

Dextromethorphan Drug Abuse Against Adolescent Learning Concentration: Literature Review

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ABSTRACT

Background: Dextromethorphan is often misused with excessive doses so that it gives a euphoric effect, a sense of calm, visual and auditory hallucinations. In fact, if taken in the recommended dosage, these pills are useful for suppressing coughs (antitussive) and phlegm-busting. However, it is often misused as a drug pill, because if you take too much, at least 10 pills at a time, it can cause nervous system depression that can become addictive. This study aimed to explore the abuse of the dextromethorphan class of drugs on adolescent learning concentration. **Method:** the researcher used a literature review design. The method used in the literature review is through a systematic approach to analyze data in a simplified approach. The keywords in this study are dextromethorphan drug abuse and concentration in learning. **Results:** Dextromethorphan is often misused with excessive doses so that it gives a euphoric effect, a sense of calm, visual and auditory hallucinations. Dextromethorphan intoxication or overdose can cause hyperexcitability, fatigue, sweating, slurred speech, hypertension, and can cause respiratory depression. **Conclusion:** Dextromethorphan drug abuse is associated with tolerance, addiction or addiction problems which can then develop into drug dependence (drug dependence). Students who experience deviant behavior in the form of drug abuse of the dextromethorphan class will experience impaired concentration while studying.

I. Introduction

Dextromethorphan is included in the category of limited over-the-counter drugs whose benefits are to suppress coughs due to irritation of the throat and bronchial airways, especially in cases of coughs and colds (Tjandra, 2010). Dextromethorphan is often misused with excessive doses so that it gives a euphoric effect, a sense of calm, visual and auditory hallucinations. In fact, if taken in the recommended dosage, these pills are useful for suppressing coughs (antitussive) and phlegm-busting. However, it is often misused as a drug pill, because if it is consumed too much, at least 10 pills at a time, it can cause nervous system depression which can become an addiction (Ministry of Health RI 2014). Therefore, teenagers who consume dextromethorphan drugs in excess and continuously will experience addiction. And will experience a decrease in concentration in learning as a result of the effects of dextromethorphan, the effect of dextromethorphan which if consumed in inappropriate doses will cause a sense of flay and hallucinations so that it can suppress the central nervous system in the brain, so that if adolescents continue to use this drug in In high doses, the performance of the brain will also be disturbed, so that concentration in learning will also be disturbed.

Decree of the Head of the Food and Drug Supervisory Agency (BPOM) of the Republic of Indonesia Number HK.04.1.35.07.13.3855 of 2013 concerning Amendments to the Decree of the Head of the Food and Drug Supervisory Agency (BPOM) of the Republic of Indonesia Number HK.04.1.35.06.13.3534 of 2013 concerning cancellation of permits distribution of drugs containing single-dose dextromethorphan. The decree is effective as of the date of stipulation, which is July 24, 2013. The essence of the Decree of the Head of BPOM is an order to stop production and distribution, withdraw from circulation, and destroy both raw materials, packaging materials, intermediate products, home products and products. become a drug containing single dosage dextromethorphan no later than June 30, 2014. This means that the opportunity for the pharmaceutical industry and its distributors (including pharmacies) to carry out the said activities related to the circulation of drugs containing dextromethorphan has actually passed seven months from the maximum deadline, June 30. 2014. This was done because of the abuse committed by school-age teenagers and the general public in using the drug Dextromethorphan.

Based on data from the Drug Abuse Warning Network of US Emergency Departments in 2014, about 12,584 people came to the emergency department due to problems related to dextromethorphan, which consisted of: 44.3% related to abuse, 30.3% side effects from dose use. therapy, 14.1% as a suicide attempt, and 11.3% by accident.

Based on reports from the California Poison Control System for 6 years from 2012 to 2017 as well as data from the American Association of Poison Control Centers (APCC) and the Drug Abuse Warning Network, there were 1,382 people who experienced dextromethorphan abuse. There has been an increase of 10 times from the number of 48 people from 2012 to 478 people in 2017, increasing by more than 50% every year. The most reported age range is the age of 9-17 years and has also increased from 47.9% in 2017 to 78.5% in 2018. The product that is often used is coricidin HBP cough and cold (68.5%). of the 1,382 people, 52.8% had a minor effect, 41.8% had a moderate effect and the rest had a major effect. In 2010, the FDA reported the deaths of five adolescents related to dextromethorphan use. Based on a survey from Michigan University in 2010, the proportion of students who abuse dextromethorphan was 4% in grade 8, 5% in grade 10, and 7% in grade 12. The APPC stated that there were 52,991 cases related to dextromethorphan in 2010.

