

## The Prevalence of Borderline Personality Disorder, Antisocial Tendencies, and Aggression among Male and Female Inmates

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**ABSTRACT:** The objective of this study was to identify and compare the prevalence of borderline personality disorder, antisocial tendencies, and aggression between male and female inmates. A cross-sectional study involving inmates at prisons in Peninsular Malaysia was designed. Self-report psychometric instruments were used for data collection followed by descriptive analysis, independent *t*-test, and Pearson's correlation test. The findings showed that the prevalence of borderline personality disorder and antisocial tendencies behaviours are considerably high in both male and female inmates. In addition, both groups indicated high tendencies for four aggression scales. Comparison between the gender groups showed that only antisocial tendencies and physical aggression were significantly different between male and female inmates. Further tests demonstrated significant correlations between all variables, indicated that borderline personality disorder, antisocial tendencies, and aggression were associated. In conclusion, borderline personality disorder, antisocial tendencies, and aggression were highly prevalence among male and female inmates.

**Keywords:** borderline, personality disorder, antisocial tendencies, aggression, inmates

### Introduction

Recent decades have witnessed the growing trend of prison population all over the world [1, 2]. Both male and female inmates are increasing in number although different paces. Although male inmates are still dominating, the percentage of female inmates per prison population also shows an increase. In the United State of America, more than 200% of increase was demonstrated by male inmates in between 1983 to 2004, whereas female inmates increased about 468% within the same period [2]. In England and Wales, an average of 3.7% rate of increase was recorded for the prison population since 1993 [3]. From 2002 to 2012, male prison population increased about 30% compared to 12% of the female counterpart [3]. The similar trend was observed in Australia where an increase of more than 200% among female inmates population within 10 years and the male inmate population increased more than 70% within the same period in some states [4]. Generally, most countries in the world have experienced the same trend of increasing prison population.

The conspicuous trends of the prison population warrant for certain rectification and preventive measures. The alarming situation so far has led to increasing exploration of the

underlying factors for offending in both male and female. Various studies involving prison population have been conducted to acquire their contributing factors for offending [e.g. 5-7]. In addition to specific motive to achieve certain goal in committing the crime, the offending behaviours have also been related to mental and behavioural health issues. One of the most speculated factors is the presence of personality disorders, particularly the Cluster B personality disorders. The Cluster B personality disorders include antisocial, borderline, histrionic, and narcissistic personality disorders [8]. Antisocial personality disorder and borderline personality disorder have often been associated to criminal offending since the two subtypes of personality disorders are strongly associated with human aggressive behaviours [5-7].

Prison studies to explore the prevalence of criminal risk factors, the impacts, and the effective prevention strategies were conducted abroad [e.g. 5, 7]. Only little of such studies have been conducted in Malaysia [e.g. 9, 10] where empirical data relating to risk factors for criminal offending among inmates is scarce. Therefore, this study aimed to provide the necessary data related to criminal offending with the objective to identify and compare the prevalence of borderline personality disorder, antisocial tendencies, and

aggression between male and female inmates. In addition, the associations between the two subtypes of personality disorders and aggression scales were examined.

## Methods

### Participants

A cross-sectional study design was employed in this study. The sampling sources were prisons in Peninsular Malaysia. Four prisons were selected as the sampling frame. Two groups of inmates were targeted: adult male and adult female inmates. The number of inmates was calculated using single-proportion formula with consideration of 20% dropout. Upon completion of data collection, in total 426 inmates involving 227 male and 199 female participated in this study.

The selection of participants was done using purposive-sampling method based on inclusion and exclusion criteria, in addition to the availability of the inmates during data collection. The inclusion criteria were inmates at the selected prison, age of between 21 to 55 years old, and able to read and write on their own. The exclusion criteria included inmates who were sentenced to life imprisonment or on death row, age of less than 21 or more than 55 years old, had prior acute or chronic illness, and had prior diagnosis of mental illness.

### Measures

The *Carlson Psychological Survey – Antisocial Tendency scale* is one of five scales within one psychometric instruments developed by Carlson (1982). This instrument was designed based on the needs of offenders' population. The survey originally consists of 50 items within five scales, of which 16 items are related to antisocial tendency. Each question is accompanied by five different responses. Respondents are required to select one response which is very likely to them. The total score is calculated by summing up the number of response for each item. Higher scores indicated higher tendency for antisocial behaviour. The reliability of the scale was .82 and test-retest reliability was .89, which was validated among offenders' population [11].

