration and the number of sessions was not provided. In addition, this study lacked confirmation for an effect on scores of insight scale and a video control group to match the effect of the intervention. No details about the duration of the study was given and the authors did not use a CONSORT statement while reporting the trial. The registration of the trial not mentioned in the article.

Meta-Cognitive Therapy (MCT)

We identified four studies using this mode of intervention. The first study¹² targeted clinical and cognitive insight. This study protocol was registered in Dutch trial register. The module used in the study was adapted from CBT. A CONSORT chart used to depict the study process. An improvement was seen among the TAU group over insight, but the study concluded that it was not cost effective.

This study had several limitations. Subjects were not randomized and the rater was not blinded to group allocation. The expertise of the therapist was not mentioned. The severity of positive symptoms was not measured, and the groups were not equally matched on participant's cognitive capacities. Also, the session sequences were not delivered in an order to the participants, and details of those subjects who missed the follow up sessions were not reported.

The second study¹³ of this section attempted to improve insight with Meta-Cognitive Therapy (MCT). The strength of this study was that the intervention was translated to vernacular language for the ease of understanding for the participants. Matching was done on gender, age & diagnosis between groups and dropout rate was minimal.

The improvement seen on insight was not highly significant at post assessments. There was no CONSORT statement used in this study and a pilot study not done. Protocol was not registered in any online registry and details of sample size estimation not provided in the study. Information on the assessors fidelity check also missed to report.

The third study's¹⁴ participants were selected from a heterogeneous population with the diagnosis of schizophrenia spectrum disorders as per the DSM-IV criteria. Sessions were based on self-reflection and self-certainty. The clinical severity of positive symptoms were not measured in the study, and follow up was too short to see the changes in self certainty. Treatment group had better levels of education compared to the TAU group at baseline which indicate that the groups were not equally matched on cognitive capacities except their level of education. There is no

reporting about the pilot study. This study missed out a CONSORT diagram.

The last study in this section¹⁵ was a multi-centre study which attempted to improve insight by changing the metacognitive beliefs related to delusions of persons with schizophrenia. MCT intervention was delivered according to the MCT manual. The study recommended MCT for improving insight in persons with Schizophrenia.

In this study, training was given to the therapists before the study. Blinding was successful in assessments. A CONSORT flow chart was given in the article. However, the sample size was small, and details of sample size estimation was not provided in the article. The period of assessment was quite short, and details of trial registration are not mentioned.

Cognitive Behavior Therapy^{Plus} (CBT^{Plus})

This section found two studies in the published literature. The first study¹⁶ found that greater reflectiveness and a variety of coping strategies helped improving insight. The CBT^{Plus} intervention details were clearly given in the article. Before the start the intervention fidelity check was done. This study had moderate sample size, and the inadequate power militated against the finding that there were favourable changes in pre and post-therapy sessions. A CONSORT statement was not used.

Most of the participants were diagnosed with paranoid schizophrenia and had many contacts in the community. They may have used the community resources to improve their coping in comparison to the persons who were admitted. Although, the study targeted both clinical and cognitive insight. However, the improvements were seen only in cognitive insight. This study emphasized

that coping styles and insight are crucial factors for determining efficacy of CBT^{Plus} in schizophrenia.

The other study¹⁷ aimed at enhancing insight in patients with psychosis using CBT^{Plus}. The therapist of the study was given prior training before starting the intervention. Results indicated betterment in self-reflection and depression. However, there was no change in the clinical awareness component of insight.

The CONSORT statement was left out while the trial was reported. The study rater was not blind, and participant blinding was not clear. Also, there was no statistical correction carried out for multiple comparisons, and a greater number of analyses done on small sample leads to a high probability of Type I error. There was no lasting effect found on outcome variables after three months, as the study did not provide booster sessions.

Cognitive Behavior Therapy (CBT)

One study¹⁸ aimed to evaluate the effectiveness of CBT in comparison to enhanced supportive therapy on treatment resistant auditory hallucinations, and also looked for changes in insight. The CBT assisted participants to check their cognitions and conations before, while and after experiencing the hallucinations. Enhanced supportive therapy showed reduction of negative beliefs.

