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Associations between schizotypal traits and antisocial behaviours in a sub-Saharan sample

Charles T. Orjiakor[a,b], Andy Watt[c], Steven K. Iorfa[a], Desmond U. Onu[a,*], Angela I. Okonkwo[a]

[a] Department of Psychology, University of Nigeria, Nsukka, Nigeria
[b] Health Policy Research Group, Department of Pharmacology and Therapeutics, College of Medicine, University of Nigeria Enugu-Campus, Enugu, Nigeria
[c] Department of Applied Psychology, Cardiff Metropolitan University, United Kingdom

ABSTRACT

Schizophrenic symptoms have often been associated with antisocial behaviours (ASBs). Most studies have focused on violence. The association between schizophrenia and violence is often confounded by socio demographic characteristics of patients. Overemphasis on diagnosis, rather than traits, and the traditional focus on violence may have obscured associations between psychotic features and antisocial behaviour. In this study, an analogue sample (n = 604, females = 54.4%, mean age = 21.46, SD = 5.89) completed self-report measures of schizotypy and antisocial behaviours. The aim was to identify the strength of associations between different schizotypal traits/symptoms (unusual experiences, cognitive disorganisation, impulsivity & introvertive anhedonia) and different forms of antisocial behaviour (rule breaking, physical aggression & social aggression). Differential patterns of association between genders were also considered. Traits akin to positive symptoms were more strongly associated with antisocial behaviours. Impulsive non-conformity was associated with rule breaking, physical aggression and social aggression for both males and females whilst unusual experiences traits were associated with physical and social aggression in both males and females but had only a weak (gender-nonspecific) association with rule breaking. Finally, cognitive disorganisation was not associated with any class of ASB for males but was associated with physical and social aggression in females. These specific associations could inform the development of more targeted treatment approaches for specific types of ASBs in males and females.

Introduction

Considerable research attention has been directed to associations between schizophrenia and antisocial behaviours (ASBs). The focus of research has been on violence (see Witt, Van Dorn, & Fazel, 2013 and Fazel, Gulati, Linsell, Geddes, & Grann, 2009 for systematic reviews and meta-analyses), whilst some attention has been directed to arson (Anwar, Långström, Grann, & Fazel, 2009) and sexual offending (Alden, Brennan, Hodgins, & Mednick, 2007; Smith & Taylor, 1999). A wide range of ASBs have been neglected and the behaviour of schizophrenia-diagnosed populations is confounded by multiple factors.

People diagnosed with schizophrenia (as a study population) present challenges for interpretation because they typically present with multiple problems. By the time a person is diagnosed with schizophrenia they will often have been exposed to chronic unemployment, homelessness, substance misuse, criminal justice contact, violent behaviour, violent victimisation or other adverse life experiences (Hodgins & Cote, 1993; Moran & Hodgins, 2004; Tengstrom & Hodgins, 2002; Pedersen, Rasmussen, Elsass, & Hougaard, 2010; Varese et al., 2012).

The practice of clinical diagnosis is also a confounding factor because schizophrenia spectrum disorders are best characterised by varied patterns of impairment across a range of symptom-related traits (Torgersen et al., 2002), collapsing multiple traits into singular diagnoses will inevitably reduce the sensitivity and specificity of any resulting analysis. High levels of comorbidity between antisocial personality, and schizophrenia spectrum disorder complicate confounding further still (Moran & Hodgins, 2004). One way to navigate around these challenges is to consider schizophrenia as an extreme form of variation within a spectrum that has multiple schizotypal trait dimensions and to study continuous variations in relevant trait dimensions within non-diagnosed populations.

Schizotypal traits reflect population-wide liability for schizophrenia (Meehl, 1962; Stefanis et al., 2002). Schizotypal features are characterised by high levels of suspiciousness, magical thinking, perceptual distortions, constricted affect and odd or eccentric behaviour and speech (Raine, 1991). Additional features identified by DSM-V include odd patterns of beliefs, thinking and speech, along with a lack of close friends and excessive social anxiety (APA, 2013). Elevated levels of schizotypal traits can be a precursor for the later diagnosis of schizophrenia and other schizophrenia spectrum disorders (Dominguez, Wichers, Lieb, Wittchen, & van Os, 2011).

