

## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

Minchekar Vikas S.<sup>1\*</sup>

### ABSTRACT

The eyewitness is a crucial source of evidence in the criminal judicial system. However, rely on the reminiscence of an eyewitness especially intoxicated eyewitness is not always judicious. It might lead to some serious consequences. Day by day, alcohol-related crimes or the criminal incidences in bars, nightclubs and restaurants are increasing rapidly. Tackling such cases is very complicated to any investigation officers. The people in that incidents are violated due to the alcohol consumption hence, their ability to identify the suspects or recall these phenomena is affected. The studies on the effects of alcohol consumption on motor activities such as driving and surgeries have received much attention. However, the effect of alcohol intoxication on memory has received little attention from the psychology, law, forensic and criminology scholars across the world. In the Indian context, the published articles on this issue are equal to none up to present day. This field experiment investigation aimed at to finding out the effect of alcohol consumption on identification accuracy in lineups. Thirty adult social drinkers, and thirty sober adults were randomly recruited for the study. The sober adults were assigned into “placebo” beverage group while social drinkers were divided into two group e. g. “low dose” of alcohol (0.2 g/kg) and “high dose” of alcohol (0.8 g/kg). The social drinkers were divided in such a way that their level of blood-alcohol concentration (BAC) will become different. After administering the beverages for the placebo group and liquor to the social drinkers for 40 to 50 minutes of the period the five-minute video clip of mock crime is shown to all in a group of four to five members. After the exposure of video clip subjects were given 10 portraits and asked them to recognize whether they are involved in mock crime or not. Moreover, they were also asked to describe the incident. The subjects were given two opportunities to recognize the portraits and to describe the events; the first opportunity is given immediately after the video clip and the second was 24 hours later. The obtained data were analyzed by one-way ANOVA and Scheffe’s posthoc multiple comparison tests. The results indicated that the “high dose” group is remarkably different from the “placebo” and “low dose” groups. But, the “placebo” and “low dose” groups are equally performed. The subjects in a “high dose” group recognized only 20% faces correctly while the subjects in a “placebo” and “low dose” groups are recognized 90 %.

<sup>1</sup> Asso. Professor in Psychology, Smt. Kasturba Walchand (Arts-Science) College, Sangli. MS, India

\*Responding Author

Received: July 5, 2017; Revision Received: August 1, 2017; Accepted: August 15, 2017

## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

This study implied that the intoxicated witnesses are less accurate to recognize the suspects and also less capable of describing the incidents where crime has taken place. Moreover, this study does not assert that intoxicated eyewitness is generally less trustworthy than their sober counterparts.

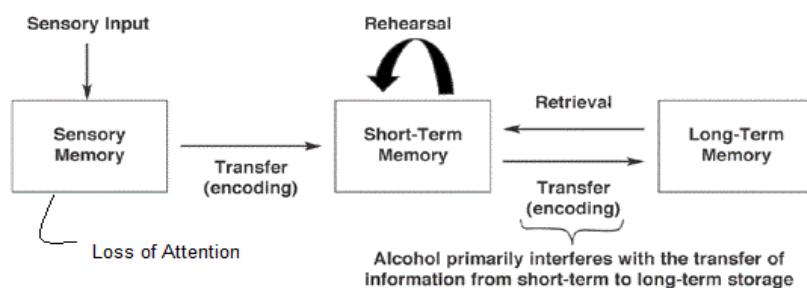
**Keywords:** *Intoxicated Eyewitness, Memory, Social Drinkers, and Lineups.*

