

# **Systematic Review: The Effectiveness of Intervention to Prevent Substance Misuses Toward Teenagers**

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## **ABSTRACT**

### **Introduction**

Many unhealthy behaviors are started from teenage ages and become challenges toward main issue of society healthiness. The misuse of substances toward individuals, families, and societies has great and cumulative impacts, contributing to social, physical, and mental healthiness.

### **Methods**

A systematical review approach was applied to evaluate the effectiveness of intervention implemented to prevent the misuse toward teenagers. In this review, RCT and literature study methods were involved. To analyze the data, meta-analysis was used.

### **Results**

The findings reported that a total of 25 articles retrieved focusing on the intervention of alcohol use, smoking, and drug use. The articles then were selected using the PRISMA diagram resulting in 11 articles identified met the inclusion criteria.

### **Conclusion**

The findings show the groups of teenage smokers need further investigation.

### **Keywords**

*Prevention; Intervention; Misuse Substance; Teenagers*

## **BACKGROUND**

Teenagers is acknowledge as early period of behaving and the condition affects not only on current condition but further condition in the future. Unhealthy behaviors done by them such as smoking, drinking, and consuming drugs are started from teenagers; those are strongly improving morbidity and mortality, embodying as main challenge issues. Unemployment, healthiness, crashes, suicides, mental disorder, hopeless are caused by substance misuses and contributing as major general factor <sup>1</sup>.

Epistemology data gained from various epistemology researches done by National Drug Agency, in cooperation with University of Indonesia Healthiness Research Center in 2008 shows the estimated data about 3.6 million Indonesian people aged from 15 – 64 (1.995 from the whole people) use narcotics, alcohol, psychotropic, and addictive substances (NAPZA) regularly in which 31% from this group or about 900,000 people being addicted to heroin and more than a half becoming injective heroin consumers <sup>2</sup>.

The impacts of NAPZA is a complex bio-psycho-socio-cultural problem. Therapy and rehabilitation of the impacts must be holistic in nature and consider biologic, psychology, personality, and socio-cultural factors in broad meaning, including spiritual, economy, and legal<sup>3</sup>.

The misuses have bad impacts toward the consumers, families, and societies. The cumulative impacts contribute to social, physical, and mental problems which are actually much more precious in healthiness terms<sup>4</sup>. States some factors increasing the risks to start or continue the misuses of substances. It is affected by economy and social status; affective smoking, alcoholic, and drug abuser peers<sup>5</sup>. Globally, the use of tobacco or cigarette are the main cause but can be prevented to lessen early mortality in which adult smokers starting to smoke in teenagers' ages<sup>6</sup>. The prevalence of smoking toward girls and boys may vary in each region or country. Among them, 1 in each 10 girls aged from 13 until 15 years, and 1 from each 5 boys aged 13 until 15, have consumed tobacco<sup>7</sup>. Besides drugs and tobacco, currently being the global burden disease appearing on teenagers, alcoholic consumption also plays a role. About 4% of alcohol misuses are teenagers<sup>2</sup>. The alcohol consumption both in teenagers or adolescent are now increasing.

Currently, reports many men consuming alcohol compared to woman. However, this gender difference seems lower in younger ages. Meanwhile, misuses of marijuana is related to brain intellectuality decreases before age 18 and causes injury risks in adolescent ages<sup>5</sup>. Various prevention can be given through socialization done by medical workers in school, society, and the system of health nursery with general purposes to meet the case with references and the cure as well as effort to decrease risky factors<sup>8</sup>. This article is the part of review series done to evaluate the intervention on teenagers. The focus is the misuses of substances in teenager, such as the misuses of drugs, cigarette, and alcohol.

## **METHODS**

This article systematically reviews literature published until October, 2017 to identify the systematic references related to the intervention of the substances toward teenager population. The population is defined as 11 until 19 aged individuals. However, because there are many reviews stating the interval age of teenager is from 15 until 24 years old, then an exception is done toward targeted teenager aged review. To find the articles, there are no limitation on the initial date to search the articles nor the geographic adjustment. The reviewer considers all available references systematically on the intervention of the misused substances by teenagers.