Based on the results of a survey by the National Narcotics Agency (BNN) in 2018, dextromethorphan abuse is quite high in Indonesia. At the age of 15-20 years as much as 5.9%. Age 21-30 years as much as 2%, and age 31-40 years as much as 0.4%. The rate of abuse in this group of students has increased to 9.7 percent in 2011.

In this case, attention from the family and control from the pharmacy is needed to minimize or overcome the misuse of dextromethorphan in inappropriate doses. Family attention and control from the pharmacy that a teenager gets will have a good impact on the adolescent's learning process, a positive attitude. When having attention from family and control from the pharmacy, it is hoped that someone can maintain a healthy condition and be more careful in choosing friends. and control the emotional turmoil or curiosity that arises. (Dagun, 2014).

Based on the description above, due to lack of knowledge in adolescents about further effects that will occur in adolescents, researchers are motivated to conduct research with the title "Use of dextromethorphan drugs on adolescent learning concentration".

II. METHODS

In this study, the researcher used a literature review design. Literature review is to provide a framework related to new findings and previous findings in order to identify indications of whether or not there is progress from the results of a study through comprehensive research and interpretation of the results of the literature related to a particular topic which identifies research questions by searching and analyzing relevant literature. using a systematic approach (Randolph, 2009). The method used in the literature review is through a systematic approach to analyze data in a simplified approach. The articles used are focused on original empirical research articles or research articles that contain the results of

actual observations or experiments where there are abstracts, introductions, methods, results, and discussions.

Based on the results of a literature search through Google Scolar publications, PubMed & ProQuest using the keywords drug abuse and dextromethorphan and concentration learning, researchers found 1039 journals that matched these keywords. The research journals were then screened, as many as 123 journals were excluded because they were published in 2010 and below and used languages other than English and Indonesian. The feasibility assessment of 110 journals, duplicated journals and journals that did not meet the inclusion criteria were excluded, so that 8 journals were reviewed.

III. RESULTS

According to research conducted by Meriam Brigitha et al (2013), the results of the study of dextromethorphan abuse in the community in the East Tombariri sub-district, Minahasa district occurred among youth. Information about the abuse of dextromethorphan obtained is knowledge about how to obtain drugs that are not in accordance with drug distribution procedures and the purpose of using them to relieve stress.

According to research conducted by Diah Siti Fatimah, Anas Subarnas (2019) Dextromethorphan is an opioid-derived antitussive drug as well as an analgesic that is widely used as a cough medicine. This drug is widely used in several over-the-counter cold and cough medicines, both generic and branded drugs. Including the class of over-the-counter drugs, these drugs can be obtained easily without the need for a doctor's prescription. This causes easy abuse of dextromethorphan, especially by adolescents for recreational purposes.

The results of research conducted by Faiq (2017) show that most respondents have a mild level of dextromethorphan drug abuse in adolescents, namely 78 respondents (88%) and most respondents have a moderate level of violent behavior in adolescents, which is 80 respondents (90%). Chi square test obtained value = 0.015. value (0.05), then H_0 is rejected, meaning that there is a relationship between dextromethorphan drug abuse and the incidence of violent behavior in adolescents in Kedungrejo Village, Muncar District, Banyuwangi Regency.

The results of research conducted by Alimuzhafar (2018) show that the attitude of public transport drivers in the city of Kendari has a positive attitude towards drug abuse. The most dominant factor that causes drug abuse in public transport drivers is due to the influence of friends. The positive support that transportation drivers get makes them motivated to adopt the behavior of consuming drugs indiscriminately. In addition, the ease with which these drugs are obtained is a big impetus for the abuse of these drugs.

According to research conducted by Muhammad Soleh Pulungan (2015) Research Results; that from 1,811 respondents it was known (90.28%) that they had never used drugs, while (3.97%) had used but had stopped, while those who were still actively using were (2.26%).

According to research conducted by Alya Nurmaya (2016), the results showed that the factors causing drug abuse in the first subject were individual factors (personality) and environmental factors (peers). While the factors that cause drug abuse in the second subject are family factors (broken home) and environmental factors.

According to research conducted by Sri Yuni Murtiwiidayanti (2018), the results of the analysis show that there is a positive influence of adolescent knowledge on attitudes and concerns in overcoming drug abuse. Adolescent knowledge about drugs gives an effective contribution to the attitudes and concerns of teenagers by 45.140 percent and there is still 54.860 percent due to other factors.

According to research conducted by Maydiya Restacendi Nur'artavia (2017) The results of the study show that 80.95% of students who abuse drugs are male, most of whom are in their early teens (54.5%), and currently pursuing high school education. (52%). Drug of Choice and the most frequently abused types of drugs are double L, 97.35% and 88.89%, respectively, and mostly 1 type (91.53%). The districts with the most students abusing drugs are Sawahan and Tegalsari sub-districts.