The eyewitness testimony issue is more important for the investigators, police officers, forensic psychologists, prosecutors, defense counsel and judges. The information received from eye witnesses is generally considered one of the most important factors in solving crimes (Fisher, 1995; Kebbell & Milne, 1998) and mistaken eyewitness testimony create legal problems. The importance of appropriate witness testimony is documented in various research conducted on eyewitness memory and alcohol consumption. However, only few researches have focused on intoxicated witnesses. Alcohol has been shown to impair memory performance across a variety of tasks and studies. The most tremendous effect that alcohol can have on short term and long term memory is an alcohol amnesia or alcoholic blackout (Goodwin, 1995; Goodwin et al., 1970) In most instances, however, alcohol has more subtle and specific negative effects on memory. Alcohol consumption has a significant impact on individual's cognitive abilities, motor abilities and social relations. Its impact on eyewitness is widely researched in showups and lineups. The, intoxicated witnesses are more sensitive than sober witnesses. The ample researches has examined the effects of alcohol intoxication on eyewitness memory and identification accuracy and found that intoxicated witnesses are less likely to be accurate in their descriptions of events and people. The negative impact of alcohol on memory related functions is searched by worldwide scholars (Petros, Kerbela, Beckwitha, Sacksa, & Sarafolean, 1984; Craik, 1977;) specifically on episodic memories (Mintzer, 2007) and long-term memories (White, 2003) Furthermore, studies have found that intoxicated witnesses are more cognitively impaired than sober ones (Evans & Schreiber Compo, 2010). Dysart et al. (2002) has pointed out that alcohol decreases the attentional capacity of eye-witnesses as well as they have pointed out the negative effects of alcohol intoxication on face identification. The effect of alcohol on working memory depend on what type of tasks is performed: Alcohol impaired working memory for material encoded and maintained through rehearsal but had little effect on general working memory holding mechanisms or tasks requiring undivided attention (Saults et al., 2007). Grottan-Miscio and Vogel-Sprott (2005) found that, as working memory approaches maximum capacity, alcohol can impair cognitive performance; however, some effects were reversible with incentives to perform. Particularly important for eyewitness scenarios is alcohol's affect on false memories. Garfinkel, Dienes, and Duka (2006) argued that superficial encoding during intoxication may account for the overall decrease in memory, including false memory.

Some of alcohol's effects on memory may be explained by Steele and Josephs's (1990) theory of *alcohol myopia*. Alcohol myopia posits that alcohol affects cognitive functioning either (a) through restricting the range of cues that can be perceived in a situation because disproportionate attention is given to immediate situational cues at the expense of weaker peripheral cues, or (b) by reducing the ability to process and extract meaning from the

## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

perceived information. The effect of intoxication on the performance of a given task depends on the presence or absence of other ongoing activity (Josephs & Steele, 1990)[14]. Due to affected attentional capacity, intoxicated persons are more likely than sober individuals to focus on a primary task at the expense of other stimuli. A recent study on inattentive blindness confirmed this notion: Mildly intoxicated people were less likely than sober ones to notice an atypical salient object while performing a competing attentional task (Cilfasefi, Takarangi, & Bergman, 2006).



### *Aim of the study*

- To study the determinant effects of alcohol intoxication on the performance of an eyewitness testimony.

### *Objectives of the study*

1. To find out the effect of alcohol on facial identification accuracy in lineup condition.
2. To find out the effect of alcohol on recall of description seen in video clip.

### *Hypotheses of the study*

1. There would be significant effect existed on facial identification accuracy in lineup condition.
2. There would be significant effect existed on recall of description seen in video clip.

## **METHOD**

### *Participants*

Sixty adults between the ages of 35 to 45 years participated in the study. Out of 30 adults were social drinkers and 30 were sober adults. Social drinkers were recruited via oral announcement in the bar while sober participants were also recruited in the same manner but in family restaurants. The participants lived in rural and urban regions.

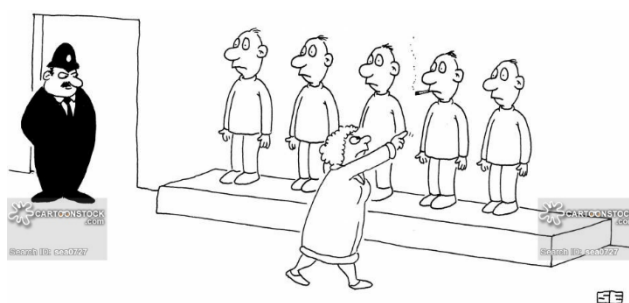
### *Materials*

1. **Videotape:** A short duration nonverbal video clip was filmed on an event of the mobile phone theft. Approximately ten to fifteen male characters were played a role in that film. After the stolen of mobile phone the suspect was chased and belting by mobile phone owner. At the same time the friends of suspects also started to make arguments to defend the thief and the fighting begins between two fronts.
2. **Photographs:** The portraits of an individual who played a role in the film and filler - who didn't played a role- were printed on 4x6 size photo paper. Selection of filler or foils was

## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

based on general facial resemblance to the target and similarity of height and hairstyle. In all picture, individuals posed with a neutral facial expression. All photographs were taken under similar lighting conditions using a mobile phone camera, against same background and same distance.

3. **Lineup Construction:** The 12 portraits of the characters in the film and 12 portraits of fillers comprised lineups. A different photographs of each target individual in a different color of shirts were chosen for making a complex condition. A lineup procedure was constructed in such a way in which an array of photographs, including a photograph of the characters who played a role in the film and additional photographs of other persons not played a role in the film were arranged randomly. The one by one photo to an eyewitness showed for the purpose of determining whether the witness identifies the suspect as the actor in film.



