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A randomised controlled trial of a cognitive behaviourally informed intervention for changing violent sexual attitudes among adult sexual offenders in prison

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Abstract

Background: Predatory sexual acts by adults cause concern worldwide. Patterns of distorted thinking and weakened self-control are among the leading explanations. Amidst growing concerns about sexual offences in Nigeria, it might be that more psychologically informed interventions in prison could reduce the risks of further harm compared with the standard prison regime.

Aims: To test the effectiveness of a cognitive behaviourally informed intervention (CBII) in reducing violent sexual attitudes among men in prison in Nigeria for a sexual offence.

Methods: In a randomised controlled trial, men in two prisons who responded to in-prison advertising about the trial were screened for nature of offence and willingness to participate. Those nearing their sentence end or in other psychological therapy were excluded. Sample size was confirmed by power calculation. The Compulsive Sexual Behaviour Inventory (CSBI-22) and the Hypersexual Behaviour Inventory (HBI) were administered before, immediately after and 3 months after completion of a 12-session (18 h) Cognitive Behavioural Informed Intervention or equivalent periods of 'treatment as usual' (TAU) alone. The CBII was designed to change sexual attitudes, and delivered by trained cognitive therapists to the men, as a group, in one of the prisons while the controls received only TAU in the other.

Results: Before the intervention, the 39 men in each group had similar psychosocial histories and sexual attitude scores. Following CBII, the intervention group showed a significant reduction in scale scores that was sustained, whereas the TAU group showed no significant change in scores. An ANCOVA analysis confirmed between-group differences immediately after the intervention and 3 months later.

Conclusions: This randomised controlled trial adds to existing knowledge in the field because prior studies have been from high income countries, where interventions are generally delivered in more privacy and at greater length. Given that our study had to be limited to change in sexual attitudes as the main outcome, future research must focus on the extent to which such change maps on to changes in interpersonal behaviour among such men. If these findings can be extended in this way and replicated, this could pave the way for more cost-efficient interventions in higher income countries too.

KEYWORDS
CBT, cognitive behavioural informed intervention, cognitive-behavioural therapy, Enugu, Nigerian prisons, sex offenders, violent sexual attitudes

1 | INTRODUCTION

1.1 | Attitudes to risk reduction

The efforts of researchers, scholars, governments, and organisations to educate the public about the societal, legal, and health implications of sexual crimes have had little effect on their prevalence (Eze, 2013; Nwokeoma et al., 2019). While criminogenic attitudes are only one of several dynamic elements in adult sex offending, their importance in a broad conceptualisation of risk assessment and risk reduction cannot be disregarded. Hillson and Murray-Webster (2004) defined "attitude" in this context as chosen responses to situations—rather than internal human brain processes and suggested that attitudes differ from personal characteristics in that they can be influenced by a variety of factors and are more mutable. Measures to reduce risk are based on the idea that they are part of a dynamic, adaptive process in which people and social factors interact (MacGregor et al., 2008) and have a number of elements. According to Slovic (1987) these include controllability, voluntariness, catastrophic potential, and degree of resultant uncertainty. Individuals' risk perceptions have a significant impact on how they choose to manage risk. For example, if a person believes the danger of a hazard is minimal, they are less likely to take steps to decrease their exposure to it (McCaffrey, 2004).

1.2 | Prevalence of violent sexual attitudes

Violence against women is widespread and starts at a young age (World Health Organisation, 2021). Globally, one in three women, or 736 million, experience physical or sexual abuse over their lifetime, a statistic that has stayed

relatively unchanged over the past 10 years (World Health Organisation, 2021). Nigeria is no exception, although estimated prevalence rates have apparently fluctuated (Ikechebelu et al., 2008; Olley, 2007; Tesfaw & Muluneh, 2022), with concerns that many instances still remain unreported (Olukemi & Folakemi, 2015). Children are especially vulnerable. According to Ikechebelu et al. (2008), approximately 61% of 12-year-old girls in Southern Nigeria have been abused, with adults encouraging the act.

1.3 | Nature of sex offences in Nigeria

As elsewhere, nature of sex misconduct in Nigeria is highly varied (Geidam et al., 2010) but an offence in law is confined to any act of penetration without the valid consent of the two parties, whether by violent or non-violent inducement. Ever harsher punishments have been adopted in order to try to deter offenders, so now, according to the Sex Offenders Act 2013, anyone who uses force to have sexual intercourse may face life imprisonment under its Section 43.

Also as elsewhere, there are many co-occurring hazards likely to follow sexual offending, including dangerous infectious diseases (Folayan et al., 2014), but risks may be especially high in Nigeria; over 73% percent of Nigerians who engage in non-consensual sex, for example, are at risk of HIV/AIDS (Akinlusi et al., 2014). Chronic emotional distress, social anxiety, and depressive symptoms, as well as post-traumatic stress disorder, are all recognised psychiatric sequelae of sexual violence (Jonas et al., 2011; Kendler et al., 2000; Nelson et al., 2002). Despite efforts to publicise such knowledge and heavy punishments for those who are caught, a serious public health challenge from sexual offending remains (Akinlusi et al., 2014).

