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Cognitive Insight and Cognitive Distortions: New Treatment Perspectives for Child Sexual Offenders

Lacambre M*, Prudhomme C, Lacambre JB, Bonnet S and Courtet PH

Department of Psychiatry, University Hospital Montpellier, France

***Corresponding author:** Dr. Mathieu Lacambre, Resource Center for Stakeholders for Sexual Violence Authors Languedoc-Roussillon, Department of Emergency and Post-Emergency Psychiatry, Lapeyronie Hospital, CHU Montpellier, 371 avenue du doyen Gaston Giraud, 34000 Montpellier, France, Tel: +33467338577; Email: m-lacambre@chu-montpellier.fr

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Abstract

While there is a growing interest for the role of cognitive distortions, data suggests specific cognitive impairments (trait and state) in problematic sexual behaviors, particularly in child sexual offending. Among the dimensions likely to play an important role, cognitive insight, the capacity for introspection and criticism of one's own beliefs, appears to be a relevant factor both for the evaluation and the care of the Sexual Offenders (SO). The purpose of this article is to improve understanding of insight's role, especially its articulation with cognitive distortions, in the explanation of sexual assault. For this purpose, levels of insight and cognitive distortions were compared between SO and non-SO matched by gender, age and level of education. In addition, particular attention was paid to control the effects of anxiety, depression and social desirability. The results show an inverse correlation between cognitive insight's level and cognitive distortions for the Child SO. These results will be discussed in terms of both scientific and therapeutic perspectives. More precisely, it may be expected that clinical work on insight may reducing the level of cognitive distortions and thereby promote the effectiveness of the proposed interventions.

Keywords: Sexual Offenders; Cognitive Distortion; Cognitive Insight; Paedophilia; Cognitive Dissonance

Abbreviations: BCIS: Beck Cognitive Insight Scale; CSO: Child Sexual Offender; MADRS: Montgomery and Asberg Depression Rating Scale; MBSR: Mindfulness Based Stress Reduction; MINI: Mini International Neuropsychiatric Interview; SO: Sexual Offender

Introduction

For around thirty years, following the development of the cognitive behavioral therapies, targets dealing with cognition and insight have appeared for evaluation and treatments. The term "cognitive distortion" has first been used by Beck in the 60's, based on the description of cognitive patterns [1]. Those patterns are unconscious cognitive structures implied in the processing of the information by driving the attention and the selective perception of environmental stimuli. Those cognitive distortions have then been introduced in the sexual offending field in the 80s [2] as « an individual's internal processes, including the justifications, perceptions and

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judgments used by the sex offender to rationalize his child molestation behaviour » [3].

The literature has extensively studied cognitive distortions and has integrated them in various models in order to face the major social problem of sexual violence and the need for a better understanding of etiological mechanisms undermining the sexual offenders (SO) behavior, in particular with children [4]. In the etiological model, they are described as behaviors existing before the sexual assault and participating to the triggering, allowing for some offenders to overcome their internal inhibitions [5]. Their aim would be to rationalize the aggression and protecting the self-esteem. In the reactional model, cognitive distortions are conceptualized as post-hoc reinterpretations [6], i.e. rationalization built after the aggression, in order to reduce the cognitive dissonances (the gap between the values of the social group and the ones from the individual), lower the offender feeling of guilt with respect to his actions, and to regulate the feeling of shame, of guilt and of self-esteem lost linked with infringing behavior [7]. An always more complex integrative model has been described those last year's [8], thus expanding the concept of cognitive distortion [9,10]. In 1996, Bumby has designed to self-administered questionnaires that aim at studying those cognitive distortions toward sexual offenders of children: the Molest scale [11]. This is a 4 points Lickert scale ranging from "strongly agree" to "strongly disagree".

Insight is a complex concept defined in the psychiatric area as a patient's ability to be conscious of his own pathology. Insight deficit have initially been explained as a psychological defense mechanism allowing a patient to protect himself against the consequences of the illness and to fight against the negative emotions resulting from the social stigmatization linked with mental illnesses [12,13]. The interest of the scientific community for the concept of insight became stronger from the 70's, after a prevalence study lead on a significant sample of patients with psychotic disorders [14] revealed that a low insight was a symptom of schizophrenia and a consistent and transcultural characteristic of this pathology. This concept has then evolved in its description toward a continuous and multidimensional phenomenon [15] that could be associated with some neurological functions disorders, such as the executive functions [16] or with brain region implied in the self-reflexion processes.