Researchers have employed analogue sampling in order to explore psychological impairment in schizophrenia. Analogue sampling relies

* Corresponding author.
E-mail address: desmond.onu@unn.edu.ng (D.U. Onu).

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on the fact that schizotypal traits may be continuously distributed in the population as a whole and may not be confined to people diagnosed with a psychiatric disorder. Previous research have employed analogous sampling strategy in recruiting healthy volunteers with high levels of schizotypal traits in order to explore primary impairment in schizophrenia without confounding by complex clinical presentation (e.g. Haselgrove & Evans, 2010; van Assche & Giersch, 2012). Hence schizotypy is most frequently construed as a continuous schizophrenia spectrum (Claridge, 1997; Dembińska-Krajewska & Rybakowski, 2014) that spans from the extreme of no schizotypal traits through normal sub-clinical variation, to schizotypal personality disorder, and ending with schizophrenic presentation with psychotic disorder (Cochrane, Petch, & Pickering, 2010). In keeping with the dimensional trait approach, assessment tools such as the *Oxford-Liverpool Inventory of Feelings and Experiences* (O-LIFE; Mason & Claridge, 2006; Mason, Claridge, & Jackson, 1995), *Oviedo Schizotypy Assessment Questionnaire* (ESQUIZO-Q; Fonseca-Pedrero, Muñiz, Lemos-Giráldez, Paino, & Villazón-García, 2010) and *Schizotypal Personality Questionnaire* (SPQ, Raine, 1991) have been developed to assess psychotic experiences/psychosis proneness in both clinical and non-clinical samples.

Schizophrenia and schizotypal personality have a complex presentation and are composed of multiple symptom clusters and trait dimensions (respectively) yet the literature exploring associations between schizophrenia spectrum disorder and crime has tended to treat schizophrenia as unitary with comparisons typically being made between rates of offending in groups that have a diagnosis versus those that do not. Relatively little attention has been paid to specific associations between symptom clusters and/or personality trait dimensions with antisocial or dissocial behaviours that extend beyond violence. Despite this omission, some studies have linked schizophrenia spectrum disorders with dissocial character traits and behaviours such as deceitfulness, aggression, and rule breaking (Moran & Hodgins, 2004; Robins, 1993). However, studies have not examined which of the features of the schizophrenia spectrum are most strongly associated with different dissocial behaviours.

Antisocial behaviours (ASBs) are heterogeneous in much the same ways as are schizotypal traits dimensions. As noted earlier the literature considering ASBs and schizophrenia has focused on violence and has neglected a wide range of ASBs. ASBs have also been categorised into subtypes (Burt & Donellan, 2009). Further it reasonable to suppose that each person's propensity for different subtypes of ASB will be determined (to some extent) by the presence of specific schizotypal personality traits. It is important to note that different forms of ASBs are considered separately as it has been suggested that each may respond to different intervention approaches (Kim, Gilman, & Hawkins, 2015).

Burt and Donellan (2009) developed the Sub-types of Antisocial Behaviour Questionnaire (STAB) in order to provide a framework for differentiating ASB subtypes. This tool is derived from DSM-IV (APA) description for Conduct and Antisocial Personality Disorders. The STAB identifies 3 dimensions of physical aggression, social aggression and rule breaking. There is also some evidence that specific relationships can be observed between personality traits and ASB subtypes. For instance, whilst emotional dysfunction has been linked to more to physical aggression (Burt & Donnelan, 2008; Burt & Larson, 2007), impulsivity has been found to be related more to rule breaking (DeMarte, 2008).