Given this, we suggest that cognitive-behavioural interventions could at least help in secondary and tertiary prevention. The benefits of such an approach have been proposed elsewhere (Corabian et al., 2011; Schmucker & Lösel, 2008), while previous evaluations of cognitive behavioural approaches have shown promise (Hanson & Morton-Bourgon, 2004) perhaps especially among high-risk sex offenders and with relapse prevention (Birgden et al., 2003).

1.4 | Cognitive behavioural therapy applied to sex offenders

Cognitive behavioural therapy (CBT) helps to change a wide range of behaviours (Beck, 1976; Ellis, 1969), including risky sexual attitudes associated with recidivism (Hanson & Morton-Bourgon, 2004; Schmucker & Lösel, 2008). The theory behind it is that reactions to social stimuli are based mostly on a personal interpretation and processing of interactions, but, when the person's evaluation of the interaction is skewed, the person develops maladaptive mindsets. A positively adaptive mindset would likely lead to pro-social conducts while a maladaptive mindset would most likely lead to anti-social acts (Ellis, 1994). CBT could facilitate a shift from a maladaptive mindset into a positively adaptive mindset, so also transforming anti-social into pro-social behaviours (Beck, 1995; David et al., 2018).

A cognitive behavioural approach is commonly adopted to treat conditions such as depression, anxiety, and stress (Ezegbe et al., 2018, 2019; Nwokeoma et al., 2019; Ogba et al., 2019), but there is some precedent for using it to reduce cognitions associated with sexually harmful (e.g., Friendship et al., 2002; McGuire, 1995) and other violent acts (e.g., Clark, 2010; Dolan, 2009; Little, 2005). Meta-analytic reviews of sex offender management suggest that a CBT-based intervention designed for sex offenders can reduce the level of reoffending behaviours among incarcerated sex offenders (Beaudry et al., 2021; Hanson et al., 2002; Lösel & Schmucker, 2005). Despite confirmation of the effectiveness of CBT-based interventions with violent sex offending attitudes specifically (Lindsay et al., 2007; Ward & Gannon, 2006), identifying and understanding these innate drives to violent sexual desire (Kekes, 1989), studies have generally been in developed countries.

We wanted to find out if such approaches could be as beneficial in developing countries too. Specifically, our aim was to test the effectiveness of such intervention in a Nigerian custodial setting. We hypothesised that the violent

sexual attitudes of adult sexual offenders would be significantly reduced after exposure to a CBT-informed intervention, and the reduction would be sustained.

2 | METHODS

2.1 | Ethics

Ethical approval for this study was granted by the Faculty of Education committee on research ethics, University of Nigeria.

In addition, this study was registered retrospectively at UMIN Clinical Trials Registry (UMIN-CTR) (Trial No.: UMIN000037145).

2.2 | Sample size and inclusion criteria for participants

The sample size was calculated using *GPower* software (Faul et al., 2007); this showed that in order to detect a moderate effect size of 0.5 in the primary outcome (violent sexual attitudes) at 80% power (5% significance, two-tailed), 78 participants would be required (39 per trial arm).

Criteria for inclusion in the study were that the person must have been convicted/awaiting trial and must be in prison for a sexual offence. Adverts for the research were posted by the welfare department in all prison cells. Eighty-eight men in two security prisons in Nsukka semi-urban and Enugu urban areas of Enugu State, Nigeria, volunteered. Five did not meet inclusion criteria; three withdrew when asked to provide full consent and two were lost for other reasons, so the final sample was of 78 men.

2.3 | Measures

The Compulsive Sexual Behaviour Inventory (CSBI-22), modified version (Miner et al., 2007), assesses sexual attitudes along two dimensions—sexual violence (9-items) and sexual control (13-items) (Scanavino et al., 2016). Sample items measuring sexual violence include: *Have you ever hit, kicked, punched, slapped, thrown, choked, restrained or beaten any of your sexual partners?* Samples of controlling sexual attitudes items include: *How often have you developed excuses and reasons to justify your sexual behaviour?*

The self-reported response options range from never (1) to very often (5), thus high scores indicated more problems. The CSBI has sound psychometric properties of validity and reliability (Hook et al., 2010) with an internal consistency of α = 0.87. Miner et al. (2007) reported good values for the subscales too (α = 0.96 for control, and α = 0.88 for violence). In our study, α was 0.83 for the full scale (control: α = 0.82; violence: α = 0.79).

