STASH, Vol. 8(1) – Who are dual alcohol and marijuana users?

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When people drink alcohol, they are more likely also to use marijuana than any other illicit drug (Degenhardt, Hall et al. 2001). However, little is known about this group of dual alcohol/marijuana users, or about how different levels of alcohol and marijuana use affect other risky behaviors. This week's STASH reviews a study that investigates behavioral and psychosocial characteristics of those who use both alcohol and marijuana (Harrington, Baird et al. 2012). The investigators sought to determine if there are distinct clusters of alcohol/marijuana users and examine the range of potential negative consequences associated with this pattern of substance use.

Method

- Investigators conducted a secondary data analysis of data previously collected for a randomized control trial focusing on brief intervention at an emergency service within a trauma center.
- Participants were 427 individuals who (1) agreed to participate in a study about risk behavior reduction among alcohol and marijuana users and (2) reported using both alcohol and marijuana during the past 30 days.
- Participants reported how frequently they used alcohol and how frequently they used marijuana during the past 30 days.
- The researchers used [cluster analysis](#) to identify sub-types of dual users based on frequency of alcohol and marijuana use.In addition, participants completed the following self-report measures of negative consequences:
    - *Alcohol Use Disorders Inventory Test (AUDIT)*: A measure of alcohol use frequency, binge drinking episodes, and alcohol-related negative consequences for the past year.
    - *Marijuana Problem Scale (MPS)*: A measure of negative psychological, social, occupational, and legal consequences of marijuana use.
    - *Noteworthy Index of Problems (NIP)*: A measure of frequency of psychosocial events related to alcohol and/or marijuana use during the past three months (e.g., saying harsh or cruel things to

someone, getting in a physical fight, saying embarrassing things). The researchers calculated overall scores as well as separate alcohol-related and marijuana-related scores.

- *Injury Behavior Scale (IBC)*: A measure of injuries during the past year, with separate scores for total injuries, alcohol-related injuries, and marijuana-related injuries. The researchers calculated overall scores as well as separate alcohol-related and marijuana-related scores.
- *High Risk Behavior Scale (HRB)*: A measure of 13 risky behaviors, some related to alcohol and/or marijuana use (e.g., driving after marijuana use) and others not necessarily related to alcohol and/or marijuana use (e.g., speeding, being involved in a physical fight).
- For each of these measures, except the HRB, items were combined to form a single score. For the HRB, items were kept separate.
- The researchers used Analysis of Variance (ANOVA) and Tukey post-hoc tests to compare how participants in different clusters differed in terms of psychosocial and behavioral characteristics.

Results

- The analyses revealed four distinct clusters of drug users based on the frequency of alcohol and marijuana use. The clusters were replicated independently using two sub-samples.

		Frequency of Alcohol Use	
		Daily	Weekly
Frequency of Marijuana Use	Daily	Cluster 3 (N = 56)	Cluster 1 (N = 93)
	Weekly	Cluster 4 (N = 55)	Cluster 2 (N = 223)

Figure. Identified clusters.

- The researchers observed statistically significant differences among the four clusters for the AUDIT ($F_{(3, 420)}$=39.92, $p < .001$), the MPS ($F_{(3, 417)}$= 6.01, $p < .001$), the overall NIP ($F_{(3, 410)}$=10.63, $p < .001$), the overall IBC ($F_{(3, 423)}$=6.77, $p < .001$), and several of the HRB items.
- Figure 1a and Figure 1b show AUDIT, MPS, overall IBC, and overall NIP

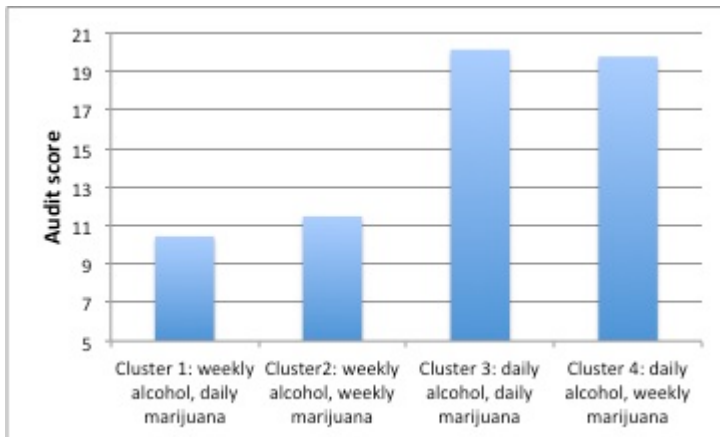scores as a function of the four clusters of drug users.

