Analysis of Rankings of Causal Factors of Substance Abuse

LIBERTY UNIVERSITY

Jordan Stackpole, Katherine Bosch, Libby Christinat, Elizabeth Mathews, Emily Sampedro, Isabelle Thibodeau, Lydia Weststeijn, Brian Kelley, Ph.D

SCHOOL of BEHAVIORAL SCIENCES

Abstract and Background

Background: Substance use disorder is an ever-growing issue effecting individuals, families, and communities alike. Previous research identifies a range of biological, environmental, and psychological factors associated with substance use disorder. Our research examines connections between psychology students' implicit perceptions of the importance of these factors. **Methods**: Since there are limited studies within this topic that examine implicit cognition of participants, we used concept mapping to measure student perception of and connections between 18 causal factors of substance use. **Results:** Analyzed using the Sloman Rank Index, the 18 factors were ranked by perceived importance and number of connections. We found that students believe parental drug use (ParDrug), Trauma, and negative family management (NegFam) are the most important factors in the cause of substance use. There are also various factors with a significant number of connections, as indicated by dark green boxes on the matrix (Graph C). **Conclusions:** Our results suggest that psychology students believe certain factors to be more influential in the development of substance use disorder. Understanding student perceptions will assist in education of youth about substance use. Future studies on the perceptions of professionals will ideally identify patterns of belief and result in reduced variability with professional training in substance use treatment.

Introduction and Research Question

Substance use disorder is classified as a mental disorder in the DSM-5, and is characterized by criteria regarding impaired control, physical dependence, social problems, and risky use of addictive substances. Substance use disorder cannot be explained by one single causal factor, must be understood from a holistic, biopsychosocial perspective. Biological factors generally revolve around an individual's genetic risk for addiction. Psychological factors include trauma, high life stress, and history of mental illness. Social factors include economic status, the number of drugs used in the community, parental or peer drug use, and easy access to abused drugs. These are only a few of the 18 causal factors identified by the literature. using concept mapping to explain how implicit cognitive processing informs substance use risk. This study investigates and compares causal factors associated with substance use among both students and professionals. The goal of this research is to explore how novices and experts conceptualize factors related to substance use.

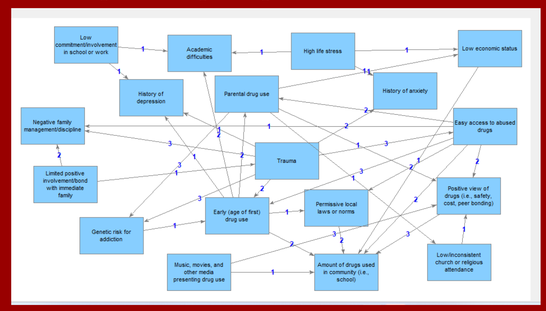
Methods

This study aimed to assess students' perceptions of the causes of substance use. Participants were recruited through undergraduate psychology classes (n=48). Participants were asked to complete a consent form as well as a survey regarding current drug usage through Qualtrics. After this, participants completed a concept map containing 18 causal factors of substance use. Participants were able to link these factors and rate their connections on a scale from one, being not very connected, to three, being very connected. On average participants took about 20 minutes to complete their concept map. Data analysis run through concept builder software looked at complexity as well as a participant's rankings of each factor.

A. Causal Factors Key

Stress	High life stress
GenRisk	Genetic risk for addiction
EarlyDrug	Early (age of first) drug use
Depress	History of depression
AcaDiff	Academic difficulties
Anxiety	History of anxiety
ParDrug	Parental drug use
NegFam	Negative family management/discipline
Trauma	Trauma
LowCom	Low commitment/involvement in school or work
LimFam	Limited positive interaction/bond with immediate family
PosView	Positive view of drugs (i.e., safety, cost, peer bonding)
ComDrug	Amount of drugs used in community (i.e., school)
LowEcon	Low economic status
EasyDrug	Easy assess to abused drugs
Media	Music, movies, and other media presenting drug use
LawNorm	Permissive local laws or norms
Church	Low/inconsistent church or religious attendance

