

***“Correlation Between Testosterone Levels With Their Personality And Type Of Crime Committed In Inhabitants Of Jember Correctional Institution”.***

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*Testosterone hormone has been associated with a variety of men properties in general for some decade. Objective of this research is to investigate correlation between testosterone levels in inhabitants of jember Correctional institution, with their personality and type of crime committed. The expectation of this research is the use of result data as one of reference in the consideration of verdict for defendant in trial to have more appropriate punishment which in accordance with the criteria in this research. For subjects who met the inclusion criteria will be given questionnaire which taken from MCMI IV form. This tool will be able to assess antisocial personality, which followed by laboratory tests to determine the levels of testosterone hormone of the subject. The statistical test will be applied to the data obtained, then analyze by chi-square method.*

**Conclusion :** *As the results of this research there was no correlation between testosterone levels with the personality and the type of crime, which shown that there are many factor that affecting a person's personality, as well as the factors which causing someone committing a crime with a certain type.*

### **Background**

Antisocial personality is often described in terms of violation of the rights of others through aggressive behavior, antisocial, and without remorse. However many of them does not showing symptoms of common mental disorders such as disorientation, impaired thinking, perceptual disorders and any other form of pathological behavior.<sup>1</sup>

Aggressive behavior can be displayed in physical form includes fighting or kill to defend themselves or maintain the object of love, revenge against the humiliation, struggling and fighting to defend the country, and the reply to the person who attacked. Alternatively in the form of antisocial acts that include robbery, attacked, killed, wounded, fighting without a reason, suffering brutally retaliate with excessive destruction, against the official authorities, resist or betraying the country and sexually violent behavior.<sup>2</sup>

Max Schlapp and Edward Smith (2013) is theorized found crime was the result of an emotional disorder caused by biochemical equilibrium. The imbalance that occurs in the secretion of endocrine gland which are hormonal. In case of chemical imbalance in the body, physical and psychological effects of this secretion in a person is the emergence of irrational behavior. He said 30% inmates suffer from irregular gland function, other studies indicate that men are more aggressive than women, so there is a correlation between testosterone levels and crime. Testosterone is a hormone secreted by the testes, which stimulates the growth of the masculine character. This study found that men who had high testosterone levels will be more aggressive and dominant than those who have low testosterone levels.<sup>3</sup>

### **Testosterone Hormones**

Testosterone are dominated by male gonad hormones that influence behavior and brain function differently depending on the time of exposure. This phenomenon is called organizational-activation hypothesis are confirms gender and specific behavioral responses of individuals as well as the response of the nerve can cause a spike in testosterone

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throughout a person's lifespan significantly. Changes in hormone concentrations may have the beneficial effect on mood and affect human behavior.<sup>4</sup> Hormone steroid testosterone have long been associated with the typical behavior of a man. Thoughts of testosterone may be directed to lust, violence and masculinity. Indeed, the hormone testosterone are often referred to as the "hormone of aggression" because this hormone are allegedly associated with antisocial character of a man.<sup>5</sup>

Testosterone handle the development of libido and maintaining libido in a adult male. However, libido is also influenced by social interaction and factors emotional. Testosterone also serves as a negative feedback to control the production of gonadotropin hormone from the anterior pituitary.<sup>6</sup> Testosterone also has anabolic effects of protein and bone growth that will lead to the formation of male physical more muscular and rapid growth during puberty. Testosterone also stimulates the secretion of the oil glands. In animals, testosterone will result in aggressive behavior.<sup>6</sup>

### **Antisocial Behaviour**

Literally meaning antisocial mental illness derives from the word "psyche", "soul" and "pathos" disease. Common people call it a "crazy".<sup>7</sup> In 1952 the psychiatric nomenclature revise antisocial personality into personality sosiopatik. In 1968, terminology sosiopatik personality change into antisocial personality disorder, which is used until now.<sup>8,9</sup>

Antisocial behavior closely associated with antisocial personality disorder characterized by antisocial or criminal acts. Antisocial personality disorder is more on the inability to comply with social norms that involves many aspects in the development of adolescents and adults. These circumstances most frequently found in urban poor and among

those who move around in the area. Patients with antisocial personality disorder often show normal outside impression even warm and easy to get attention. However the history of the illness mostly found in his life. According to David & Neale, the disorder appears before the age of 15 years were characterized by delinquent behavior, running away from home, frequently lying, stealing, burning, or damage in any other way. This pattern will continue until adulthood characterized by irresponsible, inconsistent in their work, against the law, aggressive, reckless, impulsive, and failed to plan something.<sup>10</sup>

