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Quantitative Research Article Critique

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Abstract

In this critique paper I examined an article by J.V. Amsterdam, T. Brunt, and W.V.D. Brink (2015) entitled *“The Adverse Health Effects of Synthetic Cannabinoids with Emphasis on Psychosis-Like Effects."*  The authors use a quantitative research style to explore the relationship between synthetic cannabinoids and the presumed adverse side effect of psychosis. The research in this study was not enough to prove a true correlation between synthetic cannabinoids and psychosis for several reasons. Synthetic cannabinoids are a fairly new drug, and not enough thorough research regarding the adverse side effects have been performed. The study also only utilized one search database to research and therefore did not have a wide variety of source material. Also, there are no studies proving synthetic cannabinoids are causing psychosis or if they are exacerbating an undiagnosed mental illness.

A. Problem and Purpose

The prevalence of synthetic cannabis abuse has become more commonplace among drug abusers. There are several adverse effects to using this class of drug and psychosis is a presumed side effect. The problem statement by authors Amsterdam, Brunt, & Brink (2015) clearly states, “In the last decade, the presumed association between cannabis use and the risk of psychosis in vulnerable individuals has been a major issue in the medical literature, because of its potential negative health impact.”(p. 1). The purpose of the study was to find research that clearly linked psychosis to synthetic cannabinoid use. The purpose of the research is clearly supported by research from several studies and uses a quantitative style to show supporting statistics and information.

The independent variable in this study is synthetic cannabis and the dependent variable is psychosis. The authors do not clearly state about variables as they also compare psychosis to natural cannabis. The research has significance for the nursing field as the symptoms of synthetic cannabis receptor agonist (SCRA) abuse is outlined. Also the differences between natural cannabis and SCRA abuse symptoms are shown. The chemicals possibly responsible for psychosis are also revealed to be THC or tetrahydrocannabinol and the chemical that protects from psychosis is CBD or cannabidol. Natural cannabis contains both THC and CBD and the side effect of psychosis is rarely seen. SCRAs on the other hand, do not contain the protective CBD and has higher concentrations of THC, and therefore may pose a greater risk of psychosis to abusers.

B. Method, Research, and Design

A research design is defined by the textbook *“Essentials of Nursing Research: Appraising Evidence for Nursing Practice”,* by authors D. F. Polit and C. T. Beck, (2014) as “an overall plan for addressing a research question, including strategies for enhancing the study’s integrity”. (p. 390). The research design type of this study is never clearly stated. The research design could have been more rigorous, as the search only utilized Pubmed search results and the references found in those Pubmed articles. Given the purpose of the article, a more thorough search, utilizing different methods of research should have been conducted.

Appropriate comparisons are made throughout the research. All research data regarding SCRAs are compared to research data regarding natural cannabis. This is found in almost all aspects of the research. Examples of this are comparing the chemicals found in both SCRAs and natural cannabis, the signs and symptoms found when abusing each, medicinal uses if any, how SCRAs and cannabis relate to psychosis, what the legality of the drug is, how readily it is detected in drug tests, and what age groups are most likely to abuse each.

The number of data collection points found in this study was inadequate as all research was retrieved from Pubmed searches. While the research used many statistics and several tables, the data collection process is never elaborated on further than referring to the Pubmed search results. The research does quote several studies throughout, but the collection process is never elaborated on.

The study does successfully minimize bias as the researcher did not state any preconceptions, participants are based off of statistics and no inference at psychosis is noted. In regards to validity, internal validity is not threatened, as there are no competing explanations. External validity is not threatened as the study can be generalized throughout the population to all psychosis patients. An example is schizophrenia patients who abuse SCRAs. They may experience increased psychosis, which is related to increased THC and low levels of CBD. This may also be relatable to those without psychiatric history but more research is needed.

As stated in a comparable study*, “Spicing Thing Up: Synthetic Cannabinoid”* by M. Spaderna, P. H. Addy, and D. C. D’Souza, (2013) “To what extent the available literature accurately represents the phenomenon of Spice is unclear. The medical literature relies heavily on case reports from the Emergency Department, which tend to highlight the extreme and catastrophic reactions to Spice use.” (p. 2). There is not enough research in regards to the adverse effects of SCRAs. Blinding is not utilized in this study and attrition was minimized as most information was taken from patients brought into emergency rooms suffering from possible drug induced psychotic episodes.

While the design type is never elaborated on, the design that is in use appears to be a non experimental correlation study as defined by the text *“Essentials of Nursing Research: Appraising Evidence for Nursing Practice”* (D. F. Polit and C. T. Beck, 2014). This study type examines relationships between two variables. In this case, SCRAs and natural cannabis in regards to how they may cause new cases or exacerbate preexisting psychosis.

C. Population and Sample.

The population was identified as both Americans and Europeans who abuse SCRAs and natural cannabis. The population also varied in age groups as it showed that the majority of SCRAs abusers were younger. The majority of overdoses were age 12 to 29 years old and one study states this age group makes up 75% of the SCRAs overdose population. The sampling design was also the best choice to enhance the sample representativeness as it sought to prove via statistics that SCRA were linked to psychosis.

The sample size was adequate for the study as it utilized studies with thousands of participants. Power analysis was not used in this study as it follows a correlation/ meta-analysis style of quantifying information from several studies accessed via Pubmed.

Conclusion

In conclusion, SCRAs are presumed to have a side effect of psychosis, but based on how new abuse of this drug is, and lack of in depth research regarding side effects, psychosis cannot be proven definitively. Whether the psychosis is new onset or an exacerbation of an underlying psychiatric illness, cannot be proven until further research is done regarding the matter. This study was inconclusive in proving its problem statement.

References

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