4. **Questionnaire:** The questionnaire consisted of 10 questions based on the scene pictured in the video clip. Subjects have to respond these questions accordingly what they seen in that video clip. These questions are descriptive type's i. e. what is the color of bus? What is number of motor cycle? Etc.

### *Procedure*

The bar and restaurants located near the city were visited and oral announcement for the participation in study were made. A group of four to five persons were told that they would watch a six minute video of mobile theft. After watching the video clip they were told that they would be shown some photographs and would be asked to point out the photo of the person who had just appeared in the clip. They were informed to watch carefully and if the correct portrait was seen, they would need to point it out. If the correct picture was not there, they would just say the person was no played a role in that film.

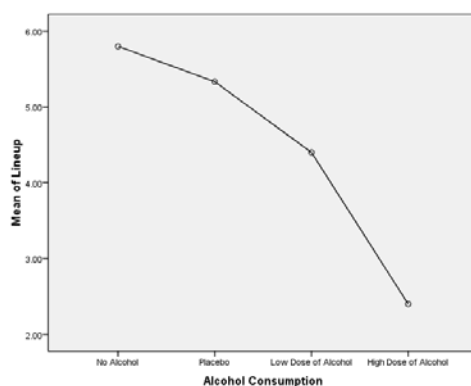


## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

**Table 1, Summary Of One-Way Anova For Identification Accuracy In Lineup Condition**

Sources of Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	102.05	3	34.01	100.61	.000
Within Groups	18.93	56	.33		
Total	120.98	59			

Table 1 indicates the results of one-way ANOVA where the identification accuracy in lineup condition was dependent variable while the alcohol consumption was independent variable which have four levels viz. no alcohol, placebo, low dose and high dose. There was a significant effect of alcohol on identification accuracy,  $F(3, 56) = 100.613, p < .01$ . The four groups shows the different results of facial identification. Since the F value is significant, the post-hoc multiple comparison is performed to find out the difference between the pairs.



**Figure 1 Indicating the group differences on identification accuracy.**

Table 2 reveals the clear picture of between group differences on identification accuracy in lineup condition. It could be observed that the value of mean difference between no alcohol group and low dose of alcohol group is 1.4 which is significant on .05 level. Moreover, the mean difference (3.4) between no alcohol group and high dose of alcohol group is also significant on 0.05 level. Similarly, the low and high alcohol groups were significantly different from placebo group. The interesting finding is that the no alcohol group and placebo groups are not significantly differ from each other.



**Alcohol Intoxication and Perpetrator Identification in Experimental Lineup**

**Table II, Scheffe's Post-Hoc Multiple Comparison On Identification Accuracy In Lineup.**

(I) Alco Consp.	(J) Alco Consp.	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
No Alco	Placebo	.47	NS	-.14	1.07
	L D Alco	1.40*	.00	.78	2.01
	H D Alco	3.40*	.00	2.78	4.01
Placebo	No Alco	-.47	NS	-1.07	.14
	L D Alco	.933*	.00	.32	1.54
	H D Alco	2.93*	.00	2.32	3.54
L D Alco	No Alco	-1.40*	.00	-2.01	-.78
	Placebo	-.933*	.00	-1.54	-.32
	H D Alco	2.00*	.00	1.38	2.61
H D Alco	No Alco	-3.40*	.00	-4.01	-2.78
	Placebo	-2.93*	.00	-3.54	-2.32
	L D Alco	-2.00*	.00	-2.61	-1.38

\*. The mean difference is significant at the 0.05 level.  
Alco=Alcohol, L D =Low, Dose, H D=High Dose

**Table III, Summary Of One-Way Anova On The Recall Of The Description**

Sources of Variances	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	549.78	3	183.26	610.87	.00
Within Groups	16.80	56	.30		
Total	566.58	59			

Table 3 indicating the effect of alcohol on the recall of the description of information based on the video clip scene. The results reveal the significant impact on dependent variable,  $F(3, 56) = 610.870, p < .01$ . As seen in table 1 the alcohol made significant effect on identification accuracy, the similar effect were also seen in table 3 on recall of description. Since the F value is significant the post-hoc comparison is performed.

