

Substance Use among Muslim Students in Aceh, Indonesia.

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Background: Illicit substance use is a serious social problem faced by adolescents worldwide, including adolescents in Aceh and has many negative consequences. In addition, illicit substance use does not fit with the values of Islamic teaching, and is strictly prohibited in Islam.

Purpose: The aims of this paper are to determine the prevalence of illicit substance use, the stages of substance use, and types of substance used among Muslim students in senior high schools in Aceh, Indonesia.

Method: Four hundred and twenty six students who met the inclusion criteria were recruited from four senior high schools in Banda Aceh by using simple random sampling, and of these, 290 returned a completed questionnaire. A self reported questionnaire was used to collect data.

Result: The mean age of the subjects was 15.9 years old and the majority of them were female (68.6%). The study found that the prevalence of substance use was 2.4% with a higher number of females than males who had used illicit substances. The common substances that were used by the students were marijuana and dextromethorphon, as well as intentionally inhaled substances. Lastly, out of the students who had used illegal substances the majority was in the regular use stage (1.4%).

Conclusion: This study found that substance use among Muslim students in Aceh exists, although prevalence was low. Thus, several preventive programs may be needed in Aceh not only for Muslims students who have used substances but also for students who have not use illegal substances.

Keywords: Adolescents, Substance use, Muslim students, Indonesia.

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Background

Substance use or abuse is an activity associated with the use of psychoactive substances in order to achieve changes in psychological functioning, done outside of medical purposes (Lamb, 2005). Currently, the prevalence of illicit substance use among people in the world is increasing every year, making substance abuse a serious social health problem worldwide. The increasing prevalence of substance abuse is not only occurring in countries that have a majority of non-Muslim populations, but also in countries that have a majority of Muslims (United Nations Office on Drugs and Crime [UNODC], 2010).

As one of the countries with the largest Muslim population, Indonesia also has an increasing prevalence in the use of illicit substances every year. A survey conducted by the National Narcotics Bureau [NNB] and Health Research Center of the University of Indonesia [HRCUI] (2008) projected the prevalence of the use of illicit substances in Indonesia would increase about 0.47% every year. Furthermore, this survey also reported that the prevalence of illicit substance use in Indonesia in 2008 was 1.6 %, of which 86% was students at both high school and college levels, with the remaining percentage being adults. The prevalence of the use of illicit substances in Aceh, the largest Muslim province in Indonesia, in 2008 was 1.3 %, of which 89% was students at both high school and college and the rest adults. These studies show that most drug use in Indonesia occurs among students, at both high school and college levels. Thus, it indicates that illicit substance abuse is also a serious problem faced by students in Indonesia, as well as students in Aceh as the future young generation, although illicit substance abuse is not acceptable according to Islamic beliefs and teaching. In Banda Aceh as one of the districts in Aceh province, the prevalence of substance use among students in senior high schools in 2008 was 8.4% (Health Department of Aceh Province, 2008), while, the percentages in subsequent years have not been available. Thus, identifying the

prevalence of substance use is needed to be done each year to provide information whether this prevalence is increasing or decreasing, and can be used to evaluate the success of several preventive programs that have been conducted or to identify whether a preventive program needs to be developed or improved in Banda Aceh.

There are several values important in Islamic teaching, including freedom, virtue, and happiness. Islamic teachings teach Muslims to have behaviors that have positive effects not only in their own lives, but also for other people surrounding their lives. Therefore, drug abuse behavior does not fit with the values of Islamic teachings, and is strictly prohibited in Islam because the consequences of this behavior threaten human welfare (Khamarulzaman & Saifuddin, 2010). Thus, Islamic religious teachings have an important role to protect a Muslim against becoming a person who has negative behaviors such as substance abuse behavior.

In Aceh, Islamic religious teachings have an important influence in regulating the daily life of society. This special influence can be seen from the special autonomy received by Aceh province in 2003 from the Indonesian government, which gave the opportunity for the Aceh government to organize its administration and society based on the Islamic religion. Thus, this has led to the implementation of Islamic law in regulating the people's lives in Aceh in addition to the application of national laws made by the Indonesian government (Miller, 2004). In Aceh, if people who use illegal substances become known to the police who are responsible for implementing Islamic law (*Islamic Syariah*), then those people will be punished based on Islamic law which is usually a public caning of up to eighty times (Johnson, 2010). Thus, it indicates that the use of illegal substances is strictly prohibited among people in Aceh. The application of *Islamic Syariah* in Aceh may be one of the factors that may cause small number of illegal substance users

especially among students.