A strong delineation was made between the two treatments. A CONSORT flow chart was given on the study processes and raters were blind to the participants assignments. However, inadequate number of participants was a flaw in this study, and the absence of a 'treatment as usual' group does not allow attribution of results to the specific interventions. There was no information

about the fidelity check of raters on their assessments.

Compensatory Cognitive Training (CCT)

In this study¹⁹ cognitive and clinical insight were studied. The study found no impact of compensatory cognitive training on clinical and cognitive insight. The study did not seem to primarily aim at improving insight, and the sample consisted of subjects with fair insight, making it difficult to change the insight further.

The study gave details of the intervention sessions, raters were blind to the assessments, and inter-rater reliability was done for the scales. The weaknesses of the study included lack of screening of subjects before entry into the study and small sample size on post assessments. The article did not include a CONSORT statement.

Social Skills Training (SST)

A study²⁰ attempted structured social skills training - SST in comparison with standard Psycho-Education - PE to improve insight. Notable strength seen in this study is that it involved family members as participants in the workshops. The limitations were fewer number of samples in two groups, short period of follow up and continuing symptoms. The study results showed significant improvement in insight in the SST group.

Granholm et al²¹ conducted a study to improve insight of people diagnosed with chronic schizophrenia residing in the community. This study used CBSST techniques in behavioral coping, social functioning, problem solving and compensatory aids for neurocognitive impairments.

The study quality was good and the intervention produced significant

improvements in insight than TAU group. The limitation of this study was that it had moderate sample size and the study did not control for general therapist contact throughout the study in the intervention group.

The third study in this section²² was conducted with blind raters, had low attrition levels, but found no sustained effects of intervention on follow up. Insight was assessed on stable people with schizophrenia and schizo-affective disorder as per DSM IV criteria.

The intervention group showed better cognitive insight compared to treatment as usual group, but this failed to maintain at 12 month follow up. The study also suggests a longer duration of follow up and the need for booster sessions to get lasting results on cognitive insight. Although, the study design was well-built.

There were limitations as well like the small sample size and lack of matching at baseline. Improvement was seen in both groups. Again, contact with general therapists was not controlled for. The study did not include people with active substance use, which may limit the generalizability of the results among the middle aged people with schizophrenia.

Combined Intervention (CI)

This study²³ attempted to improve insight with psycho-education, family intervention, social skills training and CBT in-patients in their first episodes of schizophrenia or schizophreniform disorder. The study results showed significant improvement in insight, and also improved adherence to medication and reduced treatment discontinuation. An issue with this study was that blinding may not have been effective. The study recommended that psycho-social treatments

as an adjunct to medications were effective and should be set as standard in the treatment of schizophrenia.

Another study²⁴ attempted to enhance insight via a structured psycho-social intervention program (Psycho-education, Motivational Enhancement, Social Skills Training, Coping Strategy Enhancement) for persons with the first episode psychosis/Mood disorders. The methodology was reasonable, sample size calculation was done, the therapist was given training, fidelity check was done and the session details clearly mentioned in the article. CONSORT guideline was followed in the study. The details about the intervention session is very useful for readers, which is uncommon in the insight literature.

The major limitations of this study were that the participants had not received an official diagnosis prior to the entry into the study and substance use was not assessed. The study participants were not blind to the intervention, leading to reduction in external validity (Hawthorne effect) of the results.

Self Stigma Reduction Program (SSRP)

Insight enhancement has been attempted with an internalized stigma reduction program having five integrated contents²⁵. This study used DSM-IV criteria for schizophrenia. The session details were clearly given in the article. The study found that there was a worsening in insight among the control group as against improvement in the intervention group.

However, the intervention effect did not persist after the treatment protocol. The study also failed to get domains of self efficacy and insight, and did not control for confounding factors, which is a risk to the validity of the results.

Cognitive Remediation Therapy (CRT)

One study was found in this section with CRT²⁶. This study included persons with chronic and stable schizophrenia. The results showed that both intervention and TAU groups showed improvements on levels of insight. Details of sample size calculation and therapist fidelity were not provided, and the raters were not blind. The flowchart given in the article was not mentioned as a CONSORT statement and missing the details of a pilot study.