The Hypersexual Behaviour Inventory (HBI; Reid et al., 2011) is a 19-item instrument, with three subscales (control: 8-items, coping: 7-items, and consequence: 4-items) which measures sexual attitudes in terms of emotional distress, inability to control the sexual urge and the associated consequences. A sample item for the control subscale includes "*I engage in sexual activities that I know I will later regret*". A sample item in the coping subscale includes "*Doing something sexual helps me feel less lonely*". Participants indicate their responses on a 5-point Likert scale ranging from 1 (never) to 5 (very often), with a low score indicating minimal problems and a high score high hypersexuality. Studies have confirmed the validity and reliability of the HBI in a variety of cultures; for example, Bőthe et al. (2018) reported α = 0.86 for coping, 0.82 for control, and 0.75 for consequence. Other studies reported that the HBI is a reliable tool (Klein et al., 2014; Reid et al., 2011; Yeagley et al., 2014) and confirmed its strong concurrent, criterion, discriminant, and clinical validity (Bagozzi & Yi, 1988; Montgomery-Graham, 2016; Reid et al., 2012; Yeagley et al., 2014). In our study, Chronbach's α = 0.84.

The African Youth Psychosocial Assessment Instrument (APAI) (Betancourt, Bass, et al., 2009; Betancourt, Speelman, et al., 2009) measures a range of 40 signs and symptoms of mental disorder (18 items depression/anxiety; 10 items hostility; 5 items pro-social behaviours; 3 items somatic complaints without medical cause). Sample items include "I do not sleep at night" (depression), "I fight" (conduct problems), and "I have pain all over my body" (somatic

complaints). Four psychotic symptoms were added subsequently (Amone-P'Olak et al., 2015); 1. "sometimes I hear voices or see things other people do not see"; 2. "sometimes I feel that I have special powers"; 3. "sometimes I think that people are listening to my thoughts or watching me when I am alone"; 4. "sometimes I think that people are against me"). Items are scored on a four-point Likert scale (0 = never, 1 = rarely, 2 = sometimes, 3 = always) with a higher score, thus, indicating more troublesome symptoms. The API has good psychometric properties (depression/conduct/anxiety hostility α = 72; pro-social behaviours α = 76; and somatic complaints without medical cause α = 80 in our study; psychosis 0.71, α = 0.74 in our study).

2.4 | Procedure

All signed informed consent. Five of the 88 recruits did not meet inclusion criteria, three refused consent and two left for other reasons. Researchers trained in the use of the tools then administered the HBI, CSBI-22 and APAI to the participants, in private, to establish baseline scores.

As shown in Figure 1, a simple random allocation sequence by Saghaei (2004) was used to assign the 78 participants to intervention/treatment as usual comparison groups. Participants from Nsukka and Enugu prisons respectively were invited to choose a yellow or a green card, without knowing precisely what these represented. Those who chose green were assigned to the treatment group to be in Nsukka treatment venue and those choosing yellow to the treatment as usual comparison group in Enugu prison and, subject to continuing consent, were moved between