Objectives

The objectives of this study were to determine the prevalence of illegal substance use, to explore the stages of the substance use, and to explore the types of substances used among Muslim students in senior high schools in Aceh, Indonesia.

Method

Population and Settings

The target population of the study is Muslim adolescents who were studying in senior high schools in Banda Aceh, Aceh Province, Indonesia. Furthermore, this study was conducted in three types of senior high schools namely the public senior high schools, Islamic public senior high schools, and Islamic boarding schools.

Sample

The number of subjects in this study was 426 students calculated by using Yamane, Taro statistic formulation (Yamane as cited in Israel, 2011). However, the total sample number who returned a completed questionnaire is 290. The sampling technique used in this study was probability random sampling, which was divided into three phases. The first phase used non proportional stratified random sampling to identify the number of participants in each type of senior high schools in Banda Aceh. The second and third phases used simple random sampling to select the schools and students who would be the participants in this study.

Data Collection Instruments

Substance Use Questionnaire (SUQ). This instrument has been developed by the Research Center of the University of Indonesia [HRCUI] (2008). This instrument was used

after permission was obtained from the original authors. The original version of this instrument was developed in the Indonesian version. This instrument consists of five questions. The first question has the purpose to identify the prevalence of substance use. The second has the purpose to identify the type of substance used by students for the first time. The purpose of the third question is to identify the age of the students when they consumed such substances for the first time. The fourth through to the last question in this questionnaire have the purpose to identify the frequency of the use of substances in three periods of time including during a lifetime, in the past month before data collection and in the past 12 months before data collection in the study. After that, the researcher categorized the use of a substance into three categories based on the fourth, fifth, and the last questions. These categories consist of the experimenter (if student selects 5 times or less in their lifetime), regular use (if student selects less than 49 times in the last 12 months before the data collection in this study), and abuse/addiction (if student selects 49 times or more in the last 12 months before data collection).

Ethical Consideration

After the researcher obtained the approval from the Ethics Committee of the Faculty of Nursing, Prince of Songkla University, Thailand, the head of Banda Aceh Department of Education, and the head of the schools selected, the researcher sent a notification letter about this study and an informed consent form to the parents of each student selected. All students who obtained permission from their parents and agreed to participate in this study were informed about their rights to withdraw from this study at any time for any reason without any negative consequences. The researcher explained the purpose of the study, and the expectations of the students' participation. To keep confidential all of the information from the students, the researcher maintained the anonymity of the students by using a code and asking them to insert their questionnaire that had been filled in an envelope

prepared by the researcher and returning that questionnaire directly to the research assistants.

Data Analysis

Data was analyzed by using descriptive statistics. The demographic and substance use data of the students has been analyzed and presented as a frequency, percentage, range, mean, and standard deviation (SD).

Results

Demographic Characteristics

Demographic characteristics consist of three main characteristics. The first, individual characteristics of the students; the mean age of students was 15.99 years old (\pm SD = 0.9 & range = 14-18). The majority were Acehnese (94.1%) and female (68.6%). In regards to school characteristics, over half were in the 10th grade (54.5%). About half attended public senior high school (47.9%) with most school affiliation being government schools (89.0%). The last, family characteristics, 92.4% of the student's parents were married. The majority of education levels of parents were senior high school; (48.3% for mothers) and (43.1% for fathers). The majority of occupations of the student's fathers were government employees (34.8%), whereas the majority of students' mothers were housewives (41.4%). Nearly all of the family incomes were more than 1,400,001 Indonesia Rupiah (IDR) or 140 United States Dollar (USD) (73.9%) per month. Lastly, almost 80% of students lived with their parents (77.9%).

Prevalence of substance use

Firstly, Table 1 shows that there were a small percentage of substance users among the students namely 2.4%. Furthermore, the majority of students who had used illegal substances were in the regular use stage (1.4%).