The *McLean Screening Instrument for Borderline Personality Disorder* (MSI-BPD) was developed by Zanarini and colleagues (2003), specifically for screening of borderline personality disorder. It contained 10 items about common symptoms of borderline personality disorder, for examples impulsivity,

emotion instability, lack of identity, and unstable relationship. Each item requires respondent to answer 'yes' or 'no'. The total score is obtained by summing up the responses, where one score is given to each 'yes' response and zero score is given to each 'no' response. Higher total score would indicate more symptoms for borderline personality disorder and higher probability to suffer the disorder. Previous studies have found that MSI-BPD yielded sensitivity of .81 and specificity of .85 [12].

The *Aggression Questionnaire* (AQ) was designed by Buss and Perry (1992) for assessing aggressiveness at third-grade reading level. It contained 29 items and used a 5-point Likert scale. The aggression scale consisted of 4 factors: physical aggression, verbal aggression, anger, and hostility. Each scale contains different number of items. The responses range from: 1 = *extremely not like me*, to 5 = *extremely like me*. The total scores are calculated for each scale. Higher scores indicated higher tendency to behave aggressively based on each scale. For example, high physical aggression score indicates high tendency to engage in physically aggressive behaviours. The reliability of AQ was .92 [13].

### Procedure

The research protocol of the current study was reviewed and received approval from the Research Ethics Committee (Human) of Universiti Sains Malaysia. In addition, permission to conduct the study was obtained from Malaysian Prison Department. The researcher visited each prison to conduct the data collection. The distributions of participants at each prison were as followed: Prison A = 100 male, 118 female; Prison B = 40 male, 31 female; Prison C = 65 male, 21 female; Prison D = 22 male, 29 female. The researcher took three days to complete the data collection at Prison A and only one day at the other three prisons.

Prior to the data collection, the selected inmates were assembled in group at a hall or rehabilitation room at the prison. A brief explanation regarding the purpose and procedure of the study was given to the inmates. Each participant was ensured of their confidentiality and right to withdraw from the study at any time during the process. If the inmate agreed to participate in the study, a participant information sheet and a consent form were given to be signed prior to data

collection using a set of the self-report measures.

### Analysis

Data analysis involved statistical software, the SPSS version 19.0. All variables were organized into a set of SPSS data sheet. The analysis started with descriptive statistic to summarise the demographic information and to acquire the percentage and occurrence of each variable. Subsequently, statistical analysis was performed. To compare the prevalence of variables between gender groups, independent *t*-test was run. The mean score of variable was compared between male and female to identify any significant difference. Significant different is indicated by significance (*p*) value which less than .05. Significant different indicates that the mean score between male and female is significantly different, which means that the group with higher mean score had significantly higher tendency for the tested variable.

Association between each variable was assessed using Pearson's correlation test. The correlation test analyses bivariate association where only two variables were tested at a time. Any significant association (*p*-value <

.05) indicate that the two variables are correlated with one another. The correlation coefficient value (*r*) indicates the strength of the association where higher coefficient value demonstrates stronger association.

## Results

### 1. Demographic information

The mean age of male inmates was 33.95 years and 32.4 years for female. Among male inmates, the age group between 30 and 39 years old was the biggest, while the age group between 20 and 29 years old was the highest in number among female inmates. Table 1 shows the demographic information of the inmates. In both gender groups, the majority were Malay. In terms of marital status, the highest number of the male inmates was single as opposed to female inmates who were married. Majority of the inmates in both gender groups had their secondary education. The highest number of inmates in both gender groups had a permanent job prior to incarceration. More than half of male inmates were sentenced to more than one year of incarceration, while half of female inmates were on remand.

Table 1: Demographic information of the participants

		Male (N=227), n (%)	Female (N=199), n (%)
<b>Age group (years old)</b>	20 – 29	75 (33.0)	89 (44.7)
	30 – 39	99 (43.6)	67 (33.7)
	40 – 49	46 (20.3)	31 (15.6)
	50 and above	7 (3.1)	12 (6.0)
<b>Ethnicity</b>	Malay	129 (56.8)	119 (59.8)
	Chinese	43 (18.9)	48 (24.1)
	Indian	46 (20.3)	24 (12.1)
	Others	9 (4.0)	8 (4.0)
<b>Marital status</b>	Single	120 (52.9)	55 (27.6)
	Married	86 (37.9)	79 (39.7)
	Divorcee	20 (8.8)	51 (25.6)
	Widow	1 (.4)	14 (7.0)
<b>Education background</b>	Never been to school	24 (10.6)	21 (10.6)
	Primary	32 (14.1)	33 (16.6)
	Secondary	161 (70.9)	130 (65.3)
	Tertiary	10 (4.4)	15 (7.5)
<b>Employment</b>	Permanent job	103 (45.4)	73 (36.7)
	Always switching job	96 (42.3)	70 (35.2)
	Unemployed	28 (12.3)	56 (28.1)
<b>Length of incarceration</b>	On remand	15 (6.6)	99 (50.0)
	Less than 6 months	21 (9.3)	40 (20.2)
	More than 6 months	72 (31.7)	29 (14.6)
	More than a year	119 (52.4)	30 (15.2)