Convergent lines of evidence suggest strong links between schizotypy and ASBs. Dinn, Harris, Aycicegi, Greene, and Andover (2002) found that positive schizotypy was positively related to impulsivity and that individuals with higher positive schizotypy had higher antisocial personality scores compared to those with low and medium positive schizotypy scores. Ragsdale, Mitchell, Cassisi, and Bedwell (2013) found that disturbance in the cognitive-perceptual domain of schizotypy was related to aggressive attitudes and physical aggression, not verbal aggression. Others (e.g. Mason & Claridge, 2006; Raine, 1991) suggested that positive schizotypal traits are linked to excessive and unstable emotions. Fonseca-Pedrero, Lemos-Giraldez, Paino, and Muniz (2011) examined schizotypal and emotional-behavioural problems in a non-clinical adolescent sample and found that positive schizotypy was related to conduct/hyperactivity problems as well as antisocial personality traits. Despite these convergent lines of evidence we did not find studies exploring specific associations between schizotypal trait dimensions and specific forms of dissocial behaviour. Examining pathway relations between the dimensions of schizotypy and ASBs will improve understanding regarding schizotypal features that trigger specific patterns of ASBs and will thus inform treatments and other interventions. Krakowski, Czobor, and Chou (1999) and Stompe, Ortwein-Swoboda, and Schanda (2004) found that positive symptoms of schizophrenia characterised more violent patients. Kawkoski et al. suggested that identifying symptoms associated with different forms of violence has important predictive and differential treatment implication in violent behaviour.

Most research mistakenly treat antisocial and schizophrenia-spectrum characteristics as though they are composite/one-dimensional in nature. As an alternative, we highlight that both schizotypy and ASBs are in fact multi-dimensional. We therefore suppose that schizoptypal trait dimensions may have informative specific associations with subtypes of antisocial behaviour. The need for a multi-dimensional consideration in studying schizophrenic traits especially in non-clinical population has been highlighted elsewhere (Granger, Moran, Buckley, & Haselgrove, 2016). In this study we aim to use path analysis to determine how schizotypal trait dimensions are linked to a range of ASBs using the STAB in a sub-Saharan, non-clinical sample of young adults. We hypothesise that the different trait dimensions of schizotypy will be differentially associated with different dimensions of ASB. One additional consideration was the different reported prevalence rates for ASBs in men and women (Alegria et al., 2013; Compton, Conway, Stinson, Colliver, & Grant, 2005). We therefore also examined gender differences in the associations between schizotypal dimensions and ASB dimensions.

Molnar, Buka, and Kesseler (2001) report that men and women show different patterns of psychiatric morbidity associated with early adverse experiences. Childhood sexual abuse (CSA) was associated with more diffuse patterns of psychiatric diagnoses in women than in men. For women CSA was associated with diagnoses for a wide range of mood disorders, anxiety disorders and substance disorders, whilst for men CSA was associated with a single anxiety disorder (Posttraumatic stress disorder) and substance disorder diagnoses only. The psychiatric impact of early childhood experiences differs between sexes and it is reasonable to suppose that these differences are mediated by sex-specific differences in personality development. Just as the sexes differ in their response to early adversity it is reasonable also to suppose that antisocial behavioural correlates of schizotypal personality should also be mediated by sex. For this reason, data was also grouped according to gender and path analyses were conducted across the groups for the males and females in the current sample, different patterns of association are anticipated between males and females.

Method

Participants

Participants were 650 undergraduate students from 7 randomly selected faculties in two federal universities in South-Eastern Nigeria. They were aged between 15 and 32 (M = 21.46, SD = 2.89). Most of the participants were females (54.4%), single (91%) and resided in urban areas (60%). Participants were approached and informed of the study after class sessions and consenting volunteers participated in the research exercise after completing consent forms. Participants that indicated having had a psychiatric history (n = 46) were identified and removed from the dataset.