**Table IV, Scheffe's Post-Hoc Multiple Comparison On Recall Of The Description.**

(I) Alco Consp	(J) Alco Consp	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
No Alco	Placebo	.53	NS	-.04	1.10
	L D Alco	2.80*	.00	2.22	3.37
	H D Alco	7.67*	.00	7.09	8.24
Placebo	No Alco	-.53	NS	-1.10	.043
	L D Alco	2.27*	.00	1.69	2.84

## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

(I) Alco Consm	(J) Alco Consm	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
L D Alco	H D Alco	7.13*	.00	6.55	7.70
	No Alco	-2.80*	.00	-3.37	-2.22
	Placebo	-2.27*	.00	-2.84	-1.69
	H D Alco	4.87*	.00	4.29	5.44
H D Alco	No Alco	-7.67*	.00	-8.24	-7.09
	Placebo	-7.13*	.00	-7.70	-6.55
	L D Alco	-4.87*	.00	-5.44	-4.29

\*. The mean difference is significant at the 0.05 level.

Alco=Alcohol, L D =Low, Dose, H D=High Dose

Table 4 shows the results of between group differences on the recall of description based on the video clip scene. It can be noted that the value of mean difference between no alcohol group and low dose of alcohol group is 2.8 which is significant on .05 level. Moreover, the mean difference (7.67) between no alcohol group and high dose of alcohol group is also significant on 0.05 level. Similarly, the low and high alcohol groups were significantly different from placebo groups. The mean difference (4.87) between low dose of alcohol group and high dose of alcohol group is also significant. The rest of all pairs remain similar on recall of the information which were seen in video clip.

### DISCUSSION

The principal aim of this study was to examine the effect of alcohol intoxication on eyewitness identification accuracy in lineup. Specifically, researcher compared the face identification accuracy of intoxicated and sober participants together with a placebo group. Alcohol intoxication existed significant effect on identification performance in the present study. These results are consistent with the results of Dysart et al. (2002), who found high dose of alcohol is associated with an increased likelihood of making false identifications. However, these results are inconsistent with the findings of similar studies conducted previously (Hagsand et al., 2013; Harvey et al., 2013; Yuille & Tollestrup, 1990). In the present study high and low dose of alcohol group shows the lower percentage of facial identification. The rest of all groups viz. no alcohol group, placebo group shows the higher level of percentage of facial identification. In the present study it is seen that the higher levels of intoxication could lead an increased likelihood of making false identifications. There would be possibility to inability to encode the facial cues during the alcohol intoxication. At encoding, intoxicated individuals are less able to attend the number of cues at a time (Steele & Josephs, 1990), use of precise elaborators, and process semantic and episodic information (Hashtroudi, Parker, DeLisi, & Wyatt, 1983; Marinkovic, Halgren, & Maltzman, 2004) [19], [20]. Moreover, there would be possibility to decrease the span of attention and the visual attention due to alcohol intake or highly intoxication. At retrieval, alcohol decreases sensitivity in recognition tasks (Maylor, Rabbitt, & Kingstone, 1987) and retrieval from long-term memory (Nelson, McSpadden, Fromme, & Marlatt, 1986). Overall, alcohol's impact on memory consolidation appears to be greater than its impact on recall of established memories

## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

or the ability to hold new information in short-term memory (Soraci et al., 2007; White, 2003; Sauls, Cowan, Sher, & Moreno, 2007).

### STUDY LIMITATIONS

The present study is limited in its use of only a two levels of alcohol intake i. e. low and high to measure identification performance. Future research should employ more than two levels i. e. change of alcohol brand, first time drink, frequently drink etc. It is also noted that in the present study that the level of intoxication reached by our participants is different participant by participant and not controlled.

### SUMMARY AND CONCLUDING REMARKS

The present study suggests that intoxicated witnesses are not able to accurately identify the perpetrator from a lineup in which he is present, or reject lineups in which he is absent. In addition, this research demonstrated that low dose of alcohol witness also not able to correctly identify the suspects than sober witnesses. The high and low alcohol witness also not able to correctly recall the information which was seen at the time of crime. Thus, it is argued that the assumption held by people regarding the performance of intoxicated witnesses is empirically justified.

### *Acknowledgments*

The author appreciates all those who participated in the study and helped to facilitate the research process.

*Conflict of Interests:* The author declared no conflict of interests.