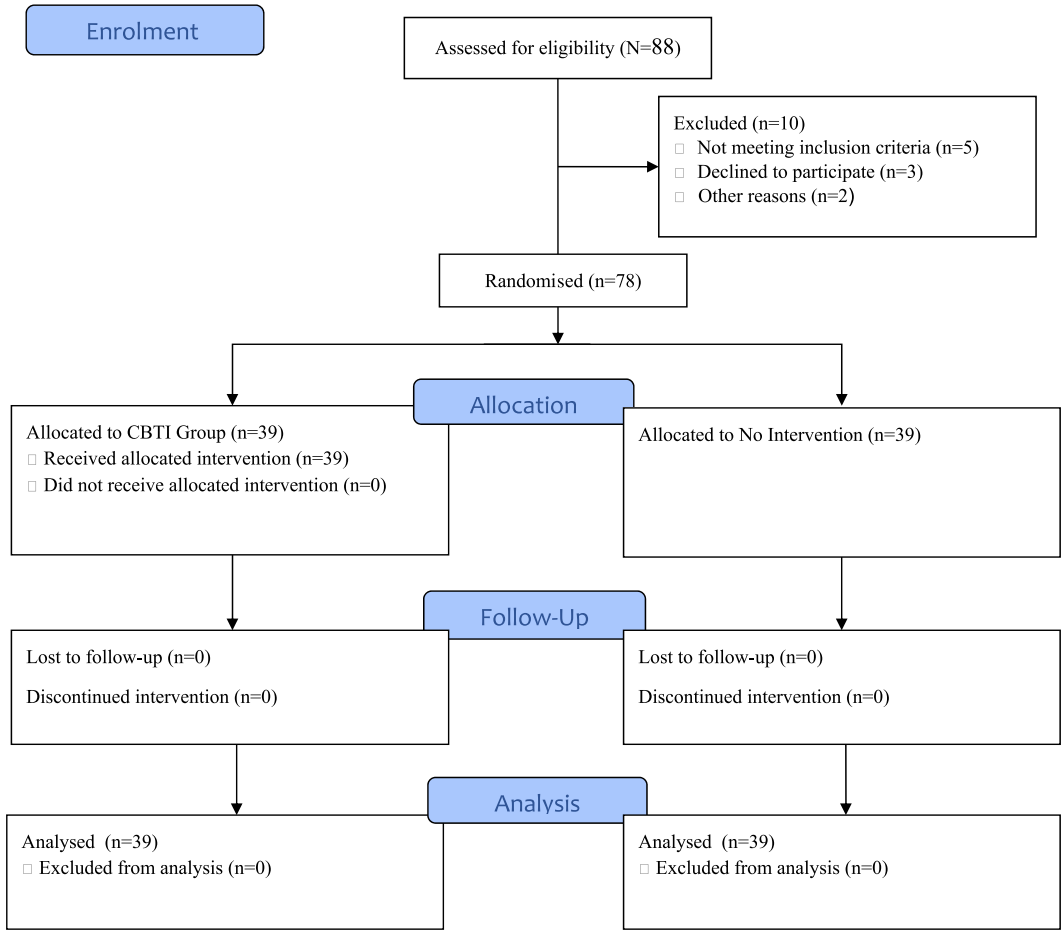

FIGURE 1 Selection and flow of participants in the sexual attitude change trial: the CONSORT flow diagram

the prisons as necessary for the intervention trial. We could not, as hoped, provide the cognitive behaviourally informed intervention to waiting list participants after completion of the trial. The two prisons are similar in terms of their management structure and day to day operating procedures, according to Nigerian prison policy. Enugu prison houses more prisoners than Nsukka prison and is located in an urban area while the site of Nsukka prison would best be described as semi-urban.

Prior to the start of the treatment sessions, the researchers made further assurances to the participants that anything discussed during treatment sessions would be wholly confidential to those sessions. The researchers further established rules and regulations to govern the sessions. It was, for example, a rule that any participant must not disclose the personal information of another outside the session. Participants were given biscuits, soft drinks, and packed food on completion of the intervention. All completed the interventions and ratings.

2.5 | The intervention

The treatment group received a 12-session cognitive behaviourally informed intervention (CBII) delivered by cognitive behavioural therapists once weekly. Each session lasted 90 min. The sessions were manualised.

Sessions 1–2 include an introduction, intervention goals, rules, an explanation of violent sexual attitudes, and consequences. Sessions 3 and 4 focused on the static, stable, and acute risk factors of violent sexual attitudes. Sessions 5 and 6 focused on self-efficacy, goal-setting ability, decision-making ability, cognitive deficit, morality, and pro-social skills. Sessions 7–10 include training on promoting self-control, rational thinking, the consequences of actions, and the ability to make pro-social choices. Sessions 11 and 12 include a recap of all sessions, including revision exercises, the ability to cope with cognitive and emotional scenarios, and the conclusion of the intervention.

During this treatment, basic cognitive core beliefs, such as a negative view of oneself ("my life has become useless since the day I forcefully had sex with my girlfriend"), the future ("being in prison because of my inability to control my sexual urge has made me lose hope of becoming a great person in the future") and the world ("my family members and friends hate me because of my sexual attitudes"), were targeted. Participants were encouraged to log all desirable behavioural changes while changing targeted dysfunctional core beliefs (Fenn & Byrne, 2013; Padesky, 1994); for example, "I can change my perception about sex to functional schema." In addition, the therapists asked the participants to describe any issues that could affect the targeted functional assumptions. Counselling psychologists (cognitive behavioural therapists) assisted participants in prioritising life goals to prevent recidivism. Exercises outside the groups (homework) were assigned to participants to aid the goal-setting process. Techniques used during the sessions include self-management, cognitive modification, mood evaluation, problem-solving ability, cognitive contestation, and guided discovery. For example, the therapists used guided discovery to understand the participants' views on sex and to assist them towards accurate views underlying their assumptions, which they then replaced with more healthy perspectives. All interventions for the active trial arm were in the prison hall.

'Treatment as usual' (TAU) consisted of access to all the usual prison facilities, including the standard counselling programme, the latter only for only the comparison group. This programme is a 12-week support intervention lasting for 12 sessions, an hour per session, designed to deal with emotional distress often experienced by prisoners.

The therapists and prisoners all worked in English as it is the official language in Nigeria.

The cognitive behavioural intervention was delivered to all 39 participants together in the prison hall, where only participants and therapists had access during the group; the prisoners were brought to the hall by prison welfare officers.

On completion of the groups, and after a similar period without the groups, the CBT-group and comparison groups were interviewed in private in the treatment centre to complete all the evaluation schedules a second time. A third assessment, under the same conditions, was completed after 3 months.

2.6 | Therapists

The intervention was delivered by four therapists, all university employees who had been certified to practice as cognitive behavioural therapists by the University of Nigeria after appropriate training, including counselling and a

PhD in cognitive-behavioural approaches. On physical safety grounds they were encouraged to liaise with the prison welfare officer(s), who also offered them some emotional support as this was the first time these therapists had been in a prison.