Instruments

Subtypes of antisocial behaviour scale

The Subtypes of Antisocial Behaviour (STAB, Burt & Donellan, 2009) is a 32-item questionnaire developed to assess 3 dimensions of antisocial behaviours of physical aggression, rule breaking and social aggression. The physical aggression subscale measures overt aggressive behaviour that can cause physical harm to others; the social aggression subscale measures behaviour such as gossiping, ostracism which can be expressed either covertly or overtly whilst the rule breaking subscale taps into antisocial behaviours such as vandalism, theft, truancy and drug abuse (Burt & Donellan, 2009). The scale has strong psychometric properties shown by the global internal consistency ($\alpha = 0.82$) and alphas of 0.85, 0.86, and 0.87 for the physical aggression, social aggression, and rule breaking subscales.

Oxford-Liverpool Inventory of Feelings and Experiences

Oxford-Liverpool Inventory of Feelings and Experiences (*short form*) (O-LIFE, Mason, Linney & Claridge, 2005) is advanced as a measure of schizotypy. Originally, the O-LIFE contained 104 items reflecting 4 dimensions, however, the present short form of the O-LIFE contains 54 items which still retain the original dimensions. The dimensions include: *Unusual experiences* (*UnEx*), reflecting a tendency to experience unusual cognitive and perceptual sensations or think of things as magically inspired; *cognitive disorganisation* (*CogDis*), indicating the display of unconventional patterns of thinking and linking of ideas. *Introvertive anhedonia* (*IntAn*), an inclination towards a blunted affect and having minimal pleasure from relating with others or physical pleasure; *Impulsive Nonconformity* (*ImpNon*) indicates a tendency to not follow social norms and behave in an erratic noncompliant manner especially in reference to the norms of one's society. It usually reflects a lack of self-control. According to the authors, the O-LIFE is originally scored on a dichotomous scale (1-Yes, 0-No), but as we consider schizotypal traits to run on a continuum, responses were structured (with the approval of the original author Oliver Mason) on a continuous Likert scale (of 1-Never to 5-All the time). Higher scores on the scale suggest more schizotypal traits. The O-LIFE has been and is increasingly deployed across different countries and cultures in studying the schizotypal traits. The current study obtained alpha coefficients of 0.87 for all the items on the O-LIFE-short form. Also alphas of 0.72, 0.70, 0.63, and 0.78 were obtained for the UnEx, CogDis, IntAn and ImpNon subscales respectively.

Procedure

Ethical approval was given by the ethics committee of the Department of Psychology, University of Nigeria. Undergraduates from across 2 tertiary institutions in South Eastern Nigeria were approached in their classrooms and solicited to participate in the study. Information on the consent form stated and assured participants of confidentiality and freedom to withdraw without penalty. They then completed the O-LIFE, and the STAB and a demographic section exploring person characteristics and history of mental illness (including visits to spiritual healers - a practice common place for persons having mental health issues in the region). Access was facilitated most times by course tutors with whom arrangement had been made earlier to gain access to the students at the end of classes. Participants were not offered any form of reinforcements. They were also debriefed at the end of the exercise.

Data analysis

Comparisons were made for gender differences in schizotypy and ASB scores. Bivariate correlation was first computed, examining relationships between the subscales of OLIFE and the STAB (as shown in Table 1) for the sample as whole. This was followed by more detailed and specific path analysis conducted for the sample as a whole and for the 2 sexes separately to determine the extent to which scores on the subscales of the STAB could be predicted from scores on the subscales of the OLIFE. SPSS AMOS version 22 was utilised in the analysis. A conventional alpha ($p < .05$) was set for all analyses.

Results

Mean scores for males and females did not differ on composite scores for the O-LIFE ($t = 0.91$, $p = .21$) or the STAB ($t = 0.96$, $p = .09$). However, males on average scored higher on the rule breaking dimension of the STAB ($t = 4.03$, $p < .001$) whilst females scored higher on both the cognitive disorganisation ($t = 2.84$, $p = .005$) and unusual experiences ($t = 2.10$, $p = .037$) subscales of the O-LIFE.