In 2004, Beck et al. introduced the concept of cognitive insight, defined as the ability of the consciousness to display cognitive distortions and to make erroneous interpretations [17]. This concept stems on the assumption that cognitive distortions exist. He defines those distortions as a cognitive bias that appears when taking into account the reality and the environmental stimuli. In this paper, cognitive insight refers to a reassessment and correction metacognitive process linked with cognitive distortions and erroneous interpretations. A specific scale has been designed to measure it: the Beck Cognitive Insight Scale (BCIS). This scale is made of fifteen items, divided in two categories: the « self-reflectiveness », which is a representation of the introspection, the ability to distance oneself from one's own mental creations and to take into account alternative hypothesis, and the « self-certainty », i.e. the certainty in one's own beliefs validity. A third composite score can computed (total score) by subtracting the self-certainty score to the self-reflectiveness score. This score would allow evaluating the hypothesis under which the level of support of the patient for his or her own beliefs would obstruct his or her abilities to criticize them. If insight alterations, and more specifically cognitive insight, have been initially studied and highlighted for schizophrenia [14], the number of empirical studies on cognitive insight in a great number of psychiatric pathologies [18] and on its link with dangerousness has been multiplied over the past twenty years [19]. Moreover, the BCIS factor's structure and validity have showed good intrinsic qualities for cognitive insight assessment of non-psychiatric individuals [20].

Beyond the psychiatric nosography, those two concepts of insight and cognitive distortions have quickly found a sympathetic ear in criminology, especially in the sexual offense field. Cognitive distortion evaluations among people responsible for pseudo-sexual assaults have been designed to evaluate the seriousness of the cognitive registration of the deviant behavior [9], whereas the insight capacity linked with notions of consciousness of the morbid nature of sexual behavior (and the associated feeling of guilt) has relatively received little attention. However, we hypothesize that there is a link between the insight capacity and the level of cognitive distortions for a subject responsible for sexual offends. This is the object of this study that we have lead from a sample of 41 sex offenders (SO) (30 of which are pedophiles and 11 of which are not pedophile sex offenders). This sample has been matched to a sample of neither 41 nor paraphile, neither sex offenders, subjects. We hypothesize that the insight scores of the SO group are significantly lower compared to the control group, and that there is an inverse correlation between the level of distortions and the level of insight.

Material and Method

This is a transverse and observational pilot study comparing the results of a 41 voluntary men sample condemned for sexual offends (rapists, child molesters, internet offenders), who have acknowledge the facts, and a 41 voluntary non paraphile, non-pedophile, never condemned, men sample. Those two groups match by sex, age, and education. With the agreement of the ethical comity, sex offenders have been recruited in the consultation of the Resource Center for professional's Working with Sex Offenders of the hospital of Montpellier (Centre Resources pour les intervenes auprès des Auteurs de Violences Sexuelles). Non-pedophile volunteers have been recruited by the Clinical Center of Investigation of Montpellier.

From a statistic point of view, analysis have been conducted using Matlab, and more specifically using the test function for the Student test, ranksum function for the Wilcoxon rank test and crosstab function for the Chi2 test.

During the scale's submission, take of psychoactive substance has been checked orally (non-inclusion criteria), biographic socio-demographic and medical data have been completed, psychiatric diagnostics have been investigated with the MINI [21].

The level of insight has been measured using the BCIS, cognitive distortions using the Mollest Scale [11]. In order to control possible biases, social desirability has been measured using the Marlowe Crowne scale [22] and the level of depression (exclusion criteria) has been controled using the MADRS [23].

Results

For the statistical processing, even if we have matched samples, we hypothesize that the two groups are independent because we lack significant data concerning the value of the correlation coefficient for the various tests between sexual offenders and the control group (Table 1).

	SO Group N=41	Control N=64	p-value
Age (years)	49.3 ± 12.2	49.7 ± 11.8	0.871
Education At least High School diploma Before High school	 32 (78%) 9 (22%)	 24 (63%) 14 (37%)	0.435
Marital status In a Relationship Separated/Divorced/Single/Widow	 17 (42%) 24 (58%)	 32 (78%) 9 (22%)	0.408
Children	26 (63%)	30 (73%)	0.986

Table 1: Descriptive analysis of the population of the study.

The two groups match for the Sex, Age, and Education criteria. The mean age of the study sample is 50 years (+/- 12 years). From a statistical point of view, we notice a non-significant difference concerning the marital status, the sex offenders being more often singles than the control group (58% vs 22%). We can also notice that a child stays in the same house as more than half the sexual offenders on a regular basis (Table 2).