The prevalence of ASPD (Antisocial Personality Disorder) or antisocial personality disorder is 2 - 3 % of the population in America. According to research<sup>11</sup>, antisocial personality is found in the central area of the city were poor and many drop out of school. ASPD in the prison population of approximately 75%. Comparison of men and women varied from four to one to seven to one. Onset before the age of fifteen, the man could have formed earlier.<sup>11,12,13,14</sup>

To assess a person's personality may use multi-axial Millon Clinical Inventory (MCMI) - IV. This tool created by Theodore Millon, Carrie Millon, Roger Davis, and Seth Grossman. MCMI was first developed in 1977 by the item number as many as 175, divided into 20 different scales. In 1987, developed into MCMI MCMI-II with the same item number is 175-item and is divided into 22 different scales. The next development was published in 1994, MCMI-II into MCMI-III with a total of as many as 175 item item is divided into different scales.<sup>15</sup>

MCMI Advantages is involving procedures conceptual-theoretical, structural-internal and external-criterion means this instrument has high reliability and excellent validity. MCMI relatively efficient in the use of time and can measure a personality disorder which is usually overlooked by clinicians. While the lack of tests MCMI is no benchmark or the gold standard for comparing assessments MCMI, difficulty in describing the state and characteristic properties, as well as at the time of interpreting the MCMI, it sometimes difficult to determine from where interpretation of the information obtained, some report also found over diagnosis and over pathologist.<sup>16</sup> MCMI is different from other personality tests because the assay is based on the theory and according to the multi axial format. In addition, each version of the MCMI renewal coincides with the revision of the DSM (Diagnostic and Statistical Manual of Mental Disorder).<sup>17</sup>

### **Criminality**

Crime is all kinds of actions and deeds that harm economically and psychologically violate any applicable laws in the country of Indonesia as well as the social norms and faith. Means that the crime is anything unlawful act and violate social norms, so that the public opposed it.<sup>18</sup>

Perpetrators of crime called a criminal. As long as a criminal has not been determined by a judge, then this person is called the defendant. For These is a fundamental principle of a state of law: a person remains innocent until proven guilty. Criminals were convicted and sentenced to jail are called inmates.<sup>19</sup>

Correctional institution is the place to fostering convicts in Indonesia. Before the prison term known in Indonesia, it was called the jail. Occupants prison inmates or Fostered Citizen (WBP) may also be as prisoner, where the person is still in the judicial process and has not been determined guilty or not by the judge.<sup>20</sup>

### **Method of research**

This research is observational analytic and cross sectional study. Sample taken from subject of research has carried out in Correctional Institution (Prison) Jember at Jalan Sudirman No 13 Jember. Phone (0331)487244. Fax (0331) 487850. Data sampling taken in August 2016, then After this period and validity of sample are obtained then the study stopped with the participant of research considered done.

Sampling technique involves several stages. First step is to separate between prisoners and detainees. The next step is to choose according to the inclusion criteria then be carried out sampling with simple random sampling technique, taking randomly which male inmates adults with various types of violations of crimes as many of the samples plus 25% and 10% to anticipate filling tools that does not valid, then conducted interviews based on tools and blood sampling (total testosterone levels). Sampling passed through several stages and is expected to be done in one day execution to avoid bias.

Testing the value of total testosterone levels and types of criminality with chi-square test or comparison test which  $X^2 / t_2$  free sample when the data has normal distribution.

### **Result**

Table 1 shown the demographic data of respondents. By age, data says that the youngest age of respondents was 19 years old and the oldest was 55 years old. The average age of respondents is based on a statistical calculation was 34.5 years. Age of the most respondents were in the group 26-35 years (34%).

Table 1. Characteristic of respondent based on ages, education level, marriage status, income, length of sentence, recidivist, and illness history.