Results of the bivariate correlation showed that the composite score of the O-LIFE was significantly related to the composite score of the STAB ($r = 0.48$, $p < .001$) as well as the three dimensions of the STAB rule breaking ($r = 0.27$, $p < .001$), physical aggression ($r = 0.40$, $p < .001$), and social aggression ($r = 0.39$, $p < .001$). Results for the correlation did not reveal results suggestive of multicollinearity between the subscales of the O-LIFE and the STAB (variance inflation factor [VIF] all < 2). This suggests schizotypal traits to be distinct from antisocial characteristics.

We built a regression model predicting composite ASB from the subscales of the OLIFE. Table 2 shows that in the first model, control variables (gender and age) were not significant in predicting ASB. Introducing the dimensions of schizotypy, gender turned significant in predicting ASB ($\beta = -0.07$, $p < .05$), suggesting an interaction with the dimensions of schizotypy. Regarding the dimensions of schizotypy, UnEx ($\beta = 0.27$, $p < .001$), CogDis ($\beta = 0.21$, $p < .001$) and ImpNon ($\beta = 0.28$, $p < .001$) significantly and positively predicted $ASB_{composite}$. IntAn did not significantly predict ASB.

Table 3 shows a summary of the path analysis for prediction of the subscales of the O-LIFE from the behavioural sub-types in the STAB. Following the suspected interaction with gender in Table 2, we analysed differently for both genders. Figs. 1 to 3 (Supplemental online) shows the pathways of prediction.

Rule breaking

Results show that for the combined sample, rule breaking was significantly predicted by UnEx ($\beta = 0.10$, $p < .05$), but not when both genders were considered separately. Rule breaking was also significantly associated with impulsive ImpNon ($\beta = 0.31$, $p < .001$); this association was significant for both males and females but it was stronger for females ($\beta = 0.36$, $p < .001$) than for males ($\beta = 0.25$, $p < .001$). CogDis ($p = .42$) and IntAn ($p = .30$) were not significant in predicting rule breaking and this non-significant association was similar for both males and females.

Physical aggression

Physical aggression was significantly associated with UnEx ($\beta = 0.25$, $p < .001$). The prediction was slightly higher for males ($\beta = 0.27$, $p < .001$) than females ($\beta = 0.24$, $p < .001$). CogDis also predicted physical aggression ($\beta = 0.14$, $p < .01$) in the combined model for males and females. However, in terms of separate gender analysis, CogDis significantly predicted physical aggression in females ($\beta = 0.16$, $p < .001$) but not in males. ImpNon ($\beta = 0.21$, $p < .001$) also predicted physical aggression collectively and individually for females ($\beta = 0.24$, $p < .001$) and males ($\beta = 0.18$, $p < .001$). The power of prediction for females was observed to be more than that for males. IntAn did not significantly predict physical aggression, neither collectively nor in group (males and females).

Table 1
Descriptive statistics and bivariate correlation between the subscales of OLIFE and STAB.

	Variables	M	SD	1	2	3	4	5	6	7	8	9
1	OLIFE (composite)	110.38	7.89	–								
2	UnEx	30.79	6.36	0.84***	–							
3	Cog Dis	27.15	6.06	0.84***	0.73***	–						
4	IntAn	27.73	4.03	0.35***	−0.02	0.08	–					
5	ImpCon	24.66	4.52	0.54***	0.22**	0.19**	0.17*	–				
6	STAB (composite)	59.25	7.82	0.48***	0.48***	0.39***	0.01	0.26***	–			
7	Physical aggr	21.09	5.30	0.40***	0.45***	0.33***	−0.03	0.19**	0.79***	–		
8	Social aggr	23.70	6.45	0.39***	0.43***	0.33***	−0.02	0.16*	0.81***	0.50***	–	
9	Rule breaking	14.57	4.49	0.27***	0.17*	0.20**	0.10	0.26***	0.58***	0.23**	0.17*	–

* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 2
Regression model predicting ASB composite from control variables and the dimensions of schizotypy.