### 2. Descriptive analysis

Cronbach's alpha value was calculated for each scale of the *Aggression Questionnaire*, the scale of the *Carlson Psychological Survey – Antisocial Tendency scale*, and the *McLean Screening Instrument for Borderline Personality Disorder*. Specifically, the

coefficient values for the aggression scales for male participants were: physical aggression = .74; verbal aggression = .61; anger = .53; and hostility = .79. For female participants, the Cronbach's alphas were: physical aggression = .67; verbal aggression = .69; anger = .53; and hostility = .81. The Cronbach's alpha

coefficients for the *Carlson Psychological Survey – Antisocial Tendency scale* were .87 for male and .76 for female. Furthermore, the internal consistencies of the *McLean Screening Instrument for Borderline Personality Disorder* were .80 for male and .75 for female. In this study, all measures demonstrated adequate reliability.

Along with the analysis, male inmates who scored high for borderline personality disorder

and antisocial tendencies outnumbered the female inmates. Table 2 shows the descriptive results of borderline personality disorder, antisocial tendencies, and the four scales of aggression among the inmates. Physical aggression and verbal aggression were high in female inmates, compared to male inmates who were high in anger and hostility.

Table 2: Descriptive results for borderline personality disorder, antisocial tendencies, and the four scales of aggression among the inmates

	Male (N=227) n (%)	Female (N=199) n (%)
<b>Borderline personality disorder</b>	107 (47.1)	47 (23.6)
<b>Antisocial tendencies</b>	93 (59.0)	77 (38.7)
<b>Physical aggression</b>	92 (40.5)	90 (45.2)
<b>Verbal aggression</b>	101 (44.5)	93 (46.7)
<b>Anger</b>	108 (47.6)	82 (41.2)
<b>Hostility</b>	112 (49.3)	91 (45.7)

Table 3 tabulates the mean score of each variable between male and female inmates. Females had slightly higher mean score in borderline personality disorder than male inmates but this difference was found not

significant ( $p > .05$ ). Male inmates showed higher mean score for antisocial tendencies than female inmates, which was found significant ( $p < .001$ ).

Table 3: Independent t-test between male and female inmates

	Mean score		Standard error mean		Independent t-test		
	Male	Female	Male	Female	t	df	p-value
<b>Borderline personality disorder</b>	3.56	3.72	.18	.18	-.61 <sup>a</sup>	424	.542
<b>Antisocial tendencies</b>	35.04	31.39	.73	.58	3.9 <sup>b</sup>	413.07	< .001
<b>Physical aggression</b>	19.66	17.86	.43	.39	3.12 <sup>b</sup>	423.68	.002
<b>Verbal aggression</b>	12.52	12.50	.26	.29	.045 <sup>a</sup>	424	.964
<b>Anger</b>	16.96	17.23	.30	.32	-.62 <sup>a</sup>	424	.537
<b>Hostility</b>	18.55	19.55	.42	.46	-1.62 <sup>a</sup>	424	.105

a Equal variances assumed.

b Equal variances not assumed.

Among the four scales of aggression, only physical aggression was found significant ( $p = .002$ ), where male inmates had higher mean score than female inmates. No significant difference was found in verbal aggression, anger, and hostility, indicating that both male and female inmates had equal tendency for the three scales.

Certain personality disorders such as antisocial personality disorder and borderline personality disorder were characterised by aggressiveness, regardless of against others or against oneself. Thus, strong association between these personality disorders and aggressive behaviours was evaluated Pearson's correlation test, Table 4.

Table 4: Pearson's correlation of variables in male and female inmates

	Antisocial tendencies		Borderline personality disorder	
	Male	Female	Male	Female
<b>Borderline personality disorder</b>	.445*	.390*	-	-
<b>Antisocial tendencies</b>	-	-	.445*	.390*
<b>Physical aggression</b>	.282*	.387*	.211**	.464*
<b>Verbal aggression</b>	.281*	.394*	.230*	.268*
<b>Anger</b>	.243*	.455*	.249*	.318*
<b>Hostility</b>	.228**	.373*	.182**	.416*

\*  $p < .001$

\*\*  $p < .01$

All correlations were found significant ( $p < .01$ ). The two subtypes of personality disorders were highly correlated with each other in male and female inmates ( $p < .001$ ). In addition, all scales of aggression were found significantly correlated with both borderline personality disorder and antisocial tendencies in male and female inmates. The strongest correlation was exhibited between borderline personality disorder and physical aggression in female ( $r = .464$ ), as well as between antisocial tendencies and anger ( $r = .455$ ). The least was between borderline personality disorder and hostility in male ( $r = .182$ ). Female inmates were more likely to exhibit fairly stronger correlation between borderline personality disorder, antisocial tendencies, and aggression scales than male inmates.