The area of look up strategy used is combination between appropriate keywords, titles, and medical subjects. The look up is done in Mendely and PubMed. Firstly, abstract screening is done, then continued by reading the text completely. After taking all the complete texts from all reviews containing determined exceptional criteria, the data can be used in the review. The screened information are (1) the characteristics of the attached studies; (2) description of the method, participants, intervention, and findings; (3) measuring the effects of the treatment;

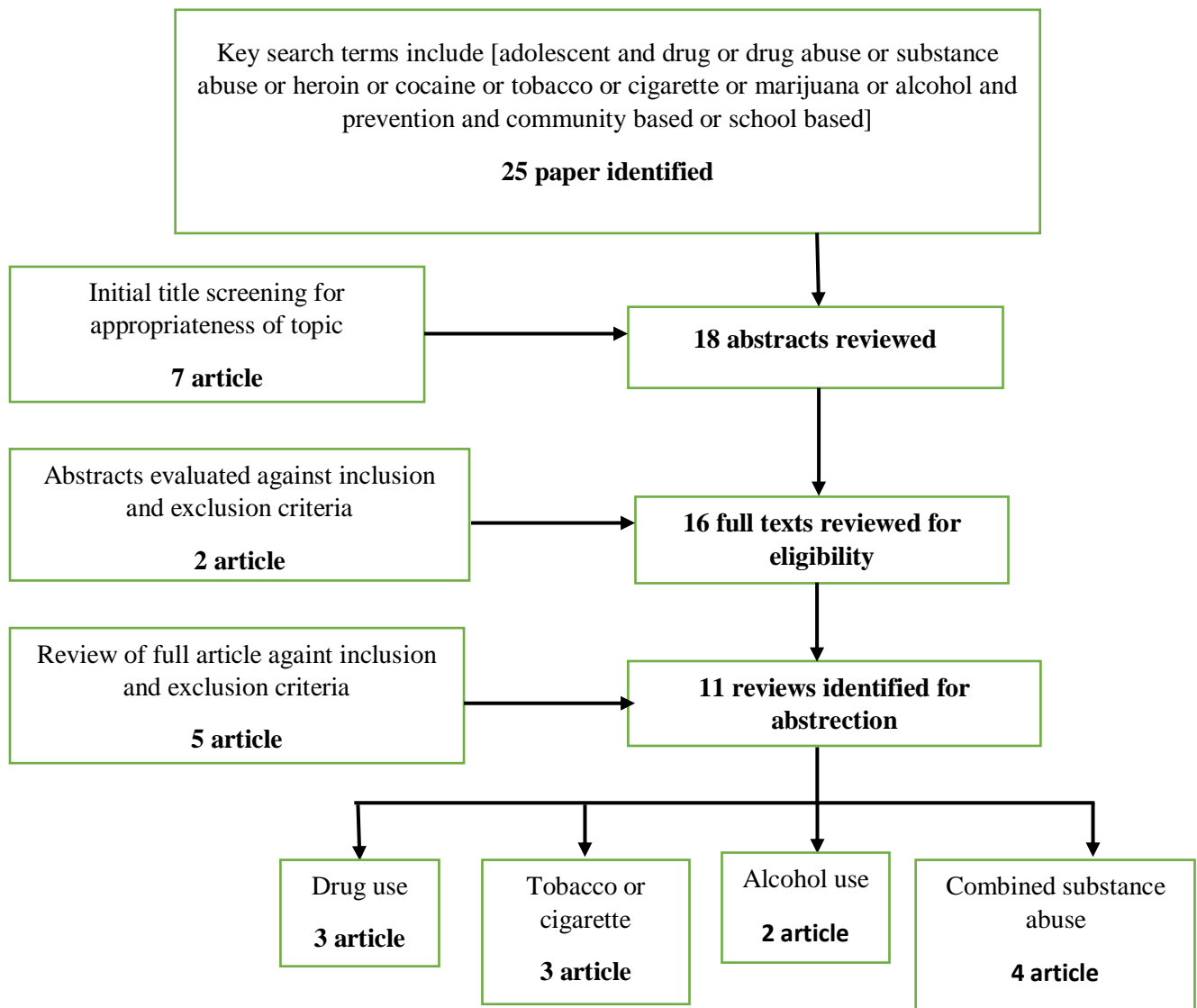
(4) methodology problems; and (5) the bias risks of the instruments. This article judges and reports the quality of attached reviews by using PRISMA assessment criteria.