Table 1

Frequency and prevalence of substance use among Muslim students in senior high school in Aceh, Indonesia (N = 290)

Substance Use	N	%
Never Used	283	97.6
Used	7	2.4
Experimenter	3	
Regular Use	4	
Abuse/addiction	-	
Total	290	100

Furthermore, the prevalence of substance use over three periods of time, the type of substance used by the students, and the frequency of substance use can be seen in Table 2. The prevalence of substance use during a student's lifetime until the point of the study and 12 months before this study was same (2.1%). Further, this prevalence decreased to 2.0% in the last one month before this study. The popular choice of illegal substances used by the students was intentionally inhaled substances (e.g. glue, gasoline, markers, paint thinners, and acetone etc). Moreover, the frequency of substance use by the majority of students who had used illegal substances was more than 6 times in the student's lifetime (1.8%) and the past 12 months before this study (1.5%). While, during the last month before this study, the substances use frequency was less than 6 times (2.4%).

Table 19

Frequency and Percentage of Prevalence, Types and Frequency of Substance Use in three periods of time among Muslim Students in Senior High School in Aceh, Indonesia (N = 290)

	Marijuana n (%)	Dextromethorphan n (%)	Intentionally inhaled substances n (%)
Lifetime (frequency)			
0 times	288 (99.3)	288 (99.3)	287 (99.0)
1-2 times	1 (0.3)	-	1 (0.3)
3-5 times	-	1 (0.3)	-
6-9 times	1 (0.3)	1 (0.3)	1 (0.3)
10-19 times	-	-	1 (0.3)
During past 12 months (frequency)			
0 times	288 (99.3)	288 (99.3)	287 (99.0)
1-2 times	1 (0.3)	1 (0.3)	1 (0.3)
3-5 times	-	-	-
6-9 times	1 (0.3)	1 (0.3)	2 (0.7)
10-19 times	-	-	-
In the past month (frequency)			
0 times	289 (99.7)	288 (99.3)	287 (99.0)
1-2 times	-	-	2 (0.7)
3-5 times	1 (0.3)	2 (0.7)	1 (0.3)
6-9 times	-	-	-
10-19 times	-	-	-

Discussion

The Prevalence of Substance Use among Muslim Students

The prevalence of substance use in the present study was 2.4 % (Table 1). This rate was 3.5 times less than the prevalence of substance use among students in senior high schools in Banda Aceh in a previous survey conducted by the Health Department of Aceh Province in 2008. The prevalence in the previous survey was 8.4 %. Furthermore, the prevalence of substance use in this study also was 7.02 times less than the prevalence of substance use among students in senior high schools in Bekasi-Indonesia in a survey that had been conducted by Raharni (2005). The prevalence rate in the previous survey was 16.84 %.

Although the prevalence of substance use in the present survey was lower than the previous survey in Banda Aceh but the prevalence rate of both the present study and previous study in Banda Aceh were still less than previous surveys from other cities in Indonesia. This may be due to different cultures and laws related to substance use applied in both areas such as Banda Aceh and Bekasi. Bekasi is one of the areas in Jakarta, the capital of Indonesia, where the variety of ethnic groups and religions is higher than in Banda Aceh. Furthermore, laws related to substance use that are applied in that area are only sourced from National Law. While in Banda Aceh, the majority of ethnic groups and religion are Acehnese and Islamic religion. The laws related to substance use applied in that area are not only sourced from National Law, but also from *Islamic Syariah*. Thus, resulting in making substance use strictly prohibited in Banda Aceh rather than Bekasi. It also may cause students in Banda Aceh to be at a lower risk to use substances than the students in Bekasi. Finally, it may affect the prevalence of substance use in Banda Aceh to be lower than Bekasi or other areas in Indonesia that have a difference in the characteristics of students compared to those in Aceh provinces.

The small prevalence of illegal substance use among Muslim students in Banda Aceh might be caused by the majority of students have family income in the moderate and high level and lived together with their parents. There was a study reported that adolescents from the low socioeconomic class were more likely to use substance than higher socioeconomic class adolescents (Arthur, Hawkins, Pollard, Catalano, and Baglioni, 2002). It may be because poor adolescents live in areas where drugs are more readily available and know much more than upper class adolescents about the drug life. Thus, it makes them to be at risk to become illegal substance user. Furthermore, students who lived together with their parents may have good monitoring of their parents than students who do not lived together with their parents. Parental monitoring is one of the important aspects of authoritative parenting in applying discipline for their children because monitoring and discipline can

decrease delinquency and substance use and abuse in their children (Dishion & McMahon, 1998; Fletcher, Darling, & Steinberg, 1995; LeDoux, Miller, Choquet, & Plant, 2002). A high level of parental monitoring is an effective buffer against peer pressure, such as peer-following drug use, and personality risks such as sensation seeking (Morojele & Brook, 2001). For example, one study found that adolescents who had a lower level of parenting monitoring were more likely to choose friends with a high level of drug use (Mounts, 2002).

