

## Fear appeals to reduce alcohol abuse in adolescents using group therapy

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### ABSTRACT

Alcohol abuse is a maladaptive pattern of substance use which is manifested by repeated and significant adverse consequences related to repeated alcohol use. Fear appeals are persuasive messages designed to frighten people by explaining the impact that will occur if they do not follow the suggestions and recommendations given. The aims of this study are to determine the effect of fear appeals in lowering alcohol abuse in adolescents. This research is a quantitative study with an experimental model. The design of this study is a pretest-posttest control group experiment model. Subjects were 12 male teens who had abused alcohol. Subjects were divided into two groups: the experimental group and the control group. Group therapy intervention was given to the experimental group. Fear appeals were measured by Risk Behavior Diagnosis (RBD) and alcohol abuse using Alcohol Use Disorders Identification Test (AUDIT). Data were analyzed using Wilcoxon test, Mann Whitney and Spearman. The results showed that group therapy was able to increase fear appeals in the experimental group, increasing fear appeals are effective to reduce alcohol abuse in adolescents.

**Keywords:** *Fear Appeals, Alcohol Abuse, Teen, Group Therapy*

**D**rug use in Indonesia is growing significantly, estimated number of drug users is 3.8 million to 4.1 million people, or around 2.10% to 2.25% of the total population of Indonesia is at risk of exposure. Number of drug abuse in the last year (2017) 3376115 people, in the 10-59 years age group. The largest proportion of abuse by group, 59% Workers, 24% Students and 17% General Population. 3.8 million people in Indonesia have a history of drug use, 46% of them use alcohol (BNN, 2017). According to WHO alcohol use at the age of 15-19 years approximately 26.5% of the total population of 155 million adolescents (World Health Organization, 2018).

In adolescence, consuming alcohol becomes a status symbol. Consuming alcohol begins in the early school years. They consume alcohol as a group, because drinking alcohol is limited

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to a group during adolescence. Teens are at high risk for alcohol abuse along with their peer group (Hurlock, 2002). If alcohol consumption has been excessive and makes a maladaptive pattern such as significant and repeated bad consequences related to alcohol consumption, it can be said that alcohol abuse occurs. Alcohol abuse is an excessive consumption of alcohol which is manifested by a failure to fulfill obligations to school and work, problems with the law due to alcohol use, and continuous alcohol use despite having related problems (American Psychiatric Association, 1994).

Alcohol use has a significant impact on individuals, causing 3 million deaths (5.3% of all deaths) (World Health Organization, 2018). Adolescents who use alcohol have problems with brain circuits such as the hippocampus which are very vulnerable to the effects of alcohol, this neurocognitive problem can last into adulthood (Welch, Carson, & Lawrie, 2013). Alcohol-related abuse contributes to absence in school and low productivity (Balsa, Giuliano, & French, 2012; Odeku & Odeku, 2015). Alcohol abuse is associated with an increased risk of accidents, violence and suicide (Lamis & Malone, 2013; Pompili et al., 2010; Razvodovsky, 2012). Teens who use alcohol at an early age will persist into adulthood and cause an addiction (Marshall, 2014).

There are various factors that cause alcohol abuse in adolescents, one of which is a genetic factor that contributes as much as 40% -60% in alcohol use (American Psychiatric Association, 2013). Adolescents with a positive family history of alcohol problems have a greater risk of developing alcohol problems at a younger age (Edenberg & Foroud, 2014; Marshall, 2014; Mayfield, Harris, & Schuckit, 2008; Trucco, Nigg, & Burmeister, 2016).

Environmental factors around individuals also play an important role in alcohol abuse behavior, environmental factors including cultural attitudes towards drinking and alcohol availability (American Psychiatric Association, 2013). The influence of the peer group becomes more important, teenagers gather with friends who use alcohol are at greater risk for engaging in similar behavior. (Bremner, Burnett, Nunney, and Ravat, 2011; Cutrín, Gómez-Fraguela, and Sobral, 2017; Guyer, Choate, Pine, & Nelson, 2012). Neglect and overprotective parenting style were significantly associated with children's involvement with alcohol (Cutrín et al., 2017). The use of drugs and alcohol, 6.88 times greater in adolescents with a history of delinquency and violence (Koh, Peh, Cheok, & Guo, 2017)

Individual personalities also contribute to alcohol abuse, one of which is high impulsivity is associated with early onset of more severe alcohol abuse. Repetitive antisocial behavior often associated with alcohol and other substances. Individuals with lower levels of self-control tend to develop a substance abuse (American Psychiatric Association, 2013). Externalization problems in childhood, especially behavioral disorders have been shown to predict alcohol and substance use in adolescents (Farmer, Seeley, Kosty, Gau, & Duncan, 2014; Young, Sweeting, & West, 2008). Adolescents with bad influence towards regulation and depression or who experience stress can use alcohol and other drugs to treat himself (Bilevicius et al., 2018; Dierker, Selya, Lanza, Li, & Rose, 2018; Minnick & Clapp, 2014).

