

Benzodiazepine and Alcohol Use in College Students:

Increasing Awareness Using Fact-Based Information

Abstract: This study was done for the final Capstone presentation in the Research in Psychological Methods (PSYCH 2000) course. It explores the topic of anti-anxiety prescription medication, benzodiazepines, and the dangers of combining them with alcohol. Participants were 27 college students from Northwest College in Powell, WY. The study consisted of a pre-survey, an informational presentation on the biological effects of combining benzodiazepines and alcohol, and then a re-administration of the survey to determine if there was increased awareness in knowledge and desire to abstain from combining the substances. The reason for the study was to see how effective an informative, fact-based teaching method would be among college students. There was an increase in awareness and desire to abstain from alcohol and benzodiazepine use in the participants after the informative presentation.

Course: Research in Psychological Methods, PSYCH 2000

Semester/Year: SP/2013

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There are plenty of stories that float around social circles of teenagers and college students about their drinking and drug use. Binge drinking seems to be a rite of passage for some people, and taking prescription medication for recreation is certainly on the rise (Teter, McCabe, Cranford, Boyd, Guthrie, 2005). Benzodiazepines, a class of anxiolytic, anticonvulsant, muscle relaxant drugs, are commonly recreationally used for the disinhibiting qualities of the high. Alcohol has some of the same effects. Both drugs are GABA agonists and when used in combination they can potentially be fatal. 190,112 estimated people nationally were admitted to the ER in 2011 for using alcohol and pharmaceuticals in combination, and around 357,836 people were admitted for benzodiazepine related incidents (DAWN, 2012). Respiratory depression is common with the acute combination of the two substances and can potentially lead to death (Tanaka, 2002). The knowledge of the effects of benzodiazepines seems to be low among young adults and the effects of the combination of alcohol and benzodiazepines is even lower. The purpose of this study was to determine the prevalence of college students using alcohol and benzodiazepines in combination, to assess how aware they are of the effects, and to determine the efficacy of a fact-based drug education program. The desired effect was to create awareness in college students by providing them with fact-based information on the effects of benzodiazepines and alcohol in combination which will hopefully educate them and promote their likelihood of abstaining from the combination. The hypothesis of the study is that there will be a lack of knowledge among the students pre-assessment and an increased awareness post-assessment. A second hypothesis is that the students will respond well to a fact-based presentation and that it will decrease their desire to use the drugs in combination.

The prevalence and motives for abusing both alcohol and prescription stimulants in college students was explored in a research study at the University of Michigan. A random online survey was administered and yielded 9,161 responses. 8.1% of the sample claimed to have been lifetime illicit users of prescription stimulants and 5.4% said they were past-year illicit users. The study reported the motives as being for recreation and for euphoria (“to get high”), as a study aid, for staying alert at parties and other events, and to increase energy (Teter et al., 2005). The strengths of the study included a large sample size and their study was comparable to other studies done on the same basis. The weaknesses were that the sample came from a single campus, lowering the generality of the study, and some non-response questions may have given room for bias.

According to Tanaka (2002), “Acute ingestion of alcohol combined with benzodiazepines is responsible for several toxicological interactions that can have significant clinical implication.” (p. 69). It provides biological evidence to prove the danger of combining Benzodiazepine and Alcohol. Some of the major effects are depression of the nervous system, diminished motor and cognitive functioning, impaired gag-reflex, and significant respiratory depression (Ettinger, 2010).

The D.A.R.E. (Drug Abuse Resistance Education) program has been analyzed by researchers to test the empiricism of the program, but none have found that it decreases the likelihood of abuse in the future (Lynam, Milich, Zimmerman, Novak, Logan, Martin, et al., 1999). The D.A.R.E. program does not go into depth about the reasons to abstain from drugs and alcohol, but simply states that you should just say “no.” In a 10 year follow up study of the D.A.R.E. program, Lynam et al. (1999) reported, “A total of 1,002 individuals who in 6th grade had either received DARE or a standard drug-education curriculum, were reevaluated at age 20.

Few differences were found between the 2 groups in terms of actual drug use, drug attitudes, or self-esteem, and in no case did the DARE group have a more successful outcome than the comparison group. Possible reasons why DARE remains so popular, despite the lack of documented efficacy, are offered” (p. 1). This was a motive for the present study to explore whether a fact-based, informational education program would increase the desire among college students to abstain from a dangerous combination of drugs.

Method

General Study Design

Participants were recruited via two classrooms volunteered by professors at Northwest College. They were initially asked if they were of the age of 18. Those under 18 were not able to participate due to lack of parental consent. Those who were over 18 and willing to participate were given an informed consent form to sign. Their names were only on the consent form, numbered to correspond with the surveys they participated in, and those consent forms were kept under lock and key for the participants’ legal benefits. Because a majority of participants were under the age of 21, confidentiality was important in avoiding legal issues for the participants who admitted to drinking alcohol underage. Concurrently, use of benzodiazepines that are not prescribed to the participant would also be illegal, thus furthering the need for anonymity. This was a pre-test/post-test survey. Statistical Package for the Social Sciences (SPSS) version #19 was used to collect and analyze the data. Data was analyzed using an independent samples T-test.