Variables	Model 1			Model 2		
	SE	β	*t*	SE	β	*t*
Gender (0 males; 1 females)	1.08	−0.044	−1.03	0.90	−0.07	−2.03*
Age	0.18	−0.06	−1.30	0.15	−0.00	−0.05
Unusual Exper				0.09	0.27	6.20***
Cog Dis				0.09	0.21	4.57***
IntAn				0.11	−0.01	−0.30
Imp NonComf				0.10	0.28	7.90***
R^2		0.01			0.34	
ΔR^2		0.01			0.33**	
ΔF		1.14			73.67***	

* $p < .05$.
** $p < .01$.
*** $p < .001$.

Social aggression

Social aggression was significantly related to UnEx (β = 0.34, $p < .001$), with the association being stronger for males (β = 0.35, $p < .001$) than for females (β = 0.24, $p < .001$). CogDis (β = 0.33, $p < .001$) also predicted social aggression, but was exclusive for females (β = 0.23, $p < .001$) and not males when both genders were compared. ImpNon also collectively predicted social aggression both in a combined model (β = 0.24, $p < .001$) and in the distinct models for females (β = 21, $p < .001$) and males (β = 24, $p < .001$). IntAn did not significantly predict social aggression neither in the collective models for both gender nor for the distinct models. Results consistently showed that IntAn was not associated with all the subscales dimensions of ASBs, even across genders.

Discussion

This study explored how specific schizotypal traits dimensions relate to specific types of ASBs in a large sample of young sub-Saharan adults who lived in the community. Sex differences in patterns of association were also examined. Overall schizotypal traits predicted self-reported engagement in antisocial behaviours; furthermore males and females showed different patterns of association between traits and behaviours. Individual schizotypal trait dimensions were considered separately.

Schizotypy impulsive non-confirmity trait dimension was most strongly associated with all of the different forms of ASBs, this was the case for both males and females. Impulsive nonconformity was a particularly potent predictor of rule breaking in females and for physical aggression in males. These results are consistent with studies that have found impulsivity traits to be strongly related to ASBs (e.g. DeMarte, 2008; Giannotta & Rydell, 2015; Thibodeau, Cicchetti, & Rogosch, 2015). One alternative interpretation may be that the impulsive nonconformity and ASB constructs overlap. Indeed the ImpNon dimension of the OLIFE has been argued to be a measure of psychopathy/criminality than a measure of schizophrenic symptoms (Granger et al., 2016). This may explain its strong prediction of ASBs which often characterise psychopathic or criminal individuals. This alternative interpretation is not supported by the VIF figures and the intercorrelational analysis which did not support the presence of collinearity.

After impulsive nonconformity, unusual experience was the second-most strongly associated trait with ASBs. Unusual experiences predicted rule breaking for the sample as a whole but did not predict rule breaking separately for either of the two sexes. This pattern of results is most likely attributable to increased statistical power haven combined the male and female parts of the sample. The association between unusual experiences and both physical and social aggression was much clearer; unusual experiences predicted both physical and social aggression in both males and females. These observations are wholly consistent with previous studies that have reported heightened risk for assaults in people reporting psychotic-like experiences (Mojtabai,

Table 3
Path analysis results showing the prediction (standardised betas) of the subscales of the OLIFE from the STAB separately for males and females.

Predictor	Rule breaking			Physical aggression			Social aggression		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Un Ex	0.10*	0.11	0.09	0.25***	0.27***	0.24***	0.34***	0.35***	0.24***
CogDis	0.07	0.14	0.07	0.14**	0.12	0.16**	0.33***	0.32	0.23***
IntAn	0.04	0.03	0.03	−0.01	0.01	−0.04	0.22	0.22	−0.06
Imp NonConf	0.31***	0.25***	0.36***	0.21***	0.35***	0.24***	0.24***	0.24***	0.21***

* $p < .05$.
** $p < .01$.
*** $p < .001$.