Cognitive process in individuals who consume alcohol is also a causative factor of alcohol abuse. In adolescents they think and believe consuming alcohol can have a pleasing effect, such as being able to forget about the problems and make themselves confident. Because the pleasant effect that is felt when consuming alcohol, it is necessary to give them a persuasive message to remind adolescents about the negative effects that will occur if they continue to consume alcohol. One of the ways is to use the message or media that contain frightening or

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threatening elements or threatening and provide a recommendation that can be done such as fear appeals.

*Fear appeals* are commonly used in preventive act such as the dangers of smoking health promotion, the use of fear appeals in an effort to reduce and discontinue treatment of alcohol abuse is still limited. Research (Moscatto et al., 2001) that presents fear appeals messages through campus speakers about the threat and impact of alcohol to students the threat and impact of alcohol use to the students, from the results of spreading messages in the form of threats and negative effects, alcohol use among students decreases. Strong fear appeals messages and good recommendations (suggestions) result in large behavioral changes. (Witte & Allen, 2015).

Interventions are designed as a way of conveying fear appeals to adolescents who abuse alcohol. Group therapy interventions are used as a medium or a way to convey fear appeals. Group therapy was chosen because adolescents spend the most time with their peers, so the influence of peers in attitudes, conversation, interests, appearance, and behavior outweighed the influence of family. Because peers exert a great influence on adolescents, group therapy is given so that adolescents can carry out social interaction and mutual support regarding the fear appeals message (Hurlock, 2002). Group therapy is designed to promote psychological growth and correct psychological problems through cognitive and affective exploration of interaction between members and between members and therapists. Some research results supports that group therapy can be one of the interventions to reduce alcohol abuse (Battjes et al., 2004; Greenfield, Sugarman, & Freid, 2014; Weiss, Griffin, & Jaffee, 2009).

Based on the explanations above, according to some previous research results when the fear appeals messages are properly packaged and threatening, then giving appropriate recommendations can prevent negative impacts. The aim of the study was to determine the effect of fear appeals to reduce alcohol abuse in adolescents. To convey fear appeals using the intervention method in the form of group therapy. The hypothesis in this study is  $H_0$ : there is no negative effect of fear appeal on decreasing alcohol abuse and  $H_1$ : there is a negative effect of fear appeal on decreasing alcohol abuse.

## METHODOLOGY

### *Sample*

This study using experimental design by giving treatment to the research sample in order to see the effect of treatment on the variable X (independent) to variable Y (bound) by using a pretest-posttest control group design model (Kerlinger, 2006). The study design was divided into two randomized groups, the experimental group that received a treatment and control group which did not receive a treatment. Research subjects were 12 male aged 15-16 years old and had abused alcohol for the past year.

### *Instruments*

Two measures were used in this study,

1. Risk Behavior Diagnosis (RBD) scale is used to measure fear appeals, the RBD scales measures four constructs (severity, susceptibility, response efficacy, and self-efficacy) that are same from four aspects in the theory of fear appeals EPPM and adjusted to the problem in the study, alcohol abuse. This scale has a Cronbach alpha value of 0.85 to 0.95. (Kim Witte et al., 2017)
2. The Alcohol Use Disorders Identification Test (AUDIT) scale is used to measure alcohol abuse, because this scale is used for the early identification on alcohol

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consumption and alcohol-related problems. This scale has a Cronbach alpha value of 0.80. AUDIT scale has a 10-item questions and AUDIT scale is a Likert scale with 5 answer choices : never, monthly, 2-4 times a month, 2-3 times a week, 4 or more times a week. One example of the item is "How often do you consume alcohol?".