Demography	Frequency	Percentage
<b>Ages</b>		
17-25 year	10	26 %
26-35 year	13	34 %
36-45 year	8	21 %
46-55 year	7	19 %
<b>Education</b>		
- High School	28	74 %
- University	10	26 %
<b>Marriage Status</b>		
- Not married	11	29 %
- married	18	47 %
- divorced (death)	0	0 %
- divorced	9	24 %
<b>Income</b>		
- ≤ 1 million	19	50%
- 1 to 3 million	8	21 %
- ≥ 3 million	11	29 %
<b>Sentence period</b>		
- < 5 year	23	61 %
- ≥ 5 year	15	39 %
<b>Recidivists</b>		
- 1 x	33	87 %
- > 1 x	5	13 %
<b>Illness history</b>		
- Hypertension	3	8 %
- Diabetes mellitus	2	5 %
- None	33	87 %
<b>Total</b>	<b>38</b>	<b>100</b>

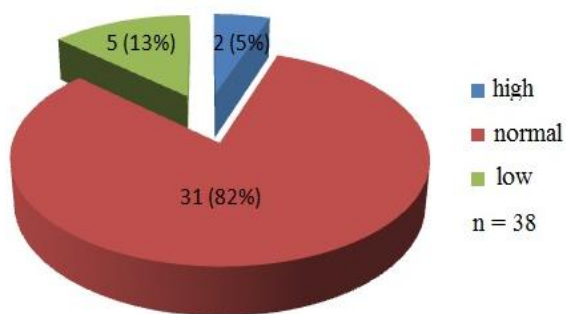


Figure 1. Testosterone hormone level of the respondent

Figure 1 shown the distribution of total testosterone levels characteristic of respondents. Most respondents (82%) have normal testosterone levels. Based on the data, highest

value of total testosterone level is 10.11 ng/ml and the lowest value of total testosterone is 0.41 ng/ml, while the value of total testosterone average was 5.17 ng/ml.

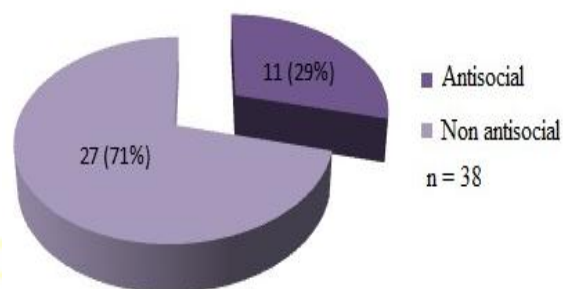


Figure 2. Personality of the respondent

Figure 2 shown the majority of respondents (71%) are not antisocial personality and 11 respondents (29%) have antisocial personality.

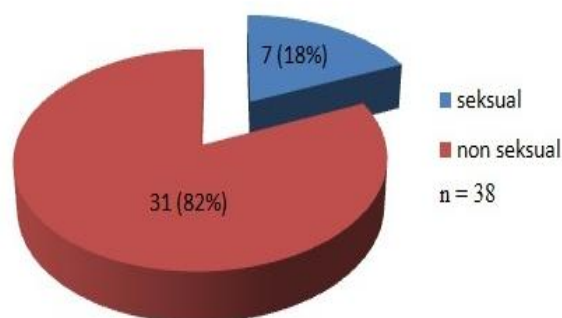


Figure 3. Crime of type done by respondent

Figure 3 shows that the majority of respondents (82%) is committed non-sexual crimes and 18% did sexual crime. The Type of sexual crimes are include child abuse, while the type of non-sexual crime is mostly related to drugs.

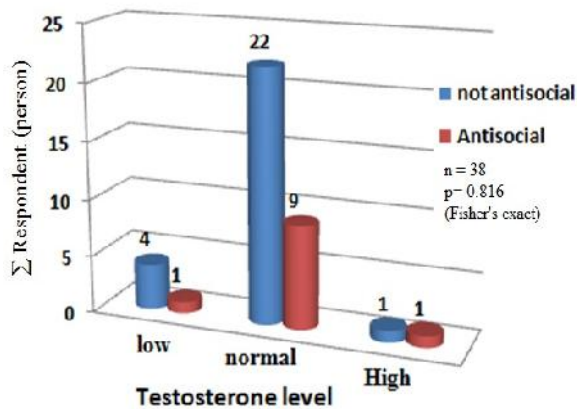


Figure 4. Crosstab of testosterone levels in total with personality.

Figure 4 illustrates testosterone levels and personalities of all respondents who have been tested, regardless of crime. With a total of 38 people. Then tested by chi square method in SPSS, found respondents with dominant testosterone levels is in normal for both personality.

Total of 22 people with not antisocial personality who had normal testosterone levels and 4 people have low levels of testosterone. While the respondents with antisocial personality, 9 people have normal testosterone levels and each ones with low and high levels of testosterone.