Furthermore, the prevalence of male students who used illegal substances was lower than female students. The prevalence rate of female students who used substances was 71.5% while the percentage of male students who used substances was only 28.5%. This is not consistent with several studies that have reported that male students have a higher risk of being a substance user. One of those studies was conducted by Raharni in 2005 who reported that male students were more than 29.77 times more likely to use substances than female students. In addition, the number of male students that participated in this study was lower than female students because this study lost 32 % of subjects during data collection and the majority of them were male students. Thus, it might explain the higher prevalence rate of female students who used substances in this study. Thus, the high sample number of female students in the present study will influence the data related to the prevalence of substance use among female students. Furthermore, the lower sample number of male students in this study might be one of the factors influencing the small percentage of male substance users in this study, because it has been shown that male students are at higher risk of using illegal substances than females. Thus, further study focusing on male students using illegal substance is recommended.

The other causing factors of a small prevalence rate of substance use in this present study might be due to the age of the students who participated in this present study. The average age of students in this study was lower than 17 years old (67.9%). Whereas, a

previous study that has been conducted among students in Bekasi-Indonesia reported that students who were aged over 17 years old were more than 9.9 times likely to use illegal substances than students younger than 17 years old (Raharni, 2005). Thus, focusing on students who are aged over 17 years old is recommended for a further study.

Furthermore, there was a previous survey conducted in Iran by Poorasl, Vahidi, Fakhari, Rostami, and Dastghiri (2007) that reported that out of 1785 male students, the prevalence rate of drug users was 2.0 %. It indicated that the prevalence of substance use among male Muslim students was still low, even though that study only selected male students as the participants, and they are more likely to use illegal substances than female students. Aceh and Iran are Islamic religious areas, and therefore are areas that are quite similar in cultures. They also apply *Islamic Syariah* to regulate daily life in their society so that substance use is strictly prohibited in both areas. There is an official drug policy in this area to strictly monitor illegal substance use. The cultural differences and the strict prohibition of substance use by the Islamic religion and the official drug policy are factors that contribute to the low prevalence rate of substance use among Muslim students (Poorasl, Vahidi, Fakhari, Rostami, & Dastghiri, 2007). Thus, these factors might cause Muslim students in Banda Aceh to be at low risk of substance use resulting in the prevalence of substance use in this present study to be small. Thus, for policy makers of other cities that have a Muslim majority, applying *Islamic Syariah* to control the behavior of their community in regards to illegal substance use may be recommended, because it has a positive effect in reducing the prevalence rate of illegal substance use especially among students.

However, Muslim students in Banda Aceh may be at risk of becoming substance users in the future because of the geographical area of Banda Aceh which is one of the potential factors that may increase the spread of illegal substances especially marijuana in this area. Banda Aceh is surrounded by Aceh Besar district. This district is one area producing

marijuana in Aceh. It can be evidenced by the discovery of 155 hectares of marijuana fields in several areas in this district in 2011 (Suara Pembaharuan, 2011). Therefore it has a higher level of availability i.e. easier to access and this may increase in the future. Further, increasing availability of marijuana may encourage students to use marijuana and may increase the prevalence of substance use among the students in this area if there are no preventive programs conducted to help them to reduce the risk factors of substance use. Thus, developing appropriate preventive programs to protect students is recommended for teachers. Furthermore, teachers can also collaborate with nurses or social workers to develop preventive programs.

Patterns and Stages of Substance use

The findings of this study not only show the prevalence rate of substance use over three periods of time but also the patterns and stages of substance use (Table 1 & Table 2). There have been no new cases of substance use during the past 12 months or the last month before data collection in this study. However there was any one case of substance use that disappeared during the past one month. It means that there was no increase in the number of substance use cases, but there was a decrease in the number of substance use cases. Thus, the incidence rate in this study could not be identified because there were no new cases of substance use.