### *Procedure*

Preparation sessions: Determine schools that are willing to facilitate research needs, then ask for guidance from counseling teacher to be able to gather children who consume alcohol. There a 15 tenth grade high school boys. 15 subjects were given a pretest beforehand and researchers informed research activities to be carried out and asked for willingness to the research subjects. At the end of the session, there were 12 people who were willing to participate in the study. The research subjects consisted of 12 male, divided into two randomized groups, experimental and control groups. Then the researchers conducted a homogeneity test on the pretest data which were not significantly different or homogeneous.

Intervention stage the experimental group is a group therapy that is designed to adjust with aspects of the of the fear appeals theory. Intervention was given in four sessions and six meetings with a period of approximately one month. The first session of intervention was building rapport and identification of problems regarding the history of alcohol use. The next session the therapist gave a health threat in the form of exposure to negative impacts and health risks that the subject will experience when consuming alcohol continuously. The next session discussed and provided recommendations that subjects could do to avoid negative impacts, one of which is reduce alcohol use. At the end of the session the researcher ended the intervention session and conducted a posttest of each scale in each research group.

### *Data Analysis*

The data were analyzed using SPSS to see the decline and differences from the interventions that have been made. The analysis was conducted by comparing the results before and after the intervention to see how the conditions of fear appeals and alcohol abuse in the study subject. The analysis used is non-parametric statistical Wilcoxon test to see differences in the results of the pretest and posttest in each group, the Mann-Whitney to see the result of differences in each group, and the Kendall's test to see the effect of the X and Y variables in the experimental group.

## **RESULTS**

### *Research Data Description*

Description of research data as follows:

*Table No. 1 Description of Data*

| Group      | Variables            | Pretest |     | Posttest |     |
|------------|----------------------|---------|-----|----------|-----|
|            |                      | M       | SD  | M        | SD  |
| Experiment | <i>Fear Appeals</i>  | 18.8    | 1.7 | 26       | 1.6 |
|            | <i>Alcohol Abuse</i> | 19.3    | 2.0 | 13.1     | 2.4 |
| Control    | <i>Fear Appeals</i>  | 19.5    | 1.8 | 19.8     | 1.9 |
|            | <i>Alcohol Abuse</i> | 18.5    | 1.8 | 19.3     | 2.0 |

Based on the data in Table 1, the results of the pretest fear appeals pretest in experimental group were in low category and pretest alcohol abuse was in high category. The results of the pretest in control group and experiment group were similar.

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After being treated, there are alteration in the result. The post-test fear appeals in experimental group was in high category and post-test alcohol abuse was in low category. Whereas in control group the result of the fear appeal and alcohol abuse post-test were the same as the results of the pretest, fear appeals were in the low category and alcohol abuse was in the high category.

Based on the test results of homogeneity test variance of fear appeals subject data, has a significance value (Sig) Based on Mean 0.693, decision making in homogeneity test if the value (Sig) Based on Mean > 0.05. then  $0.693 > 0.05$ , which means the data variance is said to be homogeneous or not significantly different. The results of the data variance homogeneity test on alcohol abuse have a significance value (Sig) Based on Mean  $0.934 > 0.05$  then the variance of data is homogeneous or not significantly different. According to the results of the homogeneity test, the get data variance on the two variables are homogeneous or not significantly different.

### ***Manipulation check***

In this study the manipulation check was carried out by the Mann Whitney and Wilcoxon test to determine the differences in the experimental and control group after being treat in the form of group therapy.

**Table No. 2 Manipulation Check (Mann Whitney)**

| Variables           | N  | U     | p     |
|---------------------|----|-------|-------|
| <i>Fear appeals</i> | 12 | 0.000 | 0.004 |

In Table 2, the results of Mann Whitney test conducted on two research groups: control group and the experimental group, each group consists of 6 people and a total number of people are 12. In the fear appeals variable, the value of the Mann-Whitney test coefficient is 0.000 and p score equal is 0.004, with a probability value of 0.05. It can be concluded that there are significant differences in fear appeals between the control group and the experimental group. Based on the data and results above, the manipulation provided in the form of group therapy in the experimental group managed to increase fear appeals.