2.7 | Treatment integrity

We were mindful of the risk of inconsistent treatment implementation in this study. Three members of the research team monitored this, overseeing both the therapists' activities and tracking the participants' compliance, essentially acting as external auditors. They also ensured that the little incentives for the participants were properly distributed to them.

2.8 | Data analysis

Baseline demographic data checks for randomisation balance and drop out bias were completed before outcome analyses. All analyses followed intention to treat (ITT) principles with participants remaining in their allocated group irrespective of intervention receipt. Analysis of covariance (ANCOVA) was used to test for change in scales scores. ANCOVA was used to determine the main and interaction effects of the cognitive behaviourally informed intervention, with the dependent variable being violent sexual attitudes and the independent variables being intervention yes/no and any variables that distinguished) while also monitoring the effects of other continuous variables that co-variate with the dependent. The partial Eta squared value was used to report effect size. This statistic was chosen because it is an inferential statistic that allows researchers to test their study hypothesis.

3 | RESULTS

3.1 | General description of the sample

Figure 1 confirms that of the 78 men included, all completed all stages of the trial.

There were no significant differences between intervention and control groups in age, educational level or region of origin; proportions were also similar with respect to sexual preference—with about half of both groups identifying as homosexual or bisexual. They did not differ in nature of sexual offending, having a prior criminal history or length of current incarceration. It was very unusual for any of the men to be in a stable partnership (see Table 1).

Table 2 confirms that the intervention and control group had similar baseline scores on both the scale reflecting compulsive sexual behaviour and the scale reflecting hypersexuality. Immediately after completing treatment, however, a substantial reduction in scale scores was evident in the intervention group but there was minimal change in the control group. There were no further significant changes 6 months after that, indicating that the positive change was sustained in the intervention group but there was neither further improvement nor deterioration in the control group.

Table 3 confirms the effects of the intervention within and between participants, using repeated analyses of variance. Figures 2 and 3 illustrate this graphically, also showing that there was no further significant change in either group over the following 6 months.

Table 4 shows the post hoc pairwise analyses of the scale score data, confirming significant change between times 1 and 2 and 1 and 3, but not 2 and 3 in the treatment group.

Table 5 shows that there were significant changes in other psychological outcomes in the intervention group compared to the treatment as usual group, including depressive/anxiety symptoms, conduct problems, somatic complaints, and psychotic symptoms. As the measures were all taken at the same time, we cannot determine whether changes in these measures preceded or followed changes in sexual attitudes.

4 | DISCUSSION

In a randomised, controlled trial, we found that self-rated sexual attitudes changed significantly immediately after a cognitive behaviourally informed intervention according to scores on two well established assessment scales. These

TABLE 1 Demographic characteristics of the participants

Demographics	Treatment group; *n* (%)	Control group; *n* (%)	χ2	*p*
Sexual preference				
Heterosexual	21 (53.8)	19 (48.7)	0.206	0.902
Homosexual	8 (20.5)	9 (23.1)		
Bisexual	10 (25.6)	11 (28.2)		
Criminal history				
Once	19 (48.7)	20 (51.3)	0.278	0.870
Twice	11 (28.2)	9 (23.1)		
Thrice	9 (23.1)	10 (25.6)		
Sexual offence Behaviour				
Raping	8 (20.5)	9 (23.1)	0.220	0.974
Child sexual abuse	11 (28.2)	10 (25.6)		
Force penetration of female genital organ	7 (17.9)	6 (15.4)		
Sexual assault	13 (33.3)	14 (35.9)		
Length of incarceration				
Six months	17 (43.6)	18 (46.2)	1.524	0.677
One year	7 (17.9)	8 (20.5)		
Two years	9 (23.1)	5 (12.8)		
Three years	6 (15.4)	8 (20.5)		
State of origin				
Abia	7 (17.9)	9 (23.1)	0.990	0.911
Akwa-Ibom	8 (15.4)	5 (12.8)		
Enugu	10 (25.6)	7 (17.9)		
Edo	9 (23.1)	10 (25.6)		
Benue	7 (17.9)	8 (20.5)		
Marital status				
Single	14 (35.9)	13 (35.9)	0.159	0.984
Married	4 (10.3)	5 (12.8)		
Divorced	11 (28.2)	10 (25.6)		
Separated	10 (25.6)	12 (25.6)		
Qualification				
West African Examination Council	17 (33.3)	19 (48.7)	2.307	0.511
Nigeria Certificate in Education	12 (30.8)	10 (25.6)		
Bachelor's degree	10 (25.6)	6 (15.4)		
Master's degree	4 (10.3)	4 (10.3)		
			t	**Sig**
Mean age of participants	31.79±(10.57)	32.67±(9.67)	0.375	0.709

Note: *n* = Sample (78); % = percentage; χ2 = Chi-square; *p* = probability value.

changes were sustained over 6 months, while there was no such change in a control group of similar prisoners serving a sentence elsewhere in Nigeria.