### Discussion

Many previous studies found high incidence of personality disorders within their increasing prison's population [e.g. 5, 7, 14], which was also seen in this study, where high incidence of borderline personality disorder and antisocial tendencies behaviours were identified among the inmates. These findings support the previous postulation where personality disorders, notably antisocial personality disorder and borderline personality disorder are pervasive within prison settings [e.g. 5, 7, 14, 15] and these could be related to their offending behaviours. In most studies regarding personality disorders among inmates, antisocial personality disorder is the most related personality disorders to offending and criminal behaviours [6, 7], whereas borderline personality disorder is often present in case of aggression against others or oneself [5, 6]. The high incidence of personality disorders among inmates in the current study may suggest the association between these traits and their previous offences.

Tendencies to engage in particular aggressive behaviours are surprisingly high among inmates in the current study. These findings present mutual co-existence between traits of personality disorders and aggressiveness. Both borderline personality disorder and antisocial personality disorder are mainly characterised by impulsivity, emotional dysregulation, and difficulty in relationship [8]. Presence of physical aggression, verbal aggression, anger, and hostility among inmates in the current study are concurrent with the core traits of the Cluster B personality disorders. These findings demonstrate that there is a high

likelihood that presence of personality disorders traits among the inmates are related to their aggressiveness and consequently be a factor in their criminal offending [6]. Similarly, several previous studies had suggested the role of antisocial personality disorder and borderline personality disorder in instigating aggressive and criminal behaviours among inmates [7, 14, 17].

Male and female inmates in this study had differences only in antisocial tendencies and physical aggression. No differences were shown in occurrence of borderline personality disorder, verbal aggression, anger, and hostility. These indicate that certain traits might be different between the gender groups; both may also share the same traits which could be helpful in intervention and rehabilitation processes. Our results show male inmates were more likely to exhibit antisocial traits as well as engage in physically aggressive act compared to female inmates, which is consistent with those reported by other authors [15, 16]. Compared to the other aggressive behaviours, physical aggression is the most likely behaviours been associated with violence and thus, antisocial tendencies [14, 17], which could explain why male inmates had higher tendency for both antisocial behaviours and physical aggression than female. Significant differences in occurrence of the problems might as well be explained by the type of offences. In the current study, female inmates were more likely to be convicted of drug-related offences. In comparison, male inmates consist of various offences including violent and more serious crimes. Type of offences may explain the presence of certain antisocial tendencies traits [16], for example carrying weapon, repeated fights, and disregard of social norms could be associated with certain violent crimes. Drug-related offences on the other hand, do not necessarily involve antisocial tendencies traits, especially in case of illegal drug uses and possession of illegal drugs.

No significant difference in occurrence of borderline personality disorder between male and female inmates indicates that they have equal probability to suffer the disorder in this study, though previous studies found that female inmates had higher tendency for borderline personality disorder than male [5, 15, 16]. One explanation is that both male and female inmates in this study experience the same stressor from their current imprisonment. Compared to antisocial tendencies, borderline

personality disorder is more likely to inquire current experience which obviously related to their current incarceration. For example, separation from family members and intimate partner due to imprisonment generates chronic feeling of emptiness and this could be experienced by both male and female inmates. In response, both might give positive response to the question and as a result, no difference was exhibited between male and female. This finding however produced a weak linkage between borderline personality disorder and their offending behaviours, since it is possible that certain borderline personality traits might be experienced by the inmates recently after being imprisoned. Nonetheless, the high prevalence of borderline personality traits suggests the negative impacts of imprisonment towards the inmates [18, 19] and possible negative consequences, such as in self-harm or suicidal ideation [5, 19]. Since both male and female inmates showed the same tendency for borderline personality disorder, the same intervention could be delivered to both gender groups.