	SO Group N=41	Control N=41	p-value
BCIS	7.2 ± 6.1	5.1 ± 4.9	0.061
Self-reflectiveness	14.5 ± 4.7	12.8 ± 3.1	0.050*
Self-certainty	7.3 ± 4.1	7.7 ± 3.3	0.425
Cognitive distortion	77.8 ± 16.3	55.2 ± 10.6	0.000*
Social desirability	21.0 ± 5.1	19.8 ± 3.8	0.117
MADRS	6.9 ± 7.3	2.2 ± 4.4	0.001*
MINI (au moins un OUI parmi 16 items)	20 (53%)	6 (15%)	0.345

* Significant score, Values are presented as N (%) or Mean ± SD
Table 2: Scores for the main scales.

P-value computation

a. P-values for BCIS, Self-refl., cognitive distortion tests have been computed using a Student test (or t-test), since the normality hypothesis was fulfilled
b. P-values for age, self-certainty, social desirability and MADRS have been computed using a Wilcoxon rank test, because the normality hypothesis was not fulfilled
c. P-values for Education, Marital status, Children and MINI tests have been computed using a Chi2 test Comparing the scores to the different evaluation scales we notice a significant difference between the two groups for the MADRS score, higher in the SO group with more psychiatric diagnosis for the MINI test (at least one diagnostic in 53% of cases in the SO group vs 15% in the control group).

Concerning the level of cognitive distortions, the scores are higher in the SO group, in accordance with the expected results as published in the international scientific literature. Concerning the level of insight, the total score of the SO group is higher than the control group. This result, consistent with those observed during the preliminary tests, seems to contradict our initial hypothesis of a lower level of insight in the sex offenders population compared to the control group. In addition, we observe a significant difference between the two groups for the BCIS self-reflectiveness sub-score, with an almost total score for the BCIS scale. Thus, the self-reflectiveness BCIS sub-score, which measure the introspection ability, is higher for SO group than the control group, but with higher dispersion.

Additional statistical analysis were done spliting the SO group (41 subjects) into two groups: the first group of 30 individuals consisting of subjects with a pedophile diagnostic according to DSM 5 [24], the second group of 11 individuals consisting of non-pedophile sex offenders. We compared the BCIS scores and the two associated sub-scores (self-reflectiveness and self-certainty) of the three groups (Table 3).

	SO pedophile	SO non pedophile	Control group
BCIS (score total)			
Mean	7,83	5,55	5,07
Median	8 (21;-3)	3 (19;-6)	5 (14;-6)
Std. dev.	5,63	7,53	5,00
Self-reflectiveness			
Mean	14,67	14,09	12,76
Median	15,5 (22;6)	13 (24;6)	13 (18;5)
Std. dev.	4,26	6,17	3,11
Self-certainty			
Mean	6,83	8,55	7,68
Median	6,5 (16;0)	7 (18;4)	8 (15;1)
Std. dev.	4,05	4,37	3,36

(Max and min values in brackets)
Table 3: Comparison of insight scores.

This confirms precedent results that showed higher self-reflectiveness sub-scores for sex offenders compared with the control group, with an even more significant difference for the pedophile sex offender subgroup. We can notice the high self-certainty subscore in the SO group. We used the Spearman coefficient (non-parametric) in order to highlight a significant association between the insight level and the cognitive distortion in those three groups (Table 4).

Cognitive Distortions (CD)	BCIS	Self-refl	Self-cert
CD Control group	0,17 (0,31)	0,24 (0,13)	0,07 (0,66)
CD SO group	-0,25 (0,12)	-0,11 (0,49)	0,31 (0,06)*
CD Pedophile subgroup	-0,38 (0,04)*	-0,12 (0,52)	0,38 (0,04)*
CD Non-pedophile subgroup	0,06 (0,87)	-0,13 (0,71)	0,16 (0,65)

* Significant score (p-value between brackets)
Table 4: Cognitive Distortion/insight correlation.

In the Pedophile-SO subgroup, a significant negative correlation is highlighted between cognitive distortions and both the total BCIS score and the self-certainty sub-score. We cannot find this correlation when we consider the whole SO group, or the non-pedophile SO subgroup, which shows again that the SO group is not homogenous. The size of the non-pedophile SO group is unfortunately too small to realize other statistical tests. Furthermore, we notice in the pedophile SO group a positive statistical correlation between the level of cognitive distortions and the self-certainty subscale score, in addition to a real trend overall the SO group.

Compared to the control group and the non-pedophile SO subgroup, the pedophile SO show a statistical correlation:

a. Negative between the level of cognitive distortion and the insight (total score), which is consistent with our working hypothesis of a link between insight and distortion and that this link is inverted (strong insight – low distortions Vs weak insight – higher level of distortions).
b. Positive between the level of cognitive distortion and the self-certainty sub-score.