2006), as well as positive relationships between positive schizotypal traits and physical aggression (Ragsdale et al., 2013). However, the current findings are inconsistent with reports that persons high on positive schizotypy do not differ from people who are low in positive schizotypy in interpersonal relationship skills (Raynal, Goutaudier, Nidetch, & Chabrol, 2016).

Earlier studies have found that positive psychotic symptoms characterised violent patients (Krakowski et al., 1999; Stompe et al., 2004). The current study concurs with extant literature but extends knowledge by considering a predictive model beyond violence, elucidating association patterns with subtypes of ASBs which featured different dimensions of aggression. Our study reveals more closely which positive traits in the schizophrenia spectrum are more associated with specific patterns of antisocial behaviours. Additionally, the current study goes further to extend previous observations of sex differences in the sources and forms of antisocial behaviour (e.g. Moffitt, 2001). It is important to note that the association between unusual experiences traits and ASBs was stronger for males than for females. This implies that unusual experiences may trigger physical aggressive behaviours more in men than in females. Cognitive Disorganisation was next in strength in predicting the dimensions of ASB. Though Cognitive disorganisation did not significantly predict rule breaking, it did predict physical and social aggression for combined scores and for females but not males. Hence cognitive disorganisation which depicts features of thought disorders and disorganised aspects of psychosis may prompt the engagement of youths in social and physical aggression, more so, in females.

Lastly, the negative symptoms of schizotypy depicted in introvertive anhedonia did not predict any of the dimensions of ASBs. Introvertive anhedonia was, unlike the other scales, poorly associated with antisocial behaviours. Introvertive Anhedonia traits include features that would be described as negative symptoms in a clinical schizophrenia diagnosis, they are marked by avoidance of social intimacy and a lack of enjoyment from physical and social sources. The current findings are consistent with other studies that have suggested that introvertive anhedonia is from other schizotypal trait dimensions with distinct behavioural and cognitive correlates (Cella et al., 2013). The absence of volition and emotional arousal seen in anhedonia, may explain the null association with the different dimensions of ASBs. Negative symptoms are often associated with social withdrawal and passiveness and thus such traits may not act out violently (Krakowski et al., 1999).

Implications of the study

To the best of our knowledge, this is the first study that has utilised the OLIFE and STAB in a sub-Saharan sample. Good reliability coefficients concur with studies in other cultures, extending the cross-cultural validity and reliability for both scales. Additionally, our study seems to be the first to consider a dimensional approach to associations between schizotypal characteristics and specific dissocial features. However, as participants were all Nigerians, further studies are needed to ensure a more representative coverage of the sub-Saharan region.

In summary, schizotypal traits are understood to be linked to an array of dissocial traits. This study examined how the different dimensions of schizotypy predicted different forms of antisocial behaviour in young men and women. We found that all dimensions of schizotypy except negative schizotypy had strong links to the different aspects of antisocial behaviour. Interventions targeting prodromal phase of schizophrenia and/or youths who manifest schizotypal traits may be beneficial if they target features of unusual experiences, impulsivity and cognitive disorganisation for addressing risk for ASBs. Having obtained the above results in a sub-clinical youth sample, prodromal stage interventions that address the management of impulsivity, unusual experiences, and cognitive disorganisation should prove useful in reducing ASBs in young adults. Mueser, Deavers, Penn, and Cassisi (2013) reported that intensive community care including home visits, regular assessments, psychoeducation, social skills training and substance use aid are helpful for persons at prodromal stage. Hodgins (2017) recommends that educating patients diagnosed with psychotic disorder on alternative ways to manage interpersonal conflict (by excluding aggression) can be beneficial.

Limitations of the study

The current study is limited in a number of ways. First, some variables known to be contributing to aggressive behaviours such as adverse childhood experiences, substance use, socioeconomic status etc. were not considered in the predictive framework. All analyses were correlational and sampling was cross sectional. Also, measures used in assessing responses were self-report measures which can be prone to impression management, though it was supposed that dissembling would not have contributed to systematic bias.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.apnu.2019.10.001.

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