Other than physical aggression, the other scales of aggression show no significant difference between male and female inmates. These findings indicate that both gender groups have the same tendencies to engage in verbal aggression, to become angry, and to become hostile towards others. Verbal aggression represents tendency to engage in argument with others and the use of verbal to express their feeling, whereas both anger and hostility represent internal aggression and are more likely to be related to emotion. The current findings show that male and female inmates could not be distinguished by tendency to engage in verbal aggression, feeling of anger, or hostility. Nevertheless, occurrences of the three scales which are considerably high in both groups may require interventions that enable them to channel their emotions, for examples anger management and self-control technique. Similar tendencies towards the aggression scales also indicate that it is equally important to provide interventions for the scales in both male and female inmates.

Borderline personality disorder and antisocial tendencies show significant correlation with each other in both male and female inmates. These findings replicate the previous findings [5, 14] and confirm that the two subtypes of personality disorders are co-occurred. Since both borderline personality disorder and

antisocial tendencies are Cluster B personality disorders, it is possible that both share certain traits [14] which may explain the current findings. Nevertheless, the findings demonstrate that more than one type of personality disorder may present in an inmate and this could provide useful information for rehabilitation in prison. Co-occurrence of mental health problems including between personality disorders present the biggest challenge towards successful rehabilitation [7, 20], thus it is important to identify each disorder there in an inmate. Our results show that male inmates demonstrated stronger association between the two subtypes of personality disorders than female inmates. This finding suggests that borderline personality disorder and antisocial tendencies are more likely to co-occur among male inmates compared to female inmates. Still, the risk is present in both groups.

Correlation between the personality disorders also suggest that one disorder may lead to the other and this may assist in finding the most appropriate intervention for the disorders. The finding however did not show the exact cause and effect which means that among the inmate, it is possible that either borderline personality disorder or antisocial tendencies may present first and lead to development of the other. Otherwise, both disorders may share the same underlying risk factors, for example familial background or traumatic experiences [21], but develop at different times depending on their environmental or current stressors factors without affecting one another. For instance, antisocial tendencies develop during childhood due to familial and environmental factors whereas borderline personality disorder develops later due to others stressors such as interpersonal relationship with others and identity disturbance. Nevertheless, both share the same familial and environmental factors but these factors may also serve as diathesis for the development of borderline personality disorder when certain stressor present later in life [21]. In addition, antisocial tendencies persist throughout the life as long as no appropriate intervention was given. It is also possible that presence of borderline personality disorder may worsen the existing antisocial tendencies. Therefore, the presenting correlation between the personality disorders in the current study highlights the importance to provide intervention for both in order to achieve the best outcome of the rehabilitation.

All aggression scales demonstrated significant correlation with both borderline personality disorder and antisocial tendencies in male as well as female inmates. These findings indicated that borderline personality disorder, antisocial tendencies, and the four scales of aggression were associated and thus one problem may contribute to the other. Comparison between gender groups showed that the personality traits are more likely to correlate with the aggression scales in female than male inmates. For example, physical aggression in female is more likely to correlate with their borderline personality disorder as compared to male. These findings suggest that personality traits play considerable role in relation to female's aggressiveness [7, 14]. On the hand, in addition to borderline and antisocial personality traits, other factors may play more significant role in male's aggressiveness, for example substance uses [22]. In response to these findings, present of other contributing factors should be considered in managing male's aggression, which can be helpful in designing the appropriate anger management and self-control techniques for male inmates. Nevertheless, additional contributing factors may also present in female with various strength of correlation.

Several limitations were acknowledged in the current study. The first limitation is the data collection which involved only quantitative self-report surveys. No expert evaluation was conducted, thus the current findings are only preliminary. Nevertheless, the current findings were aimed to pioneering future works regarding personality disorders among inmates in Malaysia. More in-depth methods are suggested for future studies to enable deeper exploration of the subjects. The application of the findings is the second limitation of the current study. Although the correlation tests successfully identified the association between the variables, the cause and effect between the variables was not examined. Since the data is only preliminary, it is difficult to examine the cause and effect of the variables. Exploration of the abovementioned subject matter is suggested in future studies to enable the determination of the risk factor and consequences among the related population.

#### Conclusion

Borderline personality disorder, antisocial tendencies, and the four scales of aggression (physical aggression, verbal aggression, anger, and hostility) were found high among male

and female inmates in this study. Male inmates showed higher tendency for borderline personality disorder and antisocial tendencies compared to female inmates; however, only antisocial tendencies were found significant. In addition, only physical aggression was found significantly higher in male inmates than female inmates among the four scales of aggression. The significant correlation among borderline personality disorder, antisocial tendencies, and the four scales of aggression demonstrated the potential underlying association between the two subtypes of personality disorders and aggression among the inmates. The findings of this study are useful in educating and increasing the awareness towards personality disorders among inmates, and thus in assisting in rehabilitation programme. Besides, family and society would be aware of the problems and this could be helpful in assisting the rehabilitation of the inmates.

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