Guided Group Self-Determination (GGSD)

Patients with repeated or long admissions, numerous relapses, or not showing betterment were targeted as per ICD-10 criteria for schizophrenia²⁷. Power calculation was done, raters were blind, the study was registered online, the group versus time interaction effect was calculated and the fidelity check was also carried out. Study results showed significant positive impact on clinical insight but not on cognitive insight.

This was an open trial, other general treatments may have made impact on the results. The main author was part of all the phases of the study, which limits the effects of blinding. Also, the treatment group and treatment as usual group was not clearly demarcated on treatments that they avail during the study period, and the article did not provide a CONSORT statement.

Adherence Therapy (AT)

Insight was chosen as the mediator in this study²⁸. The sample size was moderate, and information provided in the paper was sufficient. This study used an evidence based theoretical model and a hierarchical structure for deciding the order of the interventions. Treatment fidelity was also rated. The study could not find any significant effect of intervention on the level

of insight. Lack of blinding and masking of clinicians could have led to bias in treatment allocation.

Another study²⁹ included in the section was on adherence therapy for persons with schizophrenia. This study included a large number of participants from multiple countries. The overall study quality was good and details provided in the article was adequate. The study results were similar across all its regional study centres in different countries. The trial was registered in an online registry and CONSORT statement was followed in the study. However, details of the rater's fidelity check has not provided in the study.

However, the participants of this study already had moderate levels of adherence on self reported measures prior to entry into the study, leading to possibility of a ceiling effect. Participants with low adherence did not make significant gains with adherence therapy vs health education in the subgroup analysis. There was poor consensus between self-rated and clinician rated adherence. Also, the intervention was provided only in single sessions with no booster sessions for a period of five months.

Motivational Interview (MI)

This section includes two studies. The first study²⁴ was conducted on persons with schizophrenia. This study's sessions were aimed at educating the participants about the illness and community resources, motivational interviewing and empowerment, social skills training and coping strategy teaching for associated anxiety, and setting a realistic plan for the future. Sample size was calculated a priori, participants were randomly assigned to the groups, and drop out rate was less.

A CONSORT flow chart was given in the article. All the subjects in the study had a short duration of illness. The limitations include the therapist not being blind to treatment allocation, participants receiving varied support from the community as well as home visits by community psychiatry nurses. These factors suggest a high possibility of bias.

The second study of this section³⁰ conducted among persons with schizophrenia. Sessions themes aimed at educating the participants about their mental illness. Comparing the past and present in terms of taking medicines. Assess the knowledge and attitude towards medications, plan for problem solving, identify barriers of adherence and their ability for problem solving.

Relapse prevention and reduce social stigma and enhance social support. The study had adequate sample size estimation. The therapist was a trained professional, fidelity of the sessions were assessed, session themes were provided in the article, and a CONSORT statement flow chart was provided. The results obtained were sustained upto 18 months. The limitations included lack of blinding of the therapist and all participants being employed persons with moderate severity and with short duration of illness.

Illness Management Recovery Program (IMRP)

This study included in-patients of a hospital awaiting their discharge into the community³¹. The IMRP included practical facts about schizophrenia, using medication effectively, and coping with persistent symptoms. The study got good test-retest reliability scores. Raters were trained, fidelity check was done and raters were blind to the participant assignments. Group

versus time interaction effects were calculated.

Some of the limitations were that the sample size was small and follow up period was only a month, blinding was not successful, and the study was not registered in any online registry.

Mindfulness-based Group Psycho-education (MGP)

This study³² targeted on clinical insight by providing mindfulness-based group psycho-education for persons with schizophrenia. There were three arms, one with conventional psycho-education group, and a Treatment As Usual group. Therapists were supervised after the training given to them. All the sessions were video recorded and fidelity check ensured. To avoid bias, the data entry was done by a person who did not participate in any other study procedures.

The trial details were depicted as per the CONSORT statement. The study showed moderate effects of MGP in improving insight. Whereas, no significant difference found between the conventional psycho-education group (CPG) and TAU in the levels of insight at third time post assessments. The limitations were a small sample size, short duration of illness in the participants and inadequate blinding of

participants. There was also a possibility of allegiance bias entered among the therapists.