Figure. AUDIT scores as a function of clusters of participants. Click image to enlarge.
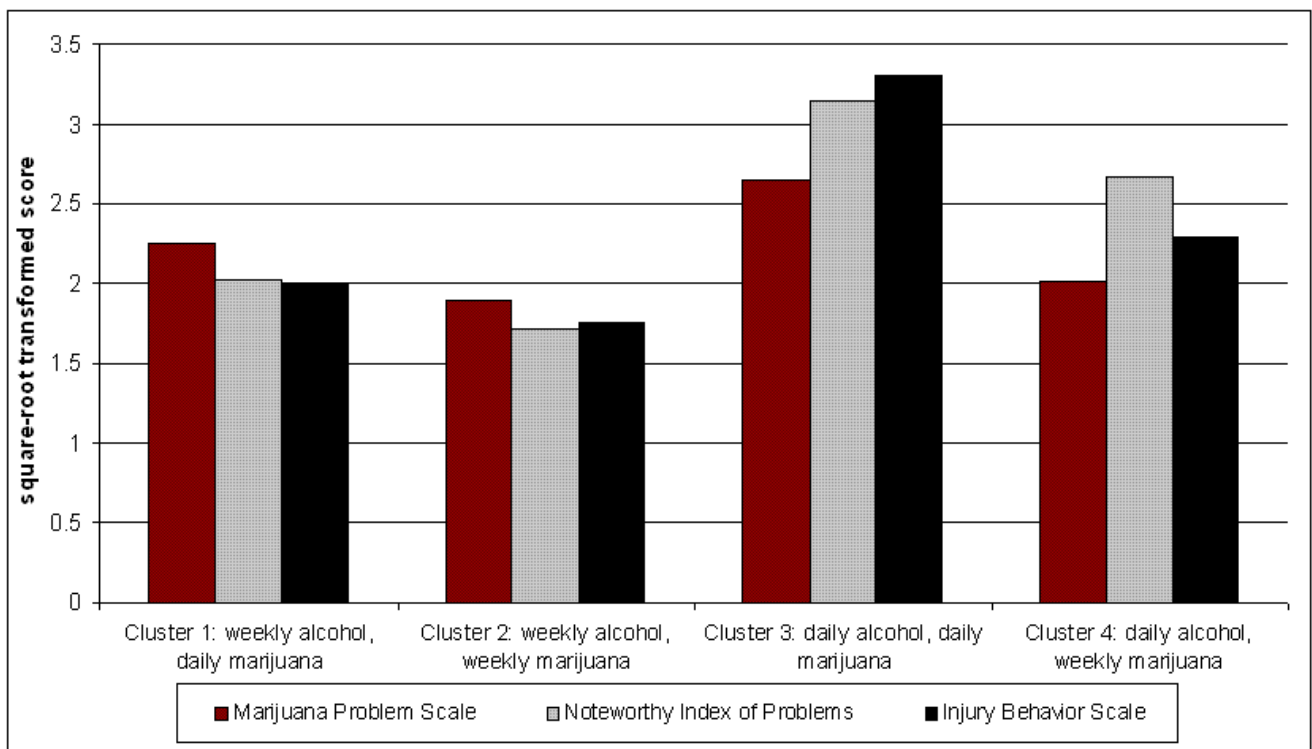

Figure. MPS, total IBC and total NIP scores as a function of clusters of participants. Click image to enlarge.

- Post-hoc Tukey tests revealed the following statistically significant specific group differences:
    - For the AUDIT, Cluster 3 scores and Cluster 4 scores were both higher than Cluster 1 and Cluster 2 scores
    - For the MPS Cluster 3 scores were higher than Cluster 2 and

Cluster 4 scores

- For the NIP, Cluster 3 scores were higher than Cluster 1 and Cluster 2 scores
- For the IBS, Cluster 3 scores were higher than Cluster 1 and Cluster 2 score

Limitations

- This study uses a self-reported data.
- The study measured only frequency of alcohol and marijuana use, but not quantity.

Conclusion

These analyses identified four distinct groups of alcohol and marijuana users according to the frequency of using both substances. The results showed that individuals who used alcohol daily experienced more alcohol-related problems than individuals who used it weekly, independent of marijuana use. The pattern of marijuana use was less clear. For instance, people who used marijuana daily reported more instances of driving under the influence of marijuana than did weekly marijuana users, regardless of how frequently they used alcohol. However, for the number of marijuana related problems, daily marijuana users were not significantly different from weekly marijuana users, if the marijuana user also used alcohol weekly. The daily users of both substances reported more marijuana-related problems than weekly marijuana users. The authors speculate that individuals who use both substances daily might need targeted intervention and treatment efforts because of the highest number of associated problems.

-Julia Braverman

What do you think? Please use the comment link below to provide feedback on this article.

References

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Harrington, M., J. Baird, et al. (2012). "Identifying subtypes of dual alcohol and

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