Furthermore, the frequency of substance use among students who had used illegal substances in this study was less than 50 times. It means that there were no students in the abuse/addiction stage. This is consistent with the results of a national survey that was conducted by HRCUI and NNB (2008) which reported that students were rarely found in the abuse/addiction stage because nearly all of the illegal substance users who were in that stage of substance abuse were adults. Usually students who are in the abuse/addiction stage have been excluded from school because they have serious problems in coping with life in general

that it disrupts their daily life, therefore it affects their schooling. One of the characteristics of the abuse/addiction stage is the failure of the abuser to meet their role obligation as students at school (Fuller, 2002). Furthermore, all of the students who used substances were in the experimental stage and regular use stage. In these stages of substance use, the students were more likely to stop using substances than the students in the abuse/addiction stage. Substance use in this study was not quite so serious a problem because the programs that can be used are developed to help the students in the experimental and regular use stages and are not targeting the students in abuse/addiction stage which is a far more serious and complicated problem. Several programs that may be developed for students in both stages are education, counseling, family therapy, and motivational interviewing (Jaffe & Solhkhah, 2006). Thus, improving knowledge and skills to develop an appropriate preventive program related to each stage of substance use is recommended to nurses especially community nurses

Types of Substances Used among Muslim Students.

The findings of this study also reported that the type of substances that are used by students were marijuana, Dextromethorphan (cough medicine), and intentionally inhaled substances (e.g. glue, gasoline, markers, paint thinner, and acetone etc), in which the effects of these substances are more dangerous than cigarettes or alcohol consumption (Table 2). Furthermore, these substances are easy to find in Aceh especially marijuana because Aceh is known as one of the largest marijuana producing areas in Indonesia (The Globe Journal, 2011). Lastly, the findings showed that the types of substances used by male and female students were different. Male students used marijuana, whereas female students used prescription drugs and inhalant substances. There was a previous study in Florida that showed that female students were at significantly higher risk of using inhalant substances than male students in their lifetime (Siqueira & Crandall, 2006) whereas, males were more likely to use marijuana. This is evident by a previous study that has been conducted by Schepis et al.,

(2011) in which he reported that 39.0% of females and 42.1% of males used marijuana during their lifetime; 22.4% of females and 26.9% of males used marijuana during the past 30-days. Thus, male students have a higher risk to use harmful substances than females, because marijuana has higher negative effects than Dextromethorphan (cough medicine), and intentionally inhaled substances (e.g. glue, gasoline, markers, paint thinner, and acetone etc).

Conclusions

Substance use among Muslim students in Banda Aceh exists, although the prevalence rate was low. Thus, the use of illegal substances in this study was not quite so serious a problem but it still needs attention from related sectors, because the geographical area of Banda Aceh has potential factors that may encourage the increasing spread of illegal substances especially marijuana in this area, which may cause students in Banda Aceh to be at risk to be substance users in the future.

Recommendations

The findings of the study can be used as foundation information for further study. For further replication studies, it is recommended to select only male students over the age of 17 years old because it may help the researcher to get a clearer picture of the prevalence rate of substance use. For teachers, it is recommended to develop or to provide an appropriate preventive program to protect their students from substance use. Teachers can do this together with a student's family, nurses, and social workers. Furthermore, teachers should not punish their students who use illegal substances because it cannot help their students to stop using. However, teachers should be able to provide a preventive program and encourage their students to be involved in the program.

Furthermore, for policy makers in cities that have a majority of Muslims, it is

recommended to develop a policy that can help to protect students from substance use. It may be done by applying *Islamic Syariah*. Policy makers should be able to provide a policy that can support developing a preventive program for substance use and protect students from an environment that is at risk from illegal substance distribution. Finally, in regards to the community nurses, it is recommended to improve their knowledge related to illegal substances (e.g. marijuana, prescription drugs, inhalant substances, etc.) needed in developing a preventive program for both students who use and do not use illegal substances. Furthermore, it is also recommended that nurses improve their knowledge related to appropriate programs in each stage of substance use that can be developed to help students who use illicit substances. Lastly, in applying a preventive program, nurses are recommended to separate students based on the type of substance used or students' gender, because the type of substance used or gender need different preventive programs.

