

Efficacy of Interpersonal Protection Model in Child Sexual Abuse with Cognitive Difficulties: A Case Study

Meena Sharma¹, Tej Bahadur Singh²
Institute of Human Behavior and Allied Sciences

ABSTRACT : *Child sexual abuse predominantly affects brain structures. Children cognitive functioning is associated with caregivers' attachment based experiences and attachment is often formed on the basis of interpersonal protection model. Till date few studies demonstrated the efficacy of interpersonal protection model in the recovery of cognitive deficits in sexual abuse case. The purpose of the study was to examine the improvement in cognitive functions of a victim of sexual abuse by employing therapeutic strategies of interpersonal protection model. Individual case study followed by assessment of neuropsychological deficit of a 10-year old girl was conducted; who was referred for neuropsychological assessment and psychological management. She had completed the assessment by taking frequent gaps. Total 10 therapeutic sessions were rendered to the child and mother. Post therapy assessment revealed substantial improvement in the frontal lobe functions of verbal working memory and set shifting component of executive function. Further this technique may assist clinicians and researchers in managing such cases of abuse.*

I. INTRODUCTION

Sexual abuse is accountable for neuropsychological and psychosocial impairments (Beers & DeBellis, 2002; Palmer *et al.*, 1999) and interpersonal psychotherapeutic protection model strategies have been identified to improve psychosocial functioning (Thomas, 2005) of sexual abuse cases. On the contrary, Bowlby's theory of attachment has strong basis of internal working model and significant association with cognitive functions. Although studies documented the efficacy of interpersonal protection model in abuse survivors but few studies substantiate the model in sexual abuse survivors affected with cognitive impairments. Available literature is suggestive of the fact that abused children have deleterious impact on their cognitive functions including higher cognitive ability (Palmer *et al.*, 1999), sustained attention and distractibility (Beers & DeBellis, 2002) executive functions, verbal memory and visuo spatial skills (Beers & DeBellis, 2002). Researchers also emphasized upon the techniques utilized to improve the psycho-social functioning of children (Herman, 1997; William & Sommar, 2000). In contrast Bowlby's (1982) attachment theory indicated strong association between internal working models, child attachment with caregivers (Thomas, 2005), and cognitive functions (Rutter & Van Ijzendoorn, 1989). Main (1973) reported that children with secure attachment as infants had longer attention span. In addition, Arne, Gove and Sroufe (1979) and Matas, Arend and Sroufe (1978) and studies demonstrated correlation between attachment and problem solving strategies of children. However, a protection model (based on attachment) and its impact on cognitive functions has rarely been investigated in abuse cases with cognitive impairments. We evaluated the efficacy of the model in sexual abuse case with cognitive deficits and the four stages of interpersonal protection model had applied to improve the cognitive functions.

Case Report : The case was 10-year old girl from lower socio-economic status, studying in 5th std. with no substantial personal, past, and family, medical and psychiatric history. She used to go for tuition classes in vicinity in Dec '2009' for one hour daily. Throughout the classes, a tutor molested her by touching her private organs, sexually kissing, fondling and forcing for undesirable sexual acts for short duration. After a gap of one month, child started showing symptoms of headache, apprehension in visiting to tuition classes, disturbed sleep, forgetfulness and difficulty in concentration. She was referred from the department of neurology to neuropsychology OPD for neuropsychological assessment in view of her cognitive difficulties. Child was assessed using NIMHANS neuropsychological battery (Kar, Rao, Chandramouli & Thennarasu, 2004) and findings revealed difficulty in executive functioning including verbal working memory and set shifting. This search assisted therapist to follow therapeutic strategies which will improve cognitive difficulties of the client. With this viewpoint therapeutic sessions were planned, therapist employed techniques of interpersonal protection model such as mixed feedback, time out, constructive dialogue or positive message, imagery rescripting and reprocessing, imagery restructuring. These techniques were utilized in 10 sessions and child reported significant improvement in cognitive functioning. During the sessions child mother was found to be supportive and motivated for the sessions. Further mother used to reinforce the child to practice the techniques

at home. After the completion of 10 sessions, neuropsychological assessment was carried out again and score on executive functions were found to be improved.

Tool used

NIMHANS Neuropsychology Battery for Children: To determine the child neuropsychological functioning in the domains of attention, memory, language and executive functioning, a comprehensive neuropsychological tool was employed. Reliability and validity with respect to children are found to be adequate. The following functions were examined: Sustained attention, focused attention, expressive, repetitive speech, set-shifting, planning, verbal working memory, verbal and visual learning and memory. Above subtests have been standardized on Indian children. Functional assessment would assist in recognizing the cognitive deficits and the structural consequences that have been assumed to be mediated in children with the history of maltreatment.