B. Sample Concept Map

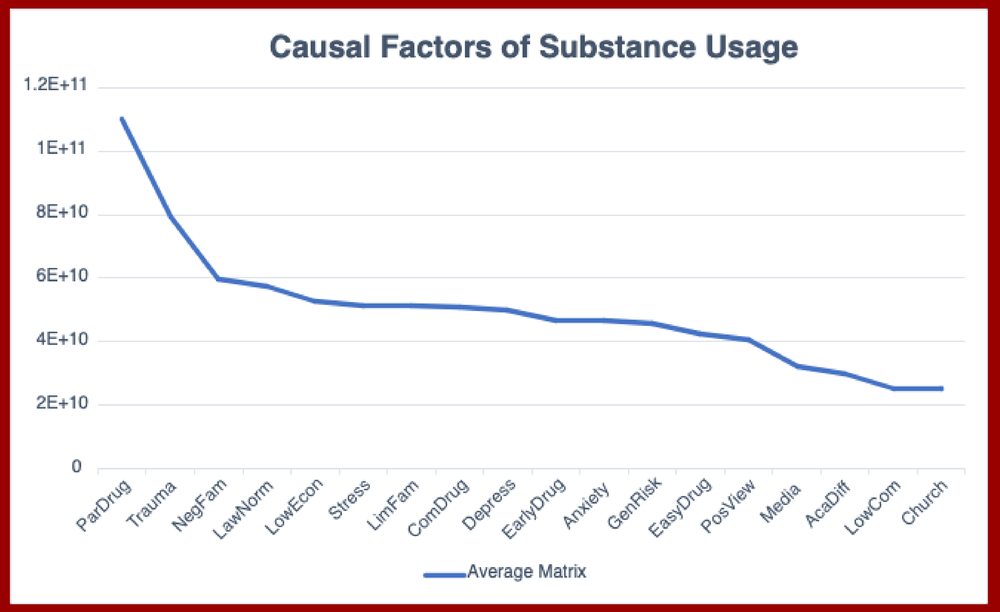


C. Average Matrix of Connections

Average	Stress	GenRisk	EarlyDrug	Depress	AcaDiff	Anxiety	ParDrug	NegFam	Trauma	LowCom	LimFam	PosView	ComDrug	LowEcon	EasyDrug	Media	LawNorm	Church
Stress	1	0	0.41	0.59	0.5	0.95	0.25	0.2	0.3	0.34	0.23	0.11	0.25	0.16	0.05	0.07	0	0.18
GenRisk	0.23	1	0.52	0.48	0.02	0.36	0.82	0.07	0.11	0.02	0.05	0.05	0.07	0	0.27	0	0.02	0
EarlyDrug	0.32	0.14	1	0.34	0.55	0.25	0.32	0.14	0.25	0.45	0.2	0.39	0.18	0.14	0.14	0.16	0.11	0.16
Depress	0.55	0.16	0.36	1	0.59	0.36	0.3	0.2	0.32	0.64	0.3	0.11	0.07	0	0.27	0.07	0.07	0.23
AcaDiff	0.7	0	0.11	0.14	1	0.14	0.09	0.09	0	0.86	0.2	0.14	0.16	0.14	0.05	0.07	0.05	0.02
Anxiety	0.82	0.16	0.3	0.52	0.55	1	0.18	0.16	0.39	0.45	0.2	0.09	0	0.02	0.2	0.09	0.02	0.07
ParDrug	0.52	1.68	0.93	0.25	0.18	0.32	1	1	0.98	0.18	0.82	0.59	0.11	0.55	1.07	0.05	0.07	0.43
NegFam	0.41	0.05	0.66	0.41	0.3	0.41	0.39	1	0.45	0.43	0.73	0.2	0.02	0.02	0.32	0.09	0	0.23
Trauma	1.16	0.07	0.64	1.18	0.34	1.16	0.41	0.48	1	0.45	0.39	0.14	0.02	0	0.27	0.05	0.05	0.23
LowCom	0.07	0	0.23	0.32	0.82	0	0.11	0.11	0.05	1	0.07	0.09	0.2	0.14	0.07	0.09	0.02	0.11
LimFam	0.43	0.02	0.3	0.52	0.3	0.41	0.16	0.73	0.39	0.36	1	0.2	0.02	0	0.07	0.05	0.07	0.61
PosView	0.16	0.05	0.7	0.11	0.14	0.18	0.18	0.14	0.05	0.16	0.14	1	0.61	0.07	0.32	0.39	0.18	0.14
ComDrug	0.23	0.02	0.8	0.09	0.36	0.14	0.23	0.05	0.3	0.3	0.07	0.73	1	0.23	0.59	0.09	0.23	0.23
LowEcon	0.93	0	0.11	0.2	0.36	0.16	0.7	0.14	0.05	0.27	0.07	0.07	0.61	1	0.18	0.02	0.14	0.09
EasyDrug	0.11	0.02	0.93	0.05	0.14	0.11	0.3	0.16	0.05	0.07	0.05	0.27	0.61	0.14	1	0.11	0.34	0.07
Media	0.14	0.05	0.43	0.05	0	0.05	0.07	0	0.02	0.05	0	1.18	0.48	0.02	0.11	1	0.32	0.02
LawNorm	0.16	0.05	0.64	0.02	0.05	0.07	0.32	0	0.09	0.09	0	0.84	1.39	0.07	1	0.23	1	0.11
Church	0.18	0	0.18	0.3	0	0.18	0.16	0.27	0.02	0.07	0.23	0.14	0.05	0.02	0.07	0.05	0.14	1

Note. This shows connections between variables, with higher numbers indicating a higher connection.

D.



Results and Conclusion

Results:

- Chart A lists the 18 causal factors along with their respective abbreviations.
- Figure B shows a sample concept map, demonstrating how participants made connections between the different factors. An arrow labeled 3 indicates a stronger connection, and one labeled 1 indicates a weaker connection.
- Chart C shows the total average matrix of the connections. Connections were analyzed using the Sloman Rank Index. This is measured in degree centrality, which measures how many links each factor has. It is also measured in eigenvector centrality, which measures which factors are connected to other factors with high scores.
- Graph D shows the level of importance of each factor, with higher numbers indicating higher perceived perception of importance.

Conclusions:

- Students believe that parental drug use, trauma, and negative family management were the top three causes of substance abuse
- Students also believe that academic difficulties, low commitment or involvement in school or work, and low church attendance were the three lowest causes of substance abuse

Future Work

1. Create a clinical tool used to assist with perceptions around causal factors for substance use disorder. It could be used to replace patient/client history information.
2. Create a preventative program for young adults and teenagers on what they believe substance abuse stems from to show where they may lack knowledge.
3. To collaborate with professionals, for them to create their own concept maps to see the difference between undergraduates and professionals. To see a reduced variability with professional training.

References

Kelley, B. (2021). *Drug abuse across the lifespan: A biopsychosocial approach* (5th ed.). Kendall Hunt.