Naikan Therapy (NT)

One study was found which used NT³³ targeted on persons with schizophrenia. In NT the participants given with thought exercises while seated in a quiet room. The NT involves systematically analyzing past experiences on four perspectives. Firstly, the themes were given about chronological stages, objects and procedures. Secondly it is on the participants and their emotional responses.

All the participants allowed to recall their past events in a chronological order with regard to how they see themselves and how other participants seen them. At each step the participant is allowed to systematically analyze their emotional states.

The therapists were trained and raters were blind to group assignments. A CONSORT statement was also used in the study. However, sample size estimation was not mentioned, raters fidelity check was not done no information was given on attrition rate, therapist training details and randomization procedure in this study.

The trial was not registered online. The results indicated a moderate level of improvement seen in the levels of insight in NT group versus no noticeable uptick found across control group in the levels of insight.

Table 1. The details of the study session and reported effect of psychosocial interventions attempted to enhance insight in schizophrenia

Multiple/Single Session	No of Sessions	Duration of Intervention	Duration of Follow up	Insight as Primary/ Secondary Outcome	Reported Effect on Insight
Single²¹	24	2 hour/week	6 Months	Primary	Significant
Single²⁹	8	50 Minutes	12 Months	Primary	Not Significant
Multiple²⁰	16	1 Hour	24 Months	Secondary	Not Significant
Single²²	24	*NA	12 Months	Secondary	Not Significant
Single³²	12	2 Hour	24 Weeks	Secondary	Moderate
Single¹⁸	12	1 Hour	12 Months	Secondary	Significant
Multiple²³	48	1 Hour	12 Months	Secondary	Significant
Single¹⁷	24	1 Hour	9 Months	Primary	Not Significant
Single²⁸	NA	NA	6 Months	Secondary	Not Significant
Single¹⁶	19	NA	6 Months	Primary	Significant
Multiple²⁵	16	NA	6 Months	Primary	Not Significant
Single¹⁹	12	2 hour/week	3 Months	Secondary	Not Significant
Single¹¹	NA	NA	48 Hours	Primary	Significant
Multiple²⁴	08	2 hour/week	12 Months	Secondary	Significant
Single²⁷	10	30-60 minutes	12 Months	Primary	Significant
Single¹⁴	08	60 minutes	4 Weeks	Primary	Significant

*NA: Details not available in the article

Table 2. (Continuation of Table 1.) The details of the study session and reported effect of psychosocial interventions attempted to enhance insight in schizophrenia

Intervention	IP/OP	Targetted Sample Size	*Tools	Age group Targeted	Rater/s Blind
CBSST ¹	OP	76	BCIS	42-74	Yes
AT ^{29,20}	OP	300	SAI-E	NA	Yes
CRM ²⁰	IP	103	ITAQ	18-60	Yes
CBSST ²²	OP	76	BCIS	42-74	Yes
MGP ³²	OP	138	ITAQ	18-39	Yes
CI ^{23,18}	IP	65	BCIS	18-65	Yes
MCT ¹²	NA	154	ITAQ	18-65	Yes
PE, FI, SST, CBT ²³	OP	1268	ITAQ	16-50	Yes
CBT ²⁸	OP	74	IS, MCQ	18-65	No
TAT ¹⁵	OP	109	BSR	NA	Yes
MC ^{Training 16}	IP/OP	68	SUMD	18-65	Yes

Table 3. An overview of the characteristics of psychosocial intervention studies that attempted to enhance insight in schizophrenia

Intervention	IP/OP	Targetted Sample Size	*Tools	Age group Targeted	Rater/s Blind
CBT ¹³	OP	60	SAI-E	NA*	NA*
MCT ³⁴	OP	28	SAI, BCIS	NA*	Yes
CBT ²⁵	IP	192	SAI	18-60	Yes
SSRP ¹⁹	OP	68	SUMD	18-65	Yes
CT ¹¹	OP	69	BCIS, PANSS G12	≥18	Yes
VSO ²⁴	IP	40	ITAQ, SAI-E	18-55	Yes
SPIP ²⁷	OP	180	ITAQ	18-60	Yes
GSD ¹⁴	OP	101	PANSS G12, BIS	18-70	No
MCT ¹⁶	IP/OP	80	BCIS	18-60	Yes
NT ³³	IP	235	PANSS G12, ITAQ	NA*	Yes
CRT ²⁶	IP	126	ITAQ	18-65	No