## RESULTS

During the looking ups, this article identifies 25 potential and relevant preview titles, 7 articles with similarities from various different sources, 2 articles using qualitative study are found. From 16 articles, 5 articles have no relevancy to the abstract. Then, 11 articles assumed to meet the inclusion requirement. Then, 16 complete text of them, are reviewed. Finally, 11 articles are assumed to meet the requirements and inclusive criteria determined. In clarifying the reviews, three groups are created to report the findings:

1. The intervention of cigarette or tobacco misuses.
2. The intervention of alcohol misuses.
3. The intervention of drug abuse.

This article reports 9 reviews focusing on various intervention for the misuses of cigarette or tobacco in teenagers. Most of them usually investigates the function of family and how to introduce the problems of the misuses toward children aged from 11 until 14 years.



### **Figure 1. Prisma Chart**

#### **The Intervention of Smoking Misuses**

After the look ups from 4 systematic review focusing on smoking or tobacco misuses of teenagers, two of them focus on school based intervention. Meanwhile, the other two articles focus on family based intervention. The school based intervention occurs in teenagers<sup>9</sup>. The review is based on 10 studies evaluating the impacts of smoking having school based intervention to prevent them smoking. The prevention applied in school is done by announcing commitment to not smoking in school environment. In this article, it shows the effectiveness of the announcement to lower the number of smoking students<sup>10</sup>.

There are two reviews of family based intervention evaluating the impacts of the intervention<sup>11</sup>. Another article evaluates its coordinated impacts toward large communities supporting smoking habit<sup>12</sup>. The intervention in the article can involve society figures, national health agency, city board government, social workers, employers, volunteer organization, sport organization, health care services, society organization, media, retailer, school, government, officers, or working place.

#### **The Intervention to Cigarette Misuses**

After seeking the findings from 4 reviews about cigarette or tobacco misuses on teenagers, two articles focus on school based intervention while the others are on family. Specifically, the school based interventions focus toward the misuse of cigarette and tobacco in teenagers<sup>9</sup>. Review based on 10 researches evaluating the impacts of smoking taking place at school to prevent young people smoking, school based intervention states the commitment to prevent smoking in school environment. From the articles, they show the prevention is effectively done to decrease the numbers of smokers<sup>10</sup>.

There are two reviews of family based intervention toward cigarette misuses<sup>11</sup>. Meanwhile, the others evaluate the coordinated intervention impacts toward large society supporting to prevent smoking<sup>12</sup>. The intervention in the article involves society figures, national health agency, city board, social workers, employers, volunteer organization, sport organization, health care services, society organization, media, retailers, schools, governments, officers, or working places.

**Table 1.**

Number	Author & Year	Purposes	Method	Data Analysis	Intervention
1	[9]	School based programs to prevent smoking	<i>Single blinded randomized controlled trial (RCT)</i>	Meta-analysis	Implementing information of the curriculum at school about the dangers and impacts of smoking toward social life.
2	[10]	Meta-analysis on the effects of smoke free class competition on smoking prevention in adolescents.	<i>RCT</i>	Meta-analysis	Giving intervention toward “Smoke Free Class” as a program at school to prevent and commit on smoking issues.
3	[12]	Interventions for tobacco misuse prevention in indigenous youth.	<i>RCT</i>	Meta-analysis	Intervening must consider these matters: (1) Targeting whole teenagers at schools, homes, and communities (2) Telling the purpose of <i>smoking education</i> to teenagers. (3) Cooperating with surrounding society through TV media, advertisement, and health agencies. .
4	[11]	Primary care relevant intervention on tobacco misuse prevention and cessation in children and adolescent: A Systematic evidence review for the US preventive service task force.	<i>RCT</i>	Meta-analysis	Doing intervention based primer focuses on substance misuse problems in teenagers.