References

- Arthur, M.W., Hawkins, J.A., Pollard, J.A., Catalano, R.F., & Baglioni, A.J. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescents problem behaviors. *Evaluation Riview*, 26(6), 575-601.
- Dishion, T.J. & McMahon, R.J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical, Child, and Family Pschology Review*, 1, 61-75.
- Fletcher, A.C., Darling, N.E., & Steinberg, L. (1995). The company they keep: relation of adolescent's adjustment and behavior to their friend's perceptions of authoritative parenting in social network. *Developmental Psychology*, 31, 300-310.
- Fuller, P.G. (2002). The role of the primary care physician in the referral process. In Schydlower, M (eds). *Substance Abuse*. Elk Grove Village: The American Academy of Pediatrics.
- Health Department of Aceh Province. (2008). Surveillance survey of risk behavior of HIV infection in Naggroe Aceh Darussalam 2008 Retrieved August 31, 2010, from <http://dinkes.acehprov.go.id>
- Israel, G.D. (2011). Determining sample size. Retrieved October, 23, 2011, from <http://edis.ifas.ufl.edu/pd006>.
- Jaffe, S.L & Solhkhah, R.S.(2003). Substance abuse disorder. In Dulcan, M.K., & Wiener, J.M. (Eds). *Essentials of Child and Adolescent Psychiatry*. Washington: American Psychiatric publishing, Inc.
- Johnson, T. (2010). Islam: Governing under sharia (aka syariah, shari'a). Retrieved January, 5, 2010, from <http://www.cfr.org/publication/8034/islam.html>.

- Kamarulzaman, A., & Saifuddeen, S.M. (2010). Islam and harm reduction. *International Journal of Drug Policy*, 21, 115–118.
- Lamb, C. (2005). *Seminars in child and adolescent psychiatry (2nd ed)*. London: Gaskell
- Miller, M.A. (2004). The nanggroe aceh darussalam law: A serious response to Acehese separatism. *Asian Ethnicity*, 5(3), 333-351.
- Morojele, N.D. & brook, J.S. (2001). Adolescents precursors of intensity of marijuana and other illicit drug use among adult initiators. *Journal of Genetic Psychology*, 162, 430-450.
- Mounts, N. (2002). Parental management of adolescent peer relationships in context: the role of parenting style. *Journal of family Psychology*, 16, 58-69.
- National Narcotic Bureau & Health Research Center of University of Indonesia. (2008). Report of drug abuse survey in Indonesia 2008 Retrieved August 30, 2011 from <http://www.scribd.com/doc/51978553/Laporan-survei-penyalahgunaan-narkoba-2008>.
- Poorasl, A.M., Vahidi, R., Fakhari, A., & Rostami, F. (2007). Substance abuse in Iranian high school students. *Addictive Behaviors* 32, 622–627.
- Raharni, M.J.H. (2005). Factors Associated with Drug Abuse (Narcotics, Psychotropic Substances & Addictive) Among High School Students in Bekasi-Indonesia. *Journal of Cermin Dunia Kedokteran*, 149, 38-43.
- Schepis et al. (2011). Gender differences in adolescent marijuana use and associated psychosocial characteristics. *Journal of Addiction Medicine*, 5(1), 65-73.
- Siqueira, L. M, & Crandall, L. A. (2006). Inhalant use in Florida youth. *Substance Abuse*, 27, 27–35.
- Steinberg, L. (2011). *Adolescents*. New York; McGraw-Hill International.
- Stivents, M. (2006). ‘Family values’ and Islamic revival: Gender, rights and state moral projects in Malaysia. *Journal of Women’s Studies International Forum*, 29, 354–367.
- Suara Pembaharuan. (2011), Aceh Narcotic Bureau and National Police of Aceh found Marijuana Field about 157 Hektar Retrieved March 15, 2012 from <http://www.suarapembaruan.com/home/bnn-dan-polda-aceh-temukan-ladang-ganja-seluas-157-hektar/14408>.
- The globe journal. (2011), Aceh Narcotic Bureau develops Narcotic Rehabilitation in Aceh Besar Retrieved March 15, 2012 from <http://theglobejournal.com/sosial/bnn-aceh-bangun-rehabilitasi-narkotika-di-aceh-besar/index.php>.
- United Nations Office on Drugs and Crime. (2011), World Drug Report 2011 Retrieved February 10, 2011 from http://www.unodc.org/documents/data-and-analysis/WDR2011/World_Drug_Report_2011_ebook.pdf