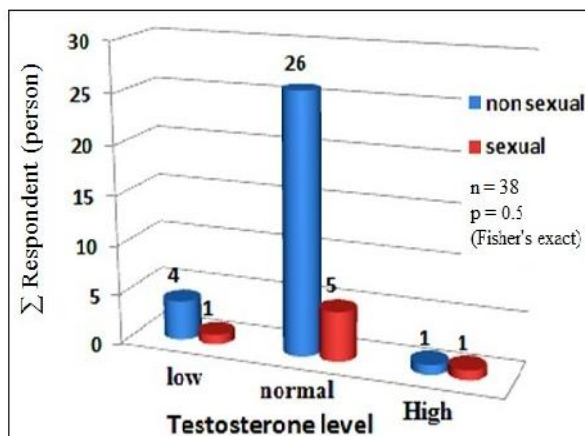


Figure 5. Crosstab of testosterone levels and types of crimes committed by the respondent.

Figure 5 illustrates testosterone levels and types of criminality of all respondents based on crime that has been committed, which is sexual crimes and non-sexual crimes. From a total of 38 people then tested by chi square method in SPSS.

Most of respondents had normal testosterone levels, which 26 people in respondents with non-sexual crime. While in sexual crime are obtained 5 peoples with normal testosterone levels and the rest for each 1 person with high testosterone levels and 1 low testosterone levels.

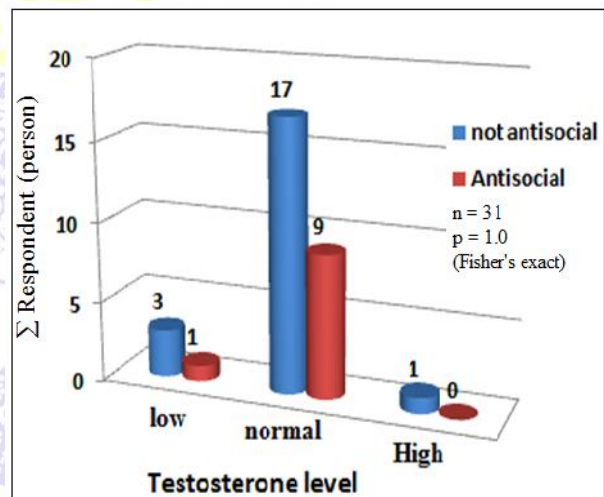


Figure 6. Crosstab of testosterone levels and personality on non-sexual crime.

Figure 6 obtained by ruling a filter thus data only shows respondent with non-sexual crime. From this data will be tested using the Chi square test. Resulting respondents who committed non-sexual crime with antisocial personality has a normal total testosterone levels.

Respondents with not antisocial personality are 17 people in normal testosterone levels and as many as 3 people have low testosterone levels. While the respondents with antisocial personality has 9 people with low testosterone levels and 1 low testosterone levels.

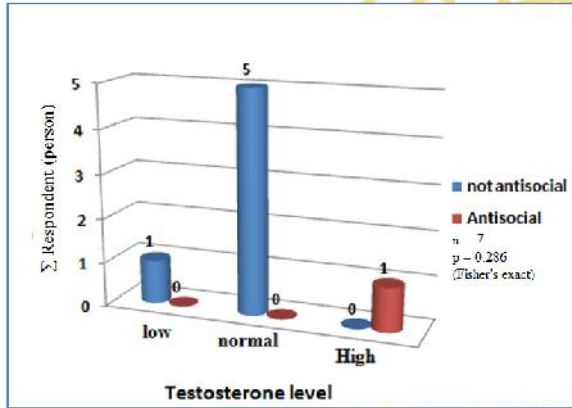


Figure 7. Crosstab of testosterone levels and personality on sexual crime.

Figure 7 shown respondents who committed sexual crime. From this data the chi square test will be conducted then analyzed the results. From the graph, can be seen that respondents who commit sexual crimes with antisocial personality have high total testosterone levels.

Only 1 person with antisocial personality has high testosterone levels, while 5 respondents with not antisocial personality and normal testosterone levels.