Participants

There were 27 participants of various ages, mostly in the 18-20 years-of-age range. They were all students in a two-year community college campus of approximately 2000. The town that the campus resides in is rural (approx. 5000 people) and highly conservative.

Procedures

A survey was administered before a presentation about the interactions of alcohol and benzodiazepines was given. The first few questions asked the demographics of age and sex. Participants were able to select an answer from three age groups [18-20, 21-23, 24+]. Participants could choose male or female when asked about their sex. The third question asked if they have ever/currently drink alcohol. This was a yes or no question. The next question asked how often they currently drink alcohol. The choices were: never, few times a year, about once a month, a few times a month, 1-3 drinks a week, and 4 or more drinks a week. The following question asked if they had ever taken a benzodiazepine and included a disclaimer was included explaining technical names and street names. It read: Examples of benzodiazepines are: Valium (diazepam) , Xanax (alprazolam), Ativan (lorazepam), Librium (chlorodiazepoxide), Klonopin (clonazepam), Restoril(temazepam), Rohypnol (flunitrazepam), Lunesta (eszopiclone), Ambien (zolpidem) . These drugs are also known as: bars, xani bars, roofies, tranks, downers, benzos, goofballs, heavenly blues, and valo. If you are unsure whether you have taken a benzodiazepine, please feel free to ask. The question was a yes or no question. The sixth question asked how often they take a benzodiazepine and the selections were the same ones that were provided for current alcohol intake. The next question was a yes or no question that asked if they had ever combined a benzodiazepine and alcohol. It then asked how frequently they used alcohol and benzodiazepines in combination and they could choose from the same selections provided for

current alcohol intake and current benzodiazepine intake. The following question was a Likert scale asking how likely they were to combine the two substances and they could choose the options of never, not likely, somewhat likely, likely, and very likely. The subsequent question was a yes or no asking if they were aware of the effects of the combination. The eleventh question asked if they have/would they inform others of the effects of the drug combination and it was also a yes or no question. The last question asked: Would learning fact-based information about the effects of drugs/alcohol on your body lower the likelihood that you would use them in combination? This was a yes or no question.

The survey was administered after the informed consent was read to the participants and after they gave consent by signing their names. Once the survey was completed, a short informational presentation of the biological pharmacodynamics and psychopharmacology of the effects of combining benzodiazepines and alcohol was presented. After the presentation, participants were asked to complete the survey once again. Both surveys administered were identical. The surveys were collected and evaluated (See appendix 1).

Results

A total of 27 students were sampled. Results from the surveys indicated that 74.1 percent were between the ages of 18-20, and 18.5 percent were between the ages of 21-23. 7.4 percent were over the age of 24. 59.3 percent of the samples were females, and 40.7 percent were male.

63 percent of the participants said they had tried alcohol before. Of the 27 participants, 48 percent said they currently never drink alcohol. Five 18.5 percent said they drank a few times a year. 11 percent of students said they drink a few times a month. 22 percent said they drank alcohol 1-3 days a week. Of all the participants, only 15 percent of students had taken a benzodiazepine before. 7 percent said they had taken them a few times a year. Only 4 percent of

the 27 participants said they take benzodiazepines 4 or more times a week. A total of 15 percent of participants reported they had combined a benzodiazepine and alcohol together. 4 percent said they take them in combination currently a few times a year. 89 percent of participants had never taken a benzodiazepine. 89 percent said they were never likely to combine the two substances. 11 percent said they were not likely. These results stayed consistent through both surveys.

The question in the surveys that asked whether or not they were aware of the effects of alcohol and benzodiazepines in combination demonstrated a statistically significant difference in the data from pre-test to post-test. Awareness increased by 13 students after the informational presentation, going from 48 percent to 96 percent. Prior to the fact-based presentation, only 41 percent of participants claimed they would inform others of the negative effects of combining benzodiazepines and alcohol. In contrast, 85 percent of the participants said they would inform others of the negative effects following the fact-based presentation. 18.5 percent of participants changed their answers from no to yes when answering the question “Would learning fact-based information about the effects of drugs/alcohol on your body lower the likelihood that you would use alcohol and benzodiazepines in combination?” There was a statistically significant difference in the last three questions when compared in a T-test, showing a significant 2-tailed result of .000 on the question about awareness and also whether they would inform others on the effects. There was a significant 2-tailed result of .043 on the analysis of the question of learning fact-based information.

Discussion

Due to the significant findings in the data collected, there was support for the hypothesis that there was a lack of knowledge among the 27 participants about the effects of combining benzodiazepines and alcohol. There clearly was an increased awareness after the fact-based

presentation which further supports the hypothesis. There was also support for the hypothesis that the participants in the study would have a decreased desire to use the substances in combination after the fact-based presentation. These findings may lend a hand to those looking to create an effective drug-abstinence program that will go beyond what programs like D.A.R.E. have done by creating a true awareness in students about the biological and psychopharmacological effects of what drugs physically do to their bodies.