5	[13]	Efficacy of alcohol intervention for first year college students: A meta-analytic review of RCT	<i>Studies</i>	Meta-analysis	Intervention is usually given during 1 single session lasting less than an hour. It is given to both individuals and groups.
6	[14]	Effectiveness of school based preventive intervention on adolescent alcohol use: A meta-analysis of RCT	<i>RCT</i>	Meta-analysis	A school based program focuses on the misuse of alcohol in school teenagers.
7	[15]	Universal family based prevention program for alcohol misuse in young people.	<i>RCT</i>	Meta-analysis	A psycho-social based prevention exclusively purposes to improve awareness about alcoholic dangerous potency so that teenagers will not tend to misuse it.
8	[16]	Computer-delivered intervention to reduce college student drinking: A meta-analysis	<i>Studies</i>	Meta-analysis	Promoting drug educational program to develop health community. Psycho-education intervention through CD or DVD given to sample with purpose to socialize healthiness without cause students' boredom.
9	[17]	Universal school-based prevention for illicit drug use.	<i>RCT</i>	Meta-analysis	Primary preventive intervention based school is classified into: Educational approach, intervention of all substance included alcohol, and the extractions related to those forbidden substances..
10	[18]	A meta-analytic review of school based prevention for cannabis use. Health education	<i>RCT</i>	Meta-analysis	School based programs targets marijuana misuses of teenagers.

11	[19]	behavior. The effectiveness of counseling to decrease Score of Napza misusers in Rumatan Metadon Clicnic	<i>RCT</i>	Double regressive linier analysis	In line with RCT, the sample allocated by using randomization into two groups, they are 14 controlled groups and 14 experimental groups. All subjects are men.
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### The Intervention of Alcohol Misuses

This article reports findings from 8 reviews focusing on alcohol misuse interventions among teenagers. Four reviews focus on school based and higher education based intervention. Meanwhile one reviews focuses on family and community. A review evaluates higher education based intervention to prevent alcohol misuse showing lower quantity and frequency of drinking. It is found a little problem among teenagers in group intervention compared to control group<sup>13</sup>. Another review evaluates school prevention based program shows, generally, the impacts upon alcohol misuse based school intervention among teenager is lower but positive among studies continually reporting the action. Meanwhile, no effect is found in category based finding research<sup>14</sup>.

One of family and society based interventions evaluating the impacts upon schooling aged teenagers<sup>15</sup>. The existence of policy intervention, one of them evaluating<sup>16</sup>. One of multi-components intervention evaluates universal and multi-component preventive program effectiveness upon school aged children misuse alcohol<sup>15</sup>. Twelve from 20 experiments prove the effectiveness, by having effects from 3 months until 3 years. Some evidence about multi-component intervention for alcohol misuse prevention for younger individuals are not effective. However, a few evidence telling the intervention with some components is more effective than single component.

### The Intervention for Drug Misuses

Intervention is found in drug misuses among teenagers. The articles focus on school based intervention also uses Meta-analysis method are done by<sup>17,12</sup>. The articles evaluate the impacts of school based intervention upon marijuana misuses proving to have positive impacts to decrease the misuse compared to individual control intervention<sup>18</sup>. In the article shows the program combining preventive model significantly is more effective than teenagers treated only based social influence model. States effective counseling to decrease the misuse level of Napza is about 26 points lower meaningfully compared to those without counselling<sup>19</sup>.

## DISCUSSION

This review involves 11 articles focusing on intervention of cigarette or tobacco, alcohol, and drug misuses showing between smoking or tobacco misuses, natural and school based intervention program and SFC are effective to decrease the initiations of smoking. However,

there is a lack in its long term and follow ups for the impacts of smoking or tobacco misuses applied at school program. Intensive family based intervention also proves effective to prevent smoking. By coordinating to the society based area which also shows the positive impacts on smoking behaviors. Campaigns from mass media involving solid theoretical principle, formative researches in planning the campaign's message, and through message broadcast have shown positive impacts cigarette because its intensity based internet is higher in term of period. The evidence of internet, initiative, policy, and intensive based interventions needs further research.

Article about intervention of school based alcohol misuse giving socialization by decreasing the frequency into minimum gains positive response. Meanwhile, family based intervention has little impacts. For drug users, school based intervention by combining among social competence and social effect approach has shown protective and preventive effects toward those drugs and marijuana. Although the review is well arranged, avoiding any duplication and creating possibility to quickly review, has potential limitation. The intervention with primary data but still has not been covered by systematical review, will not be attached. It is expected to the next researchers to be more detail.

## **CONCLUSIONS**

From the literatures can be concluded many intervention which can be used to prevent substance misuse among teenagers. The interventions are program at schools, educative CD or DVD about drug misuses, primary treatment toward the abuser, or positive impact counseling to the already misused them to reduce the misuses. It is started from individuals, families, societies, and at schools.

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