**Table No. 3 Manipulation Check (Wilcoxon)**

| Groups     | Variables           | Pretest |     | Posttest |     | Z      | p     |
|------------|---------------------|---------|-----|----------|-----|--------|-------|
|            |                     | M       | SD  | M        | SD  |        |       |
| Experiment | <i>Fear Appeals</i> | 18.8    | 1.7 | 26       | 1.6 | -2.232 | 0.026 |
| Control    | <i>Fear Appeals</i> | 19.5    | 1.8 | 19.8     | 1.9 | -1.414 | 0.157 |

In Table 3, the Wilcoxon test results, the pretest and posttest scores of variable X are fear appeals in the experimental group in the form of (M = 18.8, SD = 1.7) and (M = 26, SD = 1.6) there is a difference in the average value of pretest and posttest, the average posttest score is 26 greater than the average pretest score 18.8. With a p-value less than 0.05, which is  $0.026 < 0.05$  which means there is a significant increase between the pretest and posttest fear appeals variable in the experimental group after treated with group therapy.

The results of the analysis in Table 3, the pretest and posttest scores of variable X that is fear appeals in the control group are (M = 19.3, SD = 1.8) and (M = 19.8, SD = 1.9) there is very little difference in the pretest and posttest results of the control group 19.3 and 19.8. With a p-

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value greater than 0.05, which is  $0.157 > 0.05$  which means there was no significant increase in the control group because no treatment was given.

### ***Hypothesis Testing***

Effect of Fear Appeals Variable (X) and Alcohol Abuse (Y)

The next test using Kendall's tau to determine the relationship between two ordinal scale variables. In this study testing the influence of variable X and Y in the experimental group to see how strong the relationship between variable X (fear appeals) and Y (alcohol abuse).

***Table No. 4 Effect of Fear Appeals and Alcohol Abuse***

| Variables         | N | p     | Correlation Coefficient |
|-------------------|---|-------|-------------------------|
| Effect of X and Y | 6 | 0.049 | -0.816                  |

In Table 4, the correlation coefficient results obtained with the value -0.816, which means the effect of X and Y have a strong influence. Correlation coefficient value is negative -0.816 then the relationship between the two variables is not unidirectional, which means if variable X increases, Y decreases. Then the p value of 0.049 is less than 0.05, which means the relationship/influence between the variables X and Y is significant. It can be concluded from Spearman Rank test that the variables X and Y have a strong relationship that is not unidirectional and have significant value.

### ***The Difference of Mean Alcohol Abuse (Y)***

In the mean difference, researchers examined the results of alcohol abuse variable score and the results of the fear appeals variable scores in each group to answer the hypothesis in this study. Here is a table of differences in alcohol abuse and fear appeals variables:

***Table No. 5 Mean Difference Alcohol Abuse (Y) in each group***

| Groups     | Variables     | Pretest |     | posttest |     | Z      | p     |
|------------|---------------|---------|-----|----------|-----|--------|-------|
|            |               | M       | SD  | M        | SD  |        |       |
| Experiment | Alcohol Abuse | 19.3    | 2.0 | 13.1     | 2.4 | -2.226 | 0.026 |
| Control    | Alcohol Abuse | 18.5    | 1.8 | 19.3     | 2.0 | -1.633 | 0.102 |

Based on the results in the Table 5, the results of the alcohol abuse variable pretest score in the experimental group were (M = 19.3, SD = 2.0) the pretest results were greater than the results of the posttest scores on the alcohol abuse variable (M = 13.2, SD = 2.4). The mean pretest score value is greater than the mean posttest value of the alcohol abuse variable which is  $19.3 > 13.2$ , which means that there is a difference in the form of a significant decrease between pretest and posttest in the experimental group. With a p-value less than 0.05 which is 0.026.

The control group got the pretest variable score of alcohol abuse (M = 18.5, SD = 1.8) and posttest scores for variable alcohol abuse (M = 19.3, SD = 2.0), which means the mean pretest score is smaller than the posttest variable for alcohol abuse in the control group  $18.5 < 19.3$ , which means there is significant decrease between pretest and posttest control group. With a value of  $p > 0.05$  which is 0.102.

In the results of data analysis, it can be concluded that using group therapy is effective to increase fear appeals, with increasing fear appeals effectively and being able to reduce alcohol abuse in the experimental group that received treatment. Thus increase in fear appeals

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is effective in reducing alcohol abuse in adolescents. It can be concluded that the  $H_0$  research hypothesis is rejected and  $H_1$  is accepted, which means there is a negative relationship between fear appeals to decrease alcohol abuse, increased in fear appeals decreased alcohol abuse.