Research indicated that the D.A.R.E. program did not increase abstinence among participants in the program (Lynam, et al., 1999). A purpose of this study was to aid researchers in the development of an effective program to prevent drug abuse among adolescents and college students. It would be extremely beneficial to the health of students to be fully aware of the physical effects associated with drug use and be left to their own to choose whether they want to partake in the use of substance or not. There is a huge lack of information among students regarding drug use; by increasing awareness in them as adolescents, they might abstain from abusing substances when they are older. This study does not have a follow-up, but with more research on fact-based programs, hopefully, there will be an increase of knowledge and awareness and a decrease in drug and substance abuse among our youth.

There were quite a few weaknesses with the study, especially in the size of the sample. 27 participants is not a large enough sample to make definitive conclusions based on the current research. This research was also completed on a single-campus, in a very rural and conservative area, so generalizability of the results should be made with caution. It would have been more desirable to have a broader sample to truly see whether or not the information would change the desire in students to use benzodiazepines and alcohol in combination. Also, there was a large limitation on what drugs were taught about. Only alcohol and benzodiazepines and those

substances in combination were included in this study. Future research should include other drugs such as cocaine, opiate pain medications, amphetamines, and other drug combinations and give information on each drug category they include. Future research should focus on students at a larger campus, preferably a university. There could be follow-up studies done to test fact-based programing and to decide whether or not to bring fact-based programs into schools is effective.

Though there were weaknesses, the overall premise of the research is strong and has potential to implement a program that would help lower the number of drug-related deaths in our country. Hopefully, there will be a new program that replaces D.A.R.E. and proves to be more efficient and effective. There should be more education on lethal combinations of drugs, like the combination of benzodiazepines and alcohol in order to help lower drug ignorance among kids and adults alike.

References

- Ettinger, R. H. (2010). *Psychopharmacology*. (1 ed.). Pearson College Division.
- Lynam, D. R., Milich, R., Zimmerman, R., Novak, S. P., Logan, T. K., Martin, C & Clayton, R. (1999). Project DARE: No effects at 10-year follow-up. *Journal Of Consulting And Clinical Psychology*, 67(4), 590-593. doi:10.1037/0022-006X.67.4.590
- Keylamp, B. A., Griffiths, R. R., & Mintzer, M. Z. (2010). Dose effects of triazolam and alcohol on cognitive performance in healthy volunteers. *Experimental and Clinical Psychopharmacology/ APA*, 18(1), 1-16. doi: 10.1037/a0018407
- Substance Abuse and Mental Health Services Administration, Drug Abuse Warning Network, 2010: National Estimates of Drug-Related Emergency Department Visits. HHS Publication No. (SMA) 12-4733, DAWN Series D-38. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2012.
- Tanaka, E. (2002). Toxicological interactions between alcohol and benzodiazepines. *Clinical Toxicology*, 40(1), 69-75.
- Teter, C. J., McCabe, S. E., Cranford, J. A., Boyd, C. J., & Guthrie, S. K. (2005). Prevalence and motives for illicit use of prescription stimulants in an undergraduate student sample. *Journal of American College Health*, 53(6), 253-262.

Appendix 1



This survey will cover questions regarding your consumption of alcohol and benzodiazepines.

Data from these surveys will be used in a project for the Research in Psychological Methods capstone class. Please answer these questions honestly. Circle the most applicable answer. Your answers will remain confidential. If you have any questions, please feel free to ask.

Age:

1. 18-20
2. 21-23
3. 24+

Sex:

1. Male
2. Female

Do you consume/have you ever consumed alcohol?

1. Yes
2. No

How often do you currently drink alcohol?

1. Never
2. Few times a year
3. About once a month
4. A few times a month
5. 1-3 days a week
6. 4 or more a week

Have you ever taken a benzodiazepine?

Examples of benzodiazepines are: Valium (diazepam), Xanax (alprazolam), Ativan (lorazepam), Librium (chlorodiazepoxide), Klonopin (clonazepam), Restoril (temazepam), Rohypnol (flunitrazepam), Lunesta (eszopiclone), Ambien (zolpidem). These drugs are also known as: bars, xani (zanny) bars, roofies, tranks, downers, benzos, goofballs, heavenly blues, and valo. If you are unsure whether you have taken a benzodiazepine, please feel free to ask.

1. Yes
2. No

How often do you currently take benzodiazepines?

1. Never
2. Few times a year
3. About once a month
4. A few times a month
5. 1-3 days a week
6. 4 or more a week

Have you ever used a benzodiazepine and alcohol in combination?

1. Yes
2. No

How often do you currently take benzodiazepines and alcohol in combination?

1. Never
2. Few times a year
3. About once a month
4. A few times a month
5. 1-3 days a week
6. 4 or more a week

How likely are you planning on combining the two in the future? (Please circle one)

-Never -Not likely -Somewhat likely -Likely -Very likely

Are you aware of any negative health effects of the combination of benzodiazepines and alcohol?

1. Yes
2. No

Would you/ have you informed others of the effects of the combination of benzodiazepines and alcohol?

1. Yes
2. No

Would learning fact-based information about the effects of drugs/alcohol on your body lower the likelihood that you would use alcohol and benzodiazepines in combination?

1. Yes
2. No