

Review

Social Cognition: A Review on Interventions

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ABSTRACT

Dealing with social context diversity is acknowledged as a challenging aspect for most of clinical patients. Non-pharmacological interventions that include social cognitive training across various chronic clinical conditions have increased dramatically over the past few years. In the present review, we have attempted to provide an overview of various evidenced-based social cognitive interventions (SCIs) targeting single and multiple social cognitive domains in a variety of developmental and neuro-psychiatric conditions. We have attempted to include all the existing interventions and summarize the empirical basis of these SCIs. The current review aims at advancing the current understanding of SCIs across various clinical and neuro-developmental conditions by focusing on their treatment benefits, limitations, current challenges and directions for future research.

KEYWORDS: Social cognition, Interventions, Neuropsychiatric conditions, Developmental conditions

INTRODUCTION

Social cognition (SC) is a broad concept that refers to a complex set of mental operations i.e. perception, processing, explanation, prediction and response across diverse social contexts.¹ SC is considered to be a multidimensional construct comprising several domains which serve as sync between the person's interpersonal interaction abilities and expected social outcomes. Initially several attempts have been made to figure out the specific domains and in the year 2006 it was identified with the five domains i.e. emotional processing, social perception, Theory of mind (ToM), attributional bias, and social knowledge.² However subsequently in order to determine various domains of SC, a comprehensive survey done by the Social Cognition Psychometric Evaluation (SCOPE), four key domains were determined i.e. social perception,

ToM, emotional processing and attributional bias.³ Among these four domains, ToM and emotional recognition are known to be the most widely researched domains of SC.⁴

With respect to the neural basis of SC, it is considered to have complex processing system, encompassing a range of cortical and sub-cortical brain areas and their interconnected pathways.⁵ Impairments in social cognitive processing hold both functional and clinical relevance across variety of clinical conditions.⁶ Initially, the studies in SC were mainly focused on the role of ToM deficits in autism spectrum disorders,^{7,8} which was subsequently followed by several researches on both ToM and emotion recognition as critical SC impairments in schizophrenia leading to deficits in social functioning.^{9,10,11,12,13} Furthermore, there is considerable research evidence revealing that deficits in SC may contribute to poor

psychosocial functioning in other developmental, neurological and psychiatric disorders as well.^{14,15,16}

METHODS

A non-systematic electronic database search was conducted which was not limited by the year of publication. The current review framed no particular inclusion and exclusion criteria and has attempted to include all types of relevant studies published only in the English language in various journals. All the searches and data were extracted from the various electronic databases. Electronic databases included ScienceDirect, IndMed, PsychInfo, PubMed and Google Scholar. The key term 'Social cognitive intervention' was used to screen/search the relevant studies. After summarizing the all the relevant retrieved information, conclusion and future suggestions were made.

SOCIAL COGNITIVE INTERVENTION

Human beings are social beings and hence acquiring social skill is one such human expertise that warrants special attention in relational context. Being an umbrella term, acquisition of social skills embody a diverse range of social knowledge used to navigate social cues across varying interpersonal situations.¹⁷ In order to develop typical social repertoire, social skills training (SST) is one such intervention which encompasses several components that facilitates interaction with people. SST involves teaching and practicing of basic social or interpersonal communication skills, such as initiating and maintaining eye contact, typical use of gaze, making conversation, and largely to be assertive as more complex one which are taught didactically through different methods for e.g. role playing. On the other hand though being related, social cognition is considered to be a separate set of skills that are also integral to interpersonal relationships. It generally refers to how we interpret social situations including the understanding of the actions, thoughts, and feeling of others. Additionally with respect to social skill interventions, social interaction in human life serves as the association between the personal skills and social consequences. However all the social skills intervention requires the facilitation, generalization and adaptation of these skills to everyday situations into the community for which a very few attempts have been made so far.

Overall, interventions targeting social skills may be said to include broader range of related skills such as communication skills, neuro-cognitive and social cognition interventions. For this purpose several specific models have been developed to target specific vs. broad range domains of social skills. A few recent studies with adult autistic population have demonstrated that rather than individual factors social interaction quality and positive perceptions to a greater degree are induced by relational factors^{18,19} which suggests that relational harmony or compatibility contribute to social interaction outcomes in the patients with social cognitive

deficits. A recent study done by Morrison and his colleagues¹⁸ raises questions about the prognostic implication of well established SC measures in autistic people for their deficits in social interaction process with non autistic individuals. These drawbacks warrant the future research attempts to standardize the SC measures of real-world situations involving especially the social abilities within an interactive or relational context of SC process.