### DISCUSSION

Based on the results of data analysis there are differences between control and experimental groups. The results of the posttest fear appeals in experimental group got a higher score than the control group and the analysis was significant, which means that there were difference in fear appeals in the experimental and control groups. The experimental group also showed significant difference in the reduction of alcohol abuse score between pretest and posttest. The influence of fear appeals and alcohol abuse in the experimental group showed that there was a strong influence that is indirect and negative, increased in fear appeals decreased alcohol abuse. Based on the results of the analysis it can be concluded that fear appeals intervention through group therapy is effective to reduce alcohol abuse.

The results of this study are in accordance with research conducted (Moscato et al., 2001) research conducted to students by giving messages through campus loudspeakers, message about the negative impacts and future risks of the future if they continue to abuse alcohol, the message also provides suggestions and recommendations that can be done to reduce alcohol use. Message is delivered repeatedly and gets a significant difference in drinking behavior between subjects who hear the message and do not hear the message.

In this study the fear appeals message was delivered through group therapy. Choosing group therapy as a method or technique to convey the fear appeals message. Through group therapy the subjects are able to enhance psychological growth and improve psychological problems through cognitive and affective exploration of the interaction between members and between members and therapists (Brabender, Smolar, & Fallon, 2004). Adolescents are able to influence and support each other, group therapy is designed using aspects of fear appeals theory. Group therapy activities including visual display of the adverse effects of alcohol, case studies, experiences shared by speakers and experience shared by teenagers.

In the implementation of group therapy, the subjects were able to share personal experiences they had experienced related to alcohol abuse. By sharing the experiences of each subject, the subjects are able to learn from each other and know that it is not only him who has problems related to alcohol abuse. In the health threat session the subjects were given a visual presentations in the form of a video describing the adverse effects alcohol use, in this session the subject stated watching the video made them remember the experience that had happened to them. Then a case study and roleplay was given, the subjects identify the case and give their opinion. Furthermore, during a role play the subjects said that they felt like repeating the experiences. Providing case studies and role play can help the subjects understand the message of fear appeals (Kerr, Troth, & Pickering, 2014; Samsibar & Naro, 2018).

In the efficacy session, researchers conducted a discussion with the subjects about their experiences in reducing alcohol abuse and researchers invited a speaker who had abused alcohol and had stopped to give his thoughts to research subjects. The subjects were able to pay attention to what the speaker said and conducted discussions related to the alcoholic experience, such as how speaker stopped alcohol abuse and how long it takes to stop consuming alcohol. Providing speakers gives new experiences to subjects, subjects were able

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to give a good response and discussion with the speakers. Speaker experience is an example that can be done by subjects to stop alcohol abuse.

Fear appeals message in this study is case studies, videos, discussion with speakers, and tasks given during the activity. The message is delivered in the form of negative impacts of alcohol abuse and provide tangible advice that can be done by subjects to avoid these negative impacts. When the fear appeals message is delivered clearly and threatening the subjects will perform a threat assessment and advice given, if the threats and suggestions given are high or good then the subjects will carry out a danger control process. In this study, the subjects are able to focused and cognitive process message delivered to deal with negative impacts and made a suggestions to avoid negative impacts (Kok, Bartholomew, Parcel, Gottlieb, & Fernández, 2014). Fear appeals message motivate the subject to be able to behave adaptively (Ewoldsen, Yu, & Rhodes, 2004). The message of fear appeals if delivered with a powerful and tangible recommendations and suggestions that can be done will provide a change related to individuals intentions, attitudes, and behavior towards certain problems (Putwain & Remedios, 2014; Tannenbaum, Hepler, & Zimmerman, 2015).

In the study conducted by Stainback (Stainback & Rogers, 1983) 113 ninth grade students study participants divided into two groups, experimental and control groups. Fear appeals messages are given in the form of reading transcripts and sound recordings that discuss the effect of alcohol abuse in health and its risks. The study was conducted for 3 weeks and the results of fear appeals managed to strengthen the student's intention to refrain from consuming alcohol.

The use of fear appeals in Indonesia is still limited, so far the fear appeals messages is delivered in the form of advertisements and banners installed in public places, only a few have come down and delivered directly to adolescents, the urgency level of alcohol use in Indonesia is increasing every year and targeting children and adolescents. This study aimed to conveying the fear appeals message directly to adolescents using group therapy, has a positive and effective impacts in reducing alcohol abuse behavior in adolescent.

The limitation in this study is that this study is limited to the subject's criteria, male adolescents, not involving other age and sex. The implementation is still not in accordance with the module design due to the limited time and space given by the school and the results are not entirely due to interventions.

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### ***Conflict of Interest***

The author declared no conflict of interest.

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