Table 3. (Continuation of Table 2.) An overview of the characteristics of psychosocial intervention studies that attempted to enhance insight in schizophrenia

Abbreviations: BCIS: Beck Cognitive Insight Scale, SAI-E: Scale for Assessment of Insight-Expanded, ITAQ: Insight and Treatment Attitude Questionnaire, IS: Insight Scale, MCQ: Meta-cognitive Questionnaire, BIS: Birchwood Insight Scale, PANSS G12: Positive And Negative Symptoms Scale G12, SUMD: Scale for unawareness of Mental Disorder

Discussion

The majority of the studies reported in this review tried to improve insight through cognitive approaches as it is the most common method to enhance the levels of insight. Insight is universally established as multi-dimensional, with plenty of definitions and assessments. Hence, the concept of insight is divergent across studies. Therefore, studies try to improve insight from varied angles/dimensions/concepts that have continued to remain as valid factor for the researchers in reaching consensus while formulating the interventions.

The recent literature shows various treatments attempted by the researchers and most have been moderately to significantly effective in improving the levels of insight. An interesting fact from the studies included in this review is that in-patients^{11,14,18,20,26,31,33,34} as well as stable patients²⁶ benefit from the interventions if the study methodology is robust, and it does not matter even if patients are symptomatic. Studies in the recent past suggest the efficacy of multi-component interventions over single component approaches, possibly due to the multi-dimensional nature of insight.

Psycho-education remained as an indispensable part in the multi-component interventions. Most of the studies did not include participants family in the insight interventions, although studies that sampled and have shown efficacy. One study suggested that providing psycho-social interventions along with medication for all person with schizophrenia would be beneficial.

Insight can be enhanced through group or individual interventions, although group interventions may be cost-effective. Most

studies administered longer duration of sessions for ensuring effectiveness on follow up.

A few studies with lesser sessions showed lack of durability of changes seen in the levels insight. It seems clear that insight enhancement programs should have multiple components and are needed for longer durations. Although many of the RCT's had a reasonable methodology, most did not include a pilot study to establish feasibility^{14,31,32}.

Most of the insight intervention studies did not mention sample size estimation^{19,26,33}. One of the critical factors of a RCT is blinding, and many studies did not strictly follow it or failed in implementing blinding^{12,17,23,24,26,27,30,31,35}. Few of the studies were not registered in any online registry, which is also helpful to inform other researchers in this area of insight in schizophrenia. Other factors like age, duration and severity of illness, are also important while formulating an intervention for insight. Many of the studies have not mentioned about the details of the themes of the interventions, possibly because the authors felt that they adopted an existing empirically supported intervention.

Majority of studies considered substance dependence as an exclusion criteria. Another important fact is that a meta-analysis³⁶ found evidence that depression is an crucial factor of concern for researchers while enhancing insight with psycho-social interventions. Most studies included in this review have not addressed or factored depression into the study as an outcome variable while insight is improved. Therefore, future studies should pay attention to manage depression.

The studies included in this review found that psychosocial interventions for insight

are safe to the participants. It is also evident from the studies that innovative and multi-component, cost effective insight interventions need to be developed and attempted, as they may offer promising advance in improving the levels of insight. There is still a scarcity of effective non-pharmacological interventions to improve insight in schizophrenia in the recent literature.

Conclusion

It is now well-recognized that insight is one of the essential component determining early recovery and a predictor of outcome in schizophrenia. The findings of our review lead us to conclude that insight continues to exist as a key therapeutic target that future studies should continue to address. Effective and integrated psycho-social interventions can be used to enhance levels of insight. Although, research can be fallible, attention to methodology and strict control of confounding factors can help make the future studies robust and generalizable.

Limitations

This review of literature has not covered the articles published before 2004 due to an existing review on insight interventions till 2004. Hence, relevance was given to recently published studies.

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Conflict of Interest

None

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