Social cognitive ability is assumed to represent overall social skills of a person.²⁰ Individuals with neuro-developmental disorders and major neuro-psychiatric conditions commonly experience reduced social cognitive and neuro-cognitive abilities that are often considered as an underlying mechanism of poor treatment outcomes. Furthermore, neurocognitive impairments may also lead to social skills deficits which also warrant further attention in preparing management plan. Additionally, deficits in these abilities are key determinants of poor social functioning in these individuals that have now increasingly become an important aspect for management plan. Initial studies support the feasibility and efficacy of social skills training as a broad range behavioral intervention but in the recent past a surge has been noticed in the development of targeted training intervention of social cognition domains. However, the studies related to targeted training interventions have been small and found to have suffered from various methodological limitations. Another issue arises from transfer of learning and training aspects across the settings i.e. clinic-based training to community-based training. A recent study has attempted to generalize the implementation of SC training in community settings but revealed findings with constricted implication.²¹

The interventions targeting the social cognitive deficits in major psychiatric disorders focus skill training to ensure the optimal recovery and community functioning. Skill training in contextual domain is a strength based approach which has been empirically evaluated in variety of deficit conditions. Numerous social cognition training manuals have been developed targeting specific deficit in developmental aspect of human life that are said to ensure optimal recovery process in variety of clinical conditions. Currently, almost more than two dozen manuals/modules for SC interventions have been documented in SC literature. Additionally, there have also been several attempts in most of the studies to classify SC interventions which have been mostly classified into three types i.e. broad-based/comprehensive, targeted and non-specific SC treatments.^{22,23,24} Among these SC treatments, targeted interventions have been found to have the highest number of studies. Second highest number of studies have been done under the category of broad-based/comprehensive interventions that incorporate other related training apart from SC treatment such as various remediation and social skill trainings. Cognitive Enhancement Therapy (CET) as developed by Hogarty and Flesher²⁵ has been the most studied intervention followed by Auditory Training with Cognitive Social Training and Cognitive Pragmatic Treatment. Under the category of targeted interventions, Social Cognition and

Interaction Training (SCIT) as developed by Penn and colleagues²⁶ embodies a broader range of SC related deficits is found to be the most widely studied targeted SC intervention. Training of Affect Recognition (TAR) which addresses only emotional recognition sub-domain of SC has been found to be the second most frequently studied targeted intervention followed by other targeted SC interventions such as Mind Reading and SummerMAX, ToM Training and Mentalization-based therapy. Lastly under the category of non-specific SC treatments, cognitive-behavioral and mindfulness-based interventions have been found to be conducted most frequently than other non-specific SC intervention. In a meta analysis conducted by Roelofs and his colleagues,²³ though the broad-based interventions were found to be efficacious in improving SC skills, the majority of studies has been found to be conducted on targeted category of SC interventions across various conditions and the finding of our review is in line with previous reviews and meta analysis studies^{27,23,24} However as compared to other clinical conditions, considerable studies of SCIs have been conducted on schizophrenia and autism spectrum disorders. Furthermore among the SC domains, the majority of studies have been conducted on ToM followed by the other sub-domains i.e. emotion processing, attributional bias and social perception respectively. Furthermore, with respect to the training aspects of ASD adolescents, a recent systematic review done by Tseng and his colleagues²² found that SCIs for adolescents suffering from ASDs lack the sufficient training inputs for the critical period falls between puberty and the transition to adulthood which present a significant limitation of SCIs targeting these individuals.

CONCLUSION AND FUTURE SUGGESTIONS

The present review attempts to explore the clinical relevance of SCIs in the psychosocial management and functional outcomes across a wide range of clinical conditions. There is considerable research evidence revealing that SC impairments may lead to psychosocial dysfunction resulting in poor quality of life of a person and our findings on SCIs are in line with previous research.^{28,29} The present review reveals some weaknesses along with the exploration of strengths of the role of SCIs in a variety of clinical conditions. Though, deficits in psychosocial functioning are common across variety of developmental, neurological and psychiatric disorders, targeted SCIs for these deficits are still in infancy and their global benefits seem inconsistent across investigations which may be due to their inappropriate methodology. Similarly, the quality of these findings seems to be constricted by heterogeneity in scales, limited methodological application and lack of long follow-up periods. Another important limitation in most of the SCIs studies has been found to be having poor psychometric properties of several SC measures. Currently, there is also a little evidence on what kind of intervention mechanism or process may impact a specific SC domain. However, our review suggests a number of future research recommendations, including scale standardization, methodological appropriateness, real world responses and

adaptation to community functioning. Essentially, the issues of ecological validity and generalizability of SCIs are of paramount importance required for long-term skill transfer in a typical everyday interpersonal living context or environment where relational dynamics play an important role. Finally, future research attempts should strive to improve methodological problems and statistical procedures with appropriate powered studies. Furthermore, augmenting technology-assisted services considering recent ongoing scenario may also enhance the treatment outcome and ecological validity of SCIs functional benefits.

CONFLICTS OF INTEREST: None

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