### REFERENCES

- Cilfasefi, S. L., Takarangi, M. K., & Bergman, J. S. (2006). Blind drunk: The effects of alcohol on in attentional blindness. *Applied Cognitive Psychology, 20*, 697–704.
- Craik, F. I. M. (1977). Similarities between the effects of ageing and alcoholic intoxication on memory performance, construed within a 'levels of processing' framework. In I. M. Birnbaum, & E. S. Parker (Eds.), *Alcohol and human memory* (pp. 9–21). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Dysart, J. E., Lindsay, R. C. L., MacDonald, T. K., & Wicke, C. (2002). The intoxicated witness: Effects of alcohol on identification accuracy from showups. *Journal of Applied Psychology, 87*, 170–175.
- Evans, J. R., & Schreiber Compo, N. (2010). Mock jurors' perceptions of identifications made by intoxicated witnesses. *Psychology, Crime & Law, 16*, 191–210.
- Fisher, R. P. (1995). Interviewing victims and witnesses of crime. *Psychology, Public Policy, and Law, 1*, 732–764.
- Garfinkel, S. N., Dienes, Z., & Duka, T. (2006). The effects of alcohol and repetition at encoding on implicit and explicit false memories. *Psychopharmacology, 188*, 498–508.
- Goodwin, D. W. (1995). Alcohol amnesia. *Addiction, 90*, 315–317.
- Goodwin, D. W., Othmer, E., Halikas, J., & Freemon, F. (1970). Loss of short term.
- Grottan-Miscio, K. E., & Vogel-Sprott, M. (2005). Effects of alcohol and performance incentives on immediate working memory. *Psychopharmacology, 181*, 188–196.



## Alcohol Intoxication and Perpetrator Identification in Experimental Lineup

- Hagsand, A., Roos-af-Hjelmsater, E., Granhag, P. A., Fahlke, C., & Soderpalm-Gordh, A. (2013). Do sober eyewitnesses outperform alcohol intoxicated eyewitnesses in a lineup? *The European Journal of Psychology Applied to Legal Context*, 5, 23–47.
- Harvey, A., Kneller, W., & Campbell, A. C. (2013). The effects of alcohol intoxication on attention and memory for visual scenes. *Memory*, 21, 969–980.
- Hashtroudi, S., Parker, E. S., DeLisi, L. E., & Wyatt, R. J. (1983). On elaboration and alcohol. *Journal of Verbal Learning and Verbal Behavior*, 22, 164–173.
- Kebbell, M. R., & Milne, R. (1998). Police officers' perceptions of eyewitness performance in forensic investigations. *Journal of Social Psychology*, 138, 323–330.
- Marinkovic, K., Halgren, E., & Maltzman, I. (2004). Effects of alcohol on verbal processing: An event-related potential study. *Alcoholism: Clinical and Experimental Research*, 28, 415–423.
- Maylor, E. A., Rabbitt, P. M., & Kingstone, A. (1987). Effects of alcohol on word categorization and recognition memory. *British Journal of Psychology*, 78, 233–239.
- Mintzer, M. Z. (2007). The acute effects of alcohol on memory: A review of laboratory studies in healthy adults. *International Journal of Disability and Human Development*, 6, 397–403.
- Nelson, T. O., McSpadden, M., Fromme, K., & Marlatt, G. A. (1986). Effects of alcohol intoxication on metamemory and on retrieval from long-term memory. *Journal of Experimental Psychology: General*, 115, 247–254.
- Petros, T. V., Kerbela, N., Beckwitha, B. E., Sacksa, G., & Sarafolean, M. (1984). The effects of alcohol on prose memory. *Physiology & Behavior*, 35, 43–46.
- Saults, J. S., Cowan, N., Sher, K., & Moreno, M. (2007). Differential effects of alcohol on working memory: Distinguishing multiple processes. *Experimental and Clinical Psychopharmacology*, 15, 576–587.
- Soraci, S. A., Carlin, M. T., Read, J. D., Pogoda, T. K., Wakeford, Y., Cavanagh, S., et al. (2007). Psychological impairment, eyewitness testimony, and false memories: Individual differences. In M. P. Toglia, J. D. Read, D. F. Ross, & R. C. L. Lindsay (Eds.), *The handbook of eyewitness psychology: Volume 1. Memory for events*. Mahwah, NJ: Erlbaum, pp. 261–297.
- Steele, C. M., & Josephs, R. A. (1990). Alcohol myopia: Its prized and dangerous effects. *American Psychologist*, 45, 921–933.
- White, A. M. (2003). What happened? Alcohol, memory blackouts, and the brain. *Alcohol Research & Health*, 27, 186–196.
- White, A. M., Signer, M. L., Kraus, C. L., & Swartzwelder, H. S. (2004). Experiential aspects of alcohol-induced blackouts among college students. *American Journal of Drug and Alcohol Abuse*, 30, 205–224.
- Yuille, J. C., & Tollestrup, P. A. (1990). Some effects of alcohol on eyewitness memory. *Journal of Applied Psychology*, 75, 268–273.

**How to cite this article:** Minchekar V S (2017). Alcohol Intoxication and Perpetrator Identification in Experimental Lineup. *International Journal of Indian Psychology*, Vol. 4, (4), DIP:18.01.052/20170404, DOI:10.25215/0404.052