Other studies have shown benefits from CBT-informed interventions among sex offenders. Lipsey et al.'s (2007), for example, concluded that CBT has benefits for the rehabilitation of offenders, but our study suggests a possible

TABLE 2 Mean analysis of the violent sexual attitude ratings of the experimental and control groups at three different times

			Pretest		Posttest		Follow-up	
Treatment	**Measure**	***n***	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Experimental	CSBI	39	85.87	9.33	32.00	5.00	31.18	5.35
Control		39	86.28	9.32	83.69	11.47	83.03	12.02
Experimental	HBI	39	78.51	5.59	28.31	5.97	23.67	3.44
Control		39	78.36	5.91	65.51	10.73	61.87	10.17

Abbreviations: CSBI, Compulsive Sexual Behaviour Inventory; HBI, Hypersexual Behaviour Inventory; SD, Standard Deviation.

TABLE 3 Mixed design repeated analysis of variance for the tests of within-subjects effects and between-subjects effects of the intervention

Measure	**Source**		**Type III Sum of squares**	***df***	**Mean square**	***F***	**Sig.**	**Partial eta squared**
Within-subjects effect								
CSBI	Time	Sphericity Assumed	42,563.111	2	21,281.556	783.373	0.000	0.912
	Time × Treatment	Sphericity Assumed	34,290.906	2	17,145.453	631.124	0.000	0.893
	Error (Time)	Sphericity Assumed	4129.316	152	27.167			
Between-subjects effect								
CSBI	Intercept		1,050,694.017	1	1,050,694.017	5323.528	0.000	0.986
	Treatment		70,234.684	1	70,234.684	355.857	0.000	0.824
	Error		14,999.966	76	197.368			
Within-subjects effect								
HBI	Time	Sphericity Assumed	59,434.419	2	29,717.209	1089.411	0.000	0.935
	Time × Treatment	Sphericity Assumed	18,691.291	2	9345.645	342.605	0.000	0.818
	Error (Time)	Sphericity Assumed	4146.291	152	27.278			
Between-subjects effect								
HBI	Intercept		734,384.107	1	734,384.107	6588.305	0.000	0.989
	Treatment		36,913.338	1	36,913.338	331.157	0.000	0.813
	Error		8471.556	76	111.468			

Abbreviations: CSBI, Compulsive Sexual Behaviour Inventory; HBI, Hypersexual Behaviour Inventory; η^2, effect size.

explanation in that there were significant differences in measured thinking styles relating to sexual behaviours in the treated group, suggesting relevant changes in attitudes. This has some similarity to the findings of Maletzky and Steinhauser (2002) and Prentky and Burgess (1990) who reported on attitude change among sex offenders, while others have suggested its importance with respect to offending more generally (Gendreau et al., 2006; Gökbayrak & Davis, 2022). Though there was attitudinal change across the studies, there seems to be a difference from the systematic study conducted by Maletsky and Steinhauser, during which participants terminated treatment sessions prematurely. Possibly, the difference could be due to time or generational gaps as those studies reviewed by Maletsky