Procedure : An informed consent was apt to initiate cognitive assessment and psychological management. Child neuropsychological assessment was carried out with enough time interval gap provided during the test administration. Assessed domains were attention, memory, language and executive functions. Child had shown adequate interest and motivation for therapeutic sessions.

Data analysis : A girl child cognitive functioning was compared with the normative data gained from 400 school children. School children were chosen from English medium and co-educated schools. For each subtest, percentile scores were computed. The 10th percentile scores were taken as cut-off scores for identifying the deficit in present case. Cut-off scores were estimated according to age, education and gender. An obtained score falling below the 10th percentile was viewed as deficit in a specified cognitive domain.

Table 1 shows percentile scores obtained on neuropsychological subtests.

Result : NIMHANS neuropsychological battery was used to identify child cognitive difficulties. Norms of the battery standardized using 540 normal Indian populations. Distinct norms are available based on age, gender and level of education. Child obtained scores on neuropsychological battery were later compared with the standardized norms and interpretation was done by comparing the scores with normal control groups. Pre assessment results suggested that the frontal lobe functions i.e. verbal working memory and set-shifting (executive function). Child scored below 10th percentile on the subtest of verbal N-back measuring verbal working memory and Wisconsin card sorting test assessing abstract ability and power to shift the set and post assessment results depicted improvement in verbal working memory and set shifting ability.

II. DISCUSSION

A sexual abused child demonstrated substantial deficits in frontal lobe functions including verbal working memory and set-shifting, both functions examined through the subtest namely Verbal N-back test and Wisconsin Card Sorting Test. Findings indicated that child with sexual abuse history exhibited trouble in the memory processes such as storage, information manipulation and rehearsal. In addition Wisconsin card sorting test demonstrated child deficiency in shifting and maintaining the cognitive set. These findings are consistent with studies presenting difficulty in cognitive ability, attention, executive functions, verbal memory and visuo spatial skills (Beers & DeBellis, 2002; Palmer *et al.*, 1999). Conversely, child considerably performs well on attention, speech, verbal learning and visual learning memory functions. Present findings have been replicated with the previous studies examining maltreated children deficits in verbal memory and executive functions (Beers & DeBellis, 2002). But other neuropsychological functions such as sustained attention, speech, visual learning and memory were found to be unaffected in the present case. This might be due to sociodemographic variables i.e. gender (Putnam, 2003), social situation (Wolfe, Rawano & Chiodo, 2006) and victim relationship were producing differential impact on neuropsychological domains. Further present study utilized the techniques of interpersonal protection model to improve child cognitive deficits. This technique comprised of four stages: first stage emphasized on *client-therapist relationship* in which a 10-year old girl demands treatment for her cognitive difficulties and headache. She was brought to the therapist by her mother. Child was silent, not showing adequate interest and constantly clinging to her mother. In this session therapist placed emphasis on developing client (child) trust on therapist (Herman, 1997) as she had lost the trust on strangers after the traumatic experience. It was observed that child was feeling uncomfortable and fearful as struggling to free her from the past experiences (Pearlman & Saakvitne, 1995). Hence, initial three sessions focused upon therapist and client alliance. In the next sessions, therapist with firm voice suggested to the client to involve in the sessions using verbal behavior but child was often using non-verbal signals rather than verbal signals such as nodding heads, blinking eyes and using low voice (“Yes I Can”). According to the model, client’s mixed behavioral presentation in subsequent sessions is called *mixed feedback*.

Therapist made several attempts to understand client mixed positive and mixed negative feedback. For example, muted, decreased energy are likely to display negative feedback and increased energy with involvement in interpersonal interaction indicates positive feedback. In next phase, therapist supports the child and reinforces her to clarify the negative feedback and develop flexibility in her behavior. Further this intervention generates awareness and provides safety to the client.

Working with other Client Relationship : This is the second stage of the model where intervention begins by educating client about cognitive difficulties and headache. In the present case client was explained the key message of *time out* to cope with headache. Therapist provided different strategies to the child to deal with the overwhelming situations. Coping techniques include deep breathe, talk to family member or friend, say prayer, use imagination by closing your eyes, saying positive messages, listen to music, play game and if possible do some exercises to feel more relaxed. Further to handle the inner voices and fear, child was advised to write the dialogue on a piece of paper.

Working with Internal Criticism : In the third stage, it was identified that child was a good student in her classroom but headache and cognitive difficulties deteriorated her performance, as a result child academic performance significantly affected. Therapist went for role play exercises where two chairs present to represent each side of thoughts and inner conflicts and child reacted to the situation in verbal and non-verbal manner to make the therapist understand the situation in detail (Fagan & Shepherd, 1970; Greenberg *et al.*, 1993). Additionally child was taught *enactment* methods for resolving inner conflicts (Moreno, 1964). Clinician found these methods effective in trauma victims (Elliot, Davis, & Slatick, 1998). With this therapist recognized child as a stronger protector of self, actively defend herself from the inner voices, and to challenge these voices child learnt the strategy of *constructive dialogue or positive message* for herself such as "I am absolutely not to blame", "It was not my fault", "adults should never touch kids in a sexual way", "abuser should be blame for abuse", "deserve to feel better", and "take good care of herself".