IV. DISCUSSION

Based on the results of research conducted by several studies. Shows that the above evidence strengthens the suspicion that excessive dextromethorphan drug abuse greatly affects learning concentration in adolescents. Untreated drug abuse can have a euphoric effect, a sense of calm, visual and auditory hallucinations, resulting in disturbed central nervous system changes.

The use of drugs that are not in accordance with the rules, apart from being harmful to health, is also a waste of time and money because they have to continue treatment efforts to other health services, such as puskesmas or private doctors (Supardi and Raharni, 2016). This drug abuse is associated with tolerance, addiction or addiction problems which can then develop into drug dependence (drug dependence). Users are generally aware that they made a mistake, but they can no longer avoid this habit (Depkes RI, 2016).

Dextromethorphan is included in the category of limited over-the-counter drugs whose benefits are to suppress coughs due to irritation of the throat and bronchial airways, especially in cases of coughs and colds (Tjandra, 2010). Dextromethorphan is often misused with excessive doses so that it gives a euphoric effect, a sense of calm, visual and auditory hallucinations. Dextromethorphan intoxication or overdose can cause hyperexcitability, fatigue, sweating, slurred speech, hypertension, and can cause respiratory depression. If used together with alcohol, the effect can be even more dangerous, namely causing death (BPOM, 2012).

Dextromethorphan abuse is common. The reason, besides being cheap, this drug is also easy to get. Its abuse includes consumption in large doses (tens of grains) or consuming it with alcohol or drugs. The combination of dextromethorphan with alcohol used by respondents causes a mild stimulant effect that is fast because pharmacologically alcohol-soluble drugs will accelerate the ionization process so that it easily binds to receptors and quickly gives effect (the right dose produces a therapeutic effect, a higher dose produces a toxic effect) (Harkness, 2014).

Excessive use of dextromethorphan has the potential to cause brain damage. Side effects of dextromethorphan include euphoria, disorientation, paranoia, and hallucinations. In addition to the above effects, it can also cause respiratory depression by inhibiting the brainstem breathing mechanism. However, until now there is no data on histopathological features that occur in the brain when dextromethorphan is used in excess (Terry, 2010).

According to Uswatun (2013) concentration is defined as the concentration of thinking power on an object being studied by setting aside everything that has nothing to do with the object being studied. Concentration when learning requires an educational situation, where to create it there are main elements. The first element, students are seen as components who receive stimulation (stimulus) from their environment to want to learn because they feel the need. The second element, understanding the goals to be achieved, so that students will feel successful if they can master the subject matter. The third element, there is a reason that is the driving force for success.

The inability of students to build a way of thinking (concentration) to respond and interpret lessons related to the teacher's teaching methods and also the atmosphere in the classroom. There are several causes that cause this to happen, including teaching based on the classical system, the selection of teaching methods that are not appropriate, teachers are less able to stimulate each student to participate actively in learning. This can be seen in the number of students who lean on the table while talking with their seatmates. The hot class atmosphere due to the absence of air conditioning, as well as the condition of students who resist feeling sleepy and hungry during the day also contributed to the decline in students' concentration levels. Often students are busy fanning because they feel hot rather than paying attention to the explanation of the material from the teacher (Hendawan, 2015).

According to researchers, the drug dextromethorphan is one of a limited group of over-the-counter drugs, which in this case can still be obtained without a doctor's prescription. The drug dextromethorphan has the same effect as drugs, which is to offer pleasure and tranquility with the opiate, which is what souls who are tired of problems need. Dextromethorphan can get rid of complex problems from the brain so many people abuse the drug dextromethorphan as a sedative or medication to relieve stress. Students

are a group that is still vulnerable to all new things without lack of consideration, students also have a high level of risk for stress where this is due to pressure from family, as well as pressure from school which causes students to easily experience stress. So it is very likely that students can use the drug dextromethorphan in the wrong way to divert the stress they are experiencing. As a result of hypoxia, changes in the central nervous system occur. This can cause teenagers or students to experience a decrease in concentration in learning.

V. CONCLUSION

The results of this literature review show that dextromethorphan drug abuse is associated with tolerance, addiction or addiction problems which can then develop into drug dependence (drug dependence). Students who experience deviant behavior in the form of drug abuse of the dextromethorphan class will experience impaired concentration while studying. Generally, students have good concentration, especially in the morning and will continue to decline in one lesson day according to the ability of their respective brains to digest each lesson. However, students who take dextromethorphan drugs will easily lose concentration in learning.

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