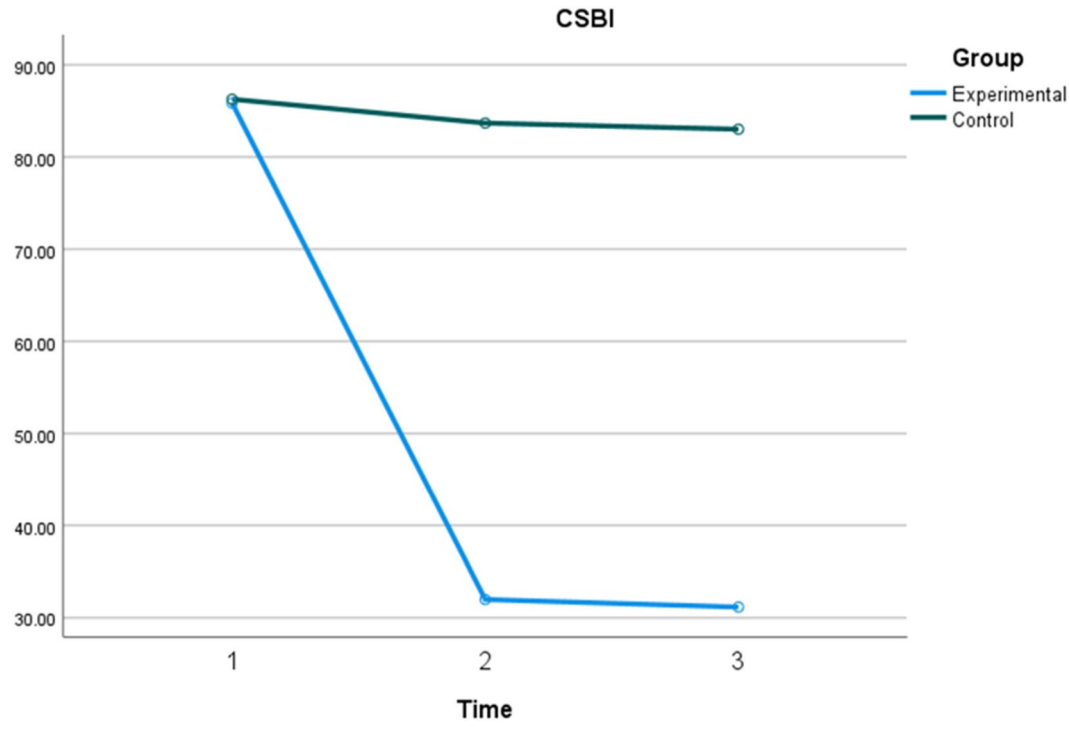

FIGURE 2 Interaction of time and treatment effect as measured by the Compulsive Sexual Behaviour Inventory (CSBI-22)

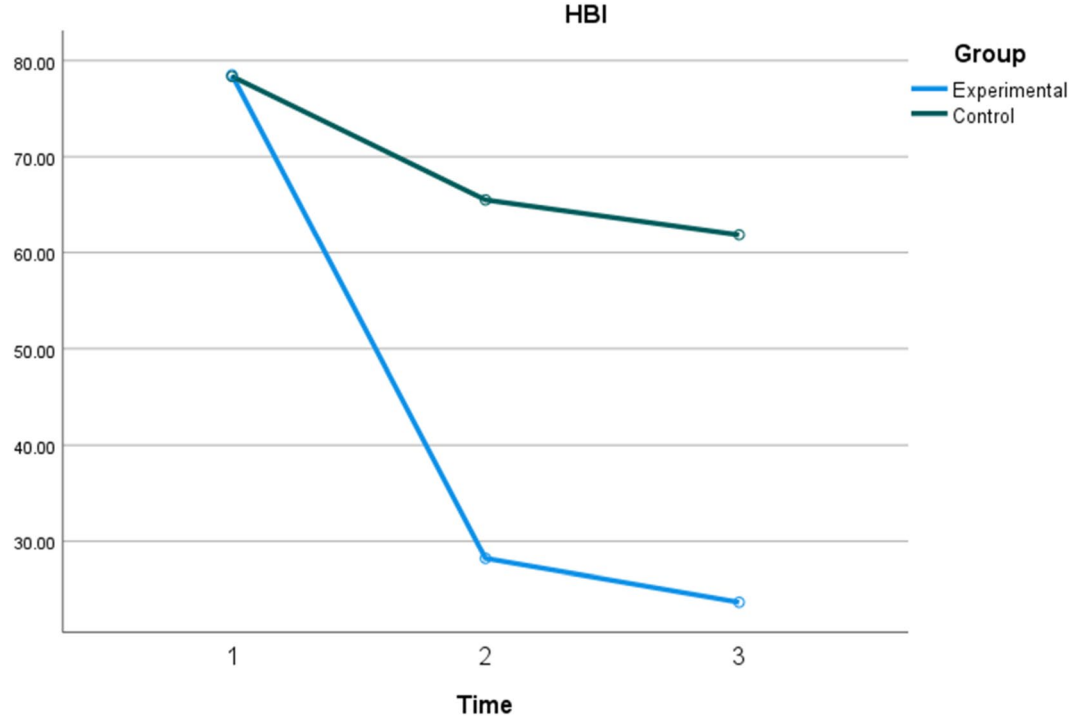

FIGURE 3 Interaction of time and treatment effect as measured by the Hypersexual Behaviour Inventory (HBI)

TABLE 4 Post Hoc Pair-wise Comparisons for the significant difference across the three times

						95% confidence interval for difference	
Measure	**(I) Time**	**(J) Time**	**Mean difference (I-J)**	**Std. error**	**Sig.**	**Lower bound**	**Upper bound**
CSBI	1	2	28.231	0.981	0.000	25.829	30.633
		3	28.974	1.029	0.000	26.454	31.494
	2	1	−28.231	0.981	0.000	−30.633	−25.829
		3	0.744	0.260	0.016	0.107	1.380
	3	1	−28.974	1.029	0.000	−31.494	−26.454
		2	−0.744	0.260	0.016	−1.380	−0.107
HBI	1	2	31.577	0.984	0.000	29.168	33.986
		3	35.667	0.868	0.000	33.541	37.793
	2	1	−31.577	0.984	0.000	−33.986	−29.168
		3	4.090	0.613	0.000	2.589	5.590
	3	1	−35.667	0.868	0.000	−37.793	−33.541
		2	−4.090	0.613	0.000	−5.590	−2.589

Abbreviations: CSBI, Compulsive Sexual Behaviour Inventory; HBI, Hypersexual Behaviour Inventory.