Working with Trauma Memories : This step is a most critical part in the treatment of abuse case (Herman, 1997; Van der Kolk, 2002). It includes two methods: *imagery rescripting* and *reprocessing* (Smucker & Dancu, 1999) and *imagery restructuring* (Greenberg, 2002, pp.216-217). In present case, child was suffering from nightmares including fear of darkness therefore therapist instructed client to "change her nightmares in a positive way and visualize them for few minutes". Child practices this technique for two weeks and gave positive feedback, thereby mother reported significant improvement in academics and headache of the child. She started involving herself in extra-curricular activities and increased interaction with classmates. Child was also found to be ready to use coping strategies and positive messages in her life to deal with overwhelming situations. During the sessions, child was not prescribed any medication to reduce the symptoms of headache which implies that interpersonal model of protection cause significant change in cognitive and physical complaints. Thereby this approach proves to be effective in sexual abuse cases. Although the stages of psychotherapy is time-taking but it is not necessary to apply all the steps of the model in single case. Hence present study indicates that interpersonal model of protection based on attachment principles improves the cognitive and psychosocial functioning of a child. Therefore, interpersonal protection model is a technique predicting improvement in cognitive functioning of a child affected by sexual abuse. Further it improves cognitive and behavioral functioning of the child but more studies are required to validate the techniques in varied cases of abuse.

REFERENCES

- [1]. Arend, R., Gove, F.L., & Sroufe, L.A. (1979). Continuity of individual adaptation from infancy to
- [2]. Kindergarten A predictive study of ego-resiliency and curiosity in preschoolers. *Child Development*, 50, 950-959
- [3]. Bilzard, R.A. (2001). Masochistic and sadistic ego states: Dissociative solutions to the dilemma of attachment to an abusive caretaker. *Journal of Trauma and Dissociation*, 2, 37-58.
- [4]. Beers, S.R., & De Bellis, M.D. (2002). Neuropsychological function in children with maltreatment-related posttraumatic stress disorder. *American Journal of Psychiatry*, 159, 483-486
- [5]. Bowlby, J. (1982). *Attachment and loss: Vol.1 Attachment* (2nd ed.). New York: Basic Books.
- [6]. Elliot, R., Davis, K.L., & Slatick, E. (1998). Process-experimental therapy for posttraumatic stress difficulties. In L.S. Greenberg, J.C. Watson, & G. Lietaer (Eds.), *Handbook of experiential psychotherapy* (pp. 249-271). New York: Guilford Press.
- [7]. Fagan, J., & Shepherd, I.L. (1970). *Gestalt therapy now: Theory, techniques, applications*. Palo Alto, CA: Science and Behavior Books
- [8]. Fauber, R., Forehand, R., Thomas, A.M. & Wierson, M. (1990). 'A meditational model of the impact of marital conflict on adolescent adjustment in intact and divorced families: the role of disrupted parenting', *Child Development*, 61, 1112-23.
- [9]. Gabowitz, D., Zucker, M., & Cook, A. (2008). Neuropsychological Assessment in Clinical Evaluation of Children and Adolescents with Complex Trauma, *Journal of Child & Adolescent Trauma*, 1, 163-178.
- [10]. Greenberg, L.S. (2002). *Emotion-focused therapy: Coaching clients to work through their feelings*. Washington, DC: American Psychological Association

[11]. Greenberg, L.S., Rice, L.N., & Elliot, R. (1993). Facilitating emotional change: The moment-by-moment process. New York: Guilford Press.

[12]. Herman, J. (1997). Trauma and recovery (2nd ed.). New York: Basic Books

[13]. Herman, J.L., Perry, J.C., & Van der Kolk, B.A. (1989). Childhood trauma in borderline personality disorder. *American Journal of Psychiatry*, 146, 490-495.

[14]. Ito, Y., Teicher, M., Glod, C., Harper, D., Magnus, E., & Gelbard, H. (1993). Increased prevalence of electrophysiological abnormalities in children with psychological, physical and sexual abuse. *Journal of Neuropsychiatry*, 5, 401-408.

[15]. Ito, Y., Teicher, M. H., Glod, C. A., & Ackerman, E. (1998). Preliminary evidence for aberrant cortical development in abused children: A quantitative EEG study. *Journal of Neuropsychiatry and Clinical Neurosciences*, 10, 298-307.