## Discussion

Figure 4 shows there was no association between total testosterone levels with the respondent's test data are quite unequal between antisocial personality and antisocial personality, as well as the measurement results are uneven testosterone levels between low, normal and high. It has been described that the testosterone are meet the criteria of a good personality variables. Steady Testosterone levels over the time are showing convergent and discriminated validity and have a high predictive validity in a specific situations. Men with high testosterone become dominant and aggressive, otherwise men with normal testosterone levels are low and are likely not to be dominant and aggressive as in antisocial personality.<sup>21</sup>

Length of sentence and the environment are also taking part in influencing personality.

Failure to appear in an antisocial psychological as biological anomaly at the time he was an adult, regardless of the quality of parenting, it is called internalization failure,<sup>22</sup> described as evolutionary and phylogenetic transfer of regulatory mechanisms from the outside to the inside.<sup>23</sup> refer to this process as the process of assimilation. Failure internalization began their distrust of one's environment and shortage incorporative since the beginning.<sup>24</sup> Thus when a person has begun to be adapted from the beginning was an antisocial but after serving time, his personality gradually adapting within their environmental.<sup>25</sup>

Figure 5 shows that there is no correlation between testosterone levels and types of crimes committed by the respondent. However, when we observe the distribution of data for respondents who have low testosterone levels and normal, tend to be non sexual crime committed. This is probably because the correlation between testosterone levels to the nature of aggression that can be manifested either in a criminal act sexual or non-sexual.

Other theory also describes that aggressive behavior is caused by the increase in testosterone.<sup>26</sup> Although, the increase in testosterone alone is not able to generate aggressive behavior directly. Testosterone in this case acts as an antecedent, thus need to have the originator from the outside. The study results about the increasing of testosterone to the increasing of aggression behavior is not consistent. In boys has increased aggression behavior. but was not found in girls.<sup>27</sup>

Figure 6 presents data on the distribution of personality and testosterone levels for the crimes committed nonsexual, Shows the results of the analysis has no correlation between antisocial personality and total testosterone levels. with 100% of respondents have high total testosterone levels with antisocial personality instead. Mean that

crime of non sexual are influenced by other factors.

In figure 7, there are 7 respondents who commit sexual crimes, then after statistical test, no proven correlation between testosterone levels and personality. However, it is quite interesting to discuss the distribution of the data on antisocial personality respondents with low-normal testosterone levels, which in this case were not obtained any data at all or 0. For respondents who have high total testosterone levels with antisocial personality found the number of 100%. Testosterone also has been linked to a variety of antisocial behavior including difficulties on the job, in violation of the law, the failure of the marriage, drug use, alcohol abuse, and violent behavior, which is commonly seen in antisocial behavior.<sup>28</sup>

In several studies of criminology also explains their impulsive character as one of the factors of the crime.<sup>29</sup> states that individuals with low self-control tend to act impulsively, preferring a simple task and involves physical ability, self-centered, happy to take the risk, and easy to lose control of emotions as easily frustrated. Individuals with these characteristics are more likely to engage in criminal matters and perversity than those who have a high level of self-control.

In the case of sexual abuse of children by adults, it is assumed that the cause is a psychological disorder actors so that he is unable to control the biological urge and violence. So the efforts is to track and intervene source of the problem, testosterone hormone which is considered the most responsible ones. Several types of clinical interventions eg cognitive therapy, behavioral and pharmacologic also reportedly succeeded in reducing the intensity of the perpetrators of violence against the victim's behavior.<sup>30</sup>

## Conclusion

1. Found that the majority of respondents (82%) had total testosterone levels within the normal range category (between 3.0 to 10.6 ng / ml), while 13% of respondents have low testosterone levels, and the remaining 5% had higher levels of testosterone high.
2. Fraction of respondent are antisocial personality
3. With 82% of respondents had been convicted of a non-sexual crime and as much as 18% of respondents are convicted of a sexual crime.
4. There was no correlation between total testosterone levels with the respondent's personality.
5. There was no correlation between total testosterone levels with this type of crime the respondent.
6. There are many factor which affecting relationship between testosterone level and antisocial personality with crime committed.

## Limitation

Data in this study can be used as material for further research, by testing testosterone and MCMI IV test according to cohort studies which is applied to sentenced convicts then after certain time take a retest which can determine environmental effects of prisons into the testosterone levels and respondent personality.

In further research may consider the leght of sentences with shorter range that can reflect the real situation.

Might be developing some types of clinical interventions eg cognitive therapy and behavioral therapy to reduce the intensity of violent behavior of the inmates.

Further study should examine impulsivity factor, thus the result data obtained can be characterized as criminal with aggressive act or a criminal with impulsive action.

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