TABLE 5 Regression analysis of psychological outcomes of adult sexual offenders with violent sexual attitudes after exposure to cognitive-behavioural therapy intervention

Psychological outcome	***R***	R^2	***df***	***F***	***p***
Depression/anxiety	−0.907	0.822	37	170.792	0.000
Conduct problems	−0.892	0.795	37	143.413	0.000
Somatic complaints	−0.917	0.842	37	176.857	0.000
Psychotic symptoms	−0.782	0.611	37	131.586	0.000

and Steinhauser were conducted over 40 years ago. It could also suggest that clinical and non-clinical treatment procedures are becoming entertaining, engaging, and interesting to sustain participants during sessions. It may therefore be that attitudes towards interventions have changed and satisfaction levels increased. It has long been recognised that CBT is effective in changing some illness attitudes (Sari et al., 2022). Meta-analyses have previously shown the effectiveness of CBT in reducing negative attitudes and reoffending among violent offenders and sexual offenders (Beaudry et al., 2021; Dowden & Andrews, 2000; Garrido & Morales, 2007; Henwood et al., 2015; Pearson et al., 2002; Schmucker & Lösel, 2015) and, to this extent, our findings are consistent with prior work. There were differences too, however, especially in intervention emphasis. Earlier studies focused on psychological principles directed at reducing violent attitudes and reoffending, while we gave as much weight to adherence to those psychological treatments. This may, in part, be why we had such a high completion rate.

Perception of sexuality varies across culture, ethnic groups, affiliations, and sub-groups, and each group has a somewhat distinct definition of what is acceptable (DeLamater & Hyde, 1998; Michael et al., 1994). Therefore, attitudes towards sexual behaviours must be considered in a cultural construct (DeLamater & Hyde, 1998; Gagnon & Simon, 1973). With regards to other behavioural disorders, findings from past meta-analyses suggest that cultural adaptations to CBT are more beneficial if adapted to people's cultural orientations (Benish et al., 2011; Huey et al., 2014; Smith et al., 2011) and is likely to be especially true of intimate behaviours. This starts with therapists paying close attention to any areas where there may be cultural biases, allowing for both the dominant culture and the culture of the person having the intervention, if these are different.

More common ground between cultures is that violence and coercion in sexual relationships is unacceptable and, under most circumstances could constitute a criminal offence in developing countries such as Nigeria

and Ghana as anywhere else. Nevertheless, approaches to changing such attitudes may have to be modified themselves for maximum impact. To date, sexual offender programmes have been developed mainly in North America and Europe, where prevailing attitudes to sexual orientation are very different from those in Nigeria. Mental health counsellors, criminologists, penologists, psychologists, social workers and other rehabilitation professionals will have to take account of this when using the CBT approach in prisons (Amaro et al., 2001; Bonilla & Porter, 1990). Culture play a vital role in conceptualising psychological interventions of all kinds, for distress and mental health problems (Eisler & Hersen, 2000; Sue & Sue, 2008), so sexual attitudes and orientation (Meyer, 2003) and migration processes (Bhugra, et al., 2011) may increase vulnerability, and stigmatised groups may be exposed to a higher number of risk factors such as perceived discrimination, social exclusion, and victimisation (Sue et al., 2009).

4.1 | Limitations

The main limitation of our study was that the treatment group and control group men were held in different prisons for the duration of the trial. A full process evaluation (see Moore et al., 2015), was largely beyond our resources. Thus, although being in separate prisons meant that there was no intervention contamination through sharing material between intervention and control groups, the experience of 'treatment as usual'—that is the basic regime and any additional work such as education—may have differed between the prisons and we could not measure that systematically. Given the nature of the measured differences before and after the intervention, however, it seems unlikely that regime difference was a substantial contaminant. We maximised intervention fidelity by manualising the intervention and delivering the sessions in large groups. We checked that neither the men in the treatment nor in the control group had other relevant interventions during the trial period. Our intervention was rather brief (18 h) when 200–300 h of programmed work are generally recommended for sex offenders, however, this may prove to be a strength if a change of attitude can in future be clearly linked to a reduction in reoffending among such men; shorter programmes may be an advantage and this should be explored further. The Compulsive Sexual Behaviour Inventory seems not to have been validated for measuring change, although we were able to detect change using it. The work described here will have an impact only in the context of a larger therapy programme. Another possible limitation of the study is the small sample size used.

5 | CONCLUSION

This randomised controlled trial demonstrates that a CBT-based intervention is effective in changing sexual attitudes of men serving a prison sentence for sexual offending in Nigeria. This adds to existing knowledge in the field because prior studies have been from high income countries, where interventions are generally delivered in more privacy and at greater length. Further, not only did attitudes change as tested immediately after the intervention, but the changes were sustained. Given that our study had to be limited to change in sexual attitudes as the main outcome, future research must focus on the extent to which such change maps on to changes in interpersonal behaviour among such men. If these findings can be extended in this way and replicated, this could pave the way for more cost-efficient interventions in higher income countries too.

DATA AVAILABILITY STATEMENT

The data associated with research would be released on reasonable demand.

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