[16]. Johnson, J. G., Cohen, P., Brown, J., Smailes, E.M., & Bernstein, D.P. (1999). Childhood maltreatment increase risk for personality disorders during early adulthood. *Archives of General Psychiatry*, 56, 600-606

[17]. Kar, B. R., Rao, S.L. Chandramouli, B.A, Thennarasu, K. (2004). NIMHANS neuropsychological battery for children-manual. Bangalore: NIMHANS publication division.

[18]. Liotti, G. (1999). Disorganization of attachment as a model for understanding dissociative psychopathology. In J. Soloman & C. George (Eds.), Attachment disorganization (pp. 291-317). New York: Guilford Press.

[19]. Lyons-Ruth, K., Bronfman, E., & Atwood, G. (1999). A relational diathesis model of hostile-helpless states of mind: Expressions in mother-infant interaction. In J. Soloman & C. George (Eds.), Attachment disorganization (pp. 33-70). New York: Guilford Press.

[20]. Main, M (1973) Exploration, play and cognitive functioning as related to child-mother attachment. Unpublished doctoral dissertation, Johns Hopkins University

[21]. Matas, L, Arend, R A, & Sroufe, L A (1978) Continuity of adaptation in the second year The

[22]. relationship between quality of attachment and later competence *Child Development*, 49,

[23]. 547-556

[24]. Moreno, J.L. (1964). Psychodrama (Vol.1, 3rd ed.). Beacon, NY: Beacon House

[25]. Palmer, L. K., Frantz, C. E., Armsworth, M. W., Swank, P., Copley, J. V., & Bush, G. A. (1999). Neuropsychological sequelae of chronically psychologically traumatized children: Specific findings in memory and higher cognitive functions. In V. L. Banyard (Ed.), Trauma and memory (pp.229-244). Thousand Oaks, CA: Sage Publications.

[26]. Pearlman, L.A., & Saakvitne, K.W. (1995). Trauma and the therapist: Countertransference and vicarious traumatization in psychotherapy with incest survivors. New York: Norton

[27]. Prasad, M. R., Kramer, L. A., & Ewing-Cobbs, L. (2005). Cognitive and neuroimaging findings in physically abused preschoolers. *Archives of Disease in Childhood*, 90, 82-85.

[28]. Putnam, F. (2003). Ten year research update review: child sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 269-278.

[29]. Rutter, C.D. & VanIendoorn, M.H. (1989). Attachment and cognition: A review of the literature

[30]. Unpublished postdoctoral fellowship from the Royal Netherlands Academy of Arts and Sciences.

[31]. Smucker, M. R., & Dancu, C.V. (1999). Cognitive behavioral treatment for adult survivors of

[32]. childhood trauma: Imagery rescripting and reprocessing. Northvale, NJ: Aronson.

[33]. Study on Child Abuse: India (2007). Published by the Government of India, (Ministry of Women and Child Development).

[34]. Teicher, Martin H. (2002). "Scars That Won't Heal: The Neurobiology of Child Abuse," *Scientific American* magazine.

[35]. Teicher MH (March 2002). "Scars that won't heal: the neurobiology of child abuse". *Scientific American* 286 (3), 68-75.

[36]. Thomas, P. M. (2003). Protection, dissociation and internal roles: Modeling and treating the

[37]. effects of child abuse. *Review of General Psychology*, 7, 364-380.

[38]. Thomas, P.M. (2005). Dissociation and internal models of protection: Psychotherapy with child

[39]. abuse survivors. *Psychotherapy: Theory, Research, Practice, Training*, 42 (1), 20-36.

[40]. Vander Kolk, B.A. (2002). Assessment and treatment of complex PTSD. In R. Yehuda (Ed.), *Treating trauma survivors with PTSD* (pp.127-156). Washington, DC: American Psychiatric Publishing.

[41]. Wolfe, D.A., Rawana, J.S., & Chiodo, D. (2006). Abuse and trauma. In D.A. Wolfe & E.J. Mash (Eds.), *Behavioral and emotional disorders in adolescents* (pp. 642-671). New York: Guilford.

Appendix

Table 1: *Neuropsychological Test Percentile scores*

S. No	Tests	Functions	Percentile Scores
1	Color Trail Test	-Sustained attention (Time in seconds) -Focused attention (Time in seconds)	116 122
3	Sentence Construction	Expressive Speech	20
4	Verbal N-Back	Working Memory	5
5	Wisconsin Card Sorting Test (WCST)	Set-shifting	23
6	Tower of London	Planning ability	33
7	Auditory Verbal learning test (AVLT)	Verbal learning and memory	48
8	Memory for Designs	Visual learning & memory	40

Note. Bold percentile scores are falling below 5th percentile.