Discussion

Our work suffers from various biases and limitations. The patients selection has been realized among patient being followed in outpatients consultations. They recognized the facts for which they have been condemned and already benefited from health care delivered by our teams, sometimes for years (follow-up bias). Therapeutic interventions may have modified some results, and influence the motivation to take part in the study (classification bias). The SO group is a clinically heterogeneous group of sex offenders, contact and noncontact offenders, pedophile or not (confounding bias). Neurologic substratum [25] as well as the neurologic test results may change depending on the profile [4,26]. No blood tests were applied to check drug or psychoactive substance taking. From a statistical point of view, the sample size is too small to highlight significant results, particularly for the non-pedophile sex offender subgroup. The depressions score (MADRS), even if lower than the diagnostic threshold, has probably an impact on the higher insight score of the SO group compared to the control group, broadly less depressed. Indeed, numerous works demonstrated the link between high insight scores and psychological distress [27], depression [28] and suicidal behaviors [29].

Conceptually, epistemological proximity between cognitive distortions (defined as a fix, stable and unwavering belief) and the conviction dimension (self-certainty) of cognitive insight makes it difficult to interpret the significance of a positive correlation. The scales used cover closely linked conceptual fields. Indeed, if the cognitive schemes have been developed to give meaning to the experience and facilitate the automatic processing of information [13], it clearly appears that this system perpetuates itself based on the convictions (self-certainty) that get stronger in relation with the cognitive distortions and (vice versa). The relevance of a self-administered questionnaire for the standard evaluation of cognitive distortions can be questioned [30].

Highlighting cognitive distortions with cognitive insight allow to explore further the theoretical sub-bases of those concepts, and also to propose intervention targets when curing sex offenders, especially pedophile ones. Indeed, beliefs related to sexuality integrate in implicit schemes [31] that must be validated via the introspection capability (self-reflectiveness). Some beliefs, when identified as inconsistent with the individual or the peer values create cognitive distortions [32] that will in turn create an internal tension [6] that cognitive distortions help solving. Thus, the introspection capability would not be a protection strong enough to impede the apparition of cognitive distortions, but rather as a lever to regulate them: positive reinforcement of the self-certainty dimension and negative reinforcement of the self-reflectiveness dimension. Association with a low thymia (MADRS score significantly higher for the SO group) could come from a feeling of guilt related with a painful introspection.

If, as suggested, sex offenders have a stronger introspection capacity than the rest of the population, this capacity (quantitative dimension) may be disturbed (qualitative dimension) by a deficit of empathy or Theory of Mind, psychotraumatic dissociative sequelae, emotional or sexual parasitic thoughts. We refer to those two dimensions (qualitative and quantitative) as an extension of Ó Ciardha's research [33] distinguishing between cognitive products (qualitative dimension) and cognitive structures (quantitative dimension). Insight capacity, when both effective and functional from a quantitative and qualitative point of view, could protect from the development and reinforcement of cognitive distortions.

Although those preliminary results would need to be replicated, we hypothesize a new target for sex offender care, in particular pedophile ones, from the insight capability. Because of the close relation established between insight and cognitive distortions for pedophile SO introspection capacity reinforcement (self-

reflectiveness) should indirectly participate in the cognitive distortion reeducation. Targeting the self-reflectiveness dimension, especially for SO denying any physical or psychic personal sexual implication, allow bypassing the monolithic convictions of the self-certainty dimension. Those results encourage designing targeted interventions [10] and research for all the insight dimensions for sex offenders [34]: clinical (consciousness of the illness and its consequences), cognitive (struggle against the distortions) and somesthesic (perception and construction of the perception of the illness). With this perspective in mind, on the individual level, Mindfulness and the MBSR seem to propose very relevant interventions in the view of reinforcing individual introspection capacity (self-reflectiveness). Moreover, on a collective level, if we consider the insight in a relationship dynamics perspective impacted by social-cultural factors, we hypothesize the importance of information campaigns and the destigmatization of pedophilia within the general population, in order to help fight efficiently against distortions and reinforcement of cognitive insight capacities for people suffering from paraphilia with pedosexual attraction.

Conclusion

Our pilot study is the first to explore the links between insight and cognitive distortions in a population of male condemned for child sexual offending. Its highlights a significant statistical correlation between the level of insight and cognitive distortions for a group of sex offenders, in particular pedophile ones. Some differences appear in distinct directions when looked through the insight dimensions evaluated suing the BCIS scale. As a matter of fact, in the pedophile sex offender group, the more the higher the self-certainty dimension, the higher are the cognitive distortions; and conversely, the higher the self-reflectiveness, the lower are the cognitive distortions. In addition to interventions on cognitive distortions, insight could be a pertinent complementary target in the care of sex offenders, in particular pedophile ones. More research are needed to confirm those results and assess specific interventions on insight in the sexual offender's support especially for CSO.

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Declaration of Conflicting Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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