Synthetic Cannabinoids and psychosis

Monique Crawford

NUR 3130

Professor Rita Debonis

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The use of synthetic cannabinoids has gained significant popularity in the last decade, considering that it has been around since the 1960’s. These compounds were initially developed by some pharmaceutical companies and even academic laboratories for treatment of pain (Oluwabusi 2012, pg 393). However the drug was never approved by the Food and Drug Administration (Pierre 2011, 55). In a non-experimental quantitative study and review, 250 papers were retrieved from PubMed reviewing this growing trend of cannibinoid use. The focus was on the drugs adverse side effects, especially psychosis. This has sparked many reasons to compare these synthetic cannibinoid receptor agonist (SCRAs) to the more natural herbal cannibis, marijuana; especially in respects to the side effects both drugs potentiate. It is also important to note that natural herbal cannibis has high levels of cannabidiol (CBD), which has anxiolytic and antipsychotic properties, compared to SCRAs which contains little to no CBD thus creating a bigger risk of psychosis (Amsterdam, Brunt, Brink 2015, pg 1). Further more, we will look into the study, the data collected, how it was analyzed, along with its findings and limitations.

**Data Collection and measurement**

The independent variable in the studies reviewed was the synthetic drug, SCRAs, and the dependent variable is the physical and psychiatric effects they produce. The term psychosis is conceptualized as the presenting symptoms from the drugs such as anxiety, agitation, depression, blunted effect, hallucinations, euphoria, and other cognitive deficits (Amsterdam et al 2015, pg 6). However, the best possible methods of measuring these variables were not carried out in a traditional conduction of a research study such as experiments and interviews. Data was collected from other studies based on the activities, opinions, surveys, and hospitalizations and reactions of individuals who experienced the drug. For instance, the U.S. Poison Center noted psychotic episodes in 14-40% of SCRA overdoses that came to their attention (Amsterdam et al 2015, pg 5). The data collected revealed that 10 psychiatric patients who had never experienced psychosis before their first use of the drug had a new onset of effects after repeatedly using it. 7 of these 10 patients had symptom resolution within 8 days, however the other 3 had persistent symptoms past 5 months (Amsterdam et al 2015, pg 5). Even though this particular report can be a criterion for trustworthiness and credibility, we cannot rule out the presence of any bias. The information presented is from second hand information analyzed and referenced from PubMed search strings, and therefore, more reliable ways of retrieving this information should be exhausted, such as personal interviews and first hand observations.

**Procedures**

No specific interventions were implemented, mainly because data collected were non-experimentally. The information gathered did not have a procedure section, and neither did the research study mention if the other studies conducted used any procedures to obtain their information. The data collected has no evidence of intervention fidelity; and there is also no proof that this was done in a manner of minimizing bias. There was also no information that stated whether or not the staff that collected the information was appropriately trained to do so. The information presented targeted a certain group of individuals, and so information provided catered mainly to showing how SCRAs negatively affected the psychological state of this particular group.

**Results: Data Analysis**

The method of collecting the statistics of these studies was not mentioned; however; one study revealed some very important statistics comparing the use of SCRAs and cannibis. Their opinions on the drug, once again supported the fact that SCRAs produces a more negative effect. The study was an anonymous online survey of 2513 people conducted in 2011. Almost all users had experience with natural cannibis, 40% used SCRA within the last year. The study states “Cannibis was noted more positively than SCRAs by 93% of users because of the pleasant effects during the high, and better functioning after the drug. However SCRAs use was associated with stronger negative hangover like effects” (Amsterdam, et al 2015, pg 3). The use of such large sample sizes for surveys has great statistical significance because there is an increased probability of obtaining reliable information on the effects of both drugs. Nevertheless, it cannot be confirmed that the most powerful analytic method was used, because the studies lacked a procedure and methods sections. Also possible confounding factors in the other studies were presented; these included attention deficit hyperactive disorder, post-traumatic stress disorder, and poly drug use of alcohol and cannibis use (Amsterdam, et al 2015, pg 5). Even though the study lacked appropriate analytical methods, the hypothesis was still clearly supported that SCRAs and psychosis are very interrelated.

**Findings**

The population focused on in the studies were young adults and teenagers, most being inexperienced drug users, or people who had already experienced the high of natural cannibis. Most of the information from these studies revealed mainly the effects of SCRAs, and its known short-term effects. As far as the effect size and precision of estimates of these individuals, the Poison centers in the United States received an increasing number of telephone calls about SCRAs, with 7000 calls alone in 2011. 60% of these phone calls were about individuals under 25 years of age (Amsterdam et al, 2015, pg 5). Also in another American study, 60% of SCRA overdoses occurred in people under 25 years of age, with 57% being younger than 20 years old (Forrester 2013). Comparatively, the Global Drug Survey (GDS), estimated that SCRA users have 30 times more of a higher risk of seeking ER help compared with traditional cannabis (Winstock, 2014). Once again, this information supports the problem.

**Summary Assessment**

A specific limitation of the studies observed in this review is the fact that the excessive use of SCRAs among our young people has only been seen in last 10 years. This poses an issue for more solid facts because the number and quality of the studies are lacking; which could provide more evidence that psychosis is an absolute adverse health effect of SCRAs. Other limitations included insufficient medical history of the individuals observed, therefore, it was hard to rule out whether psychotic symptoms of some people were due to an existing pathology, or even side effects of other illicit drugs they might have abused (Amsterdam et al 2015, pg 6). The study suggests that moving forward with the information presented in this review should be done cautiously due to these current limitations. Despite these inadequacies, I personally have confidence in the value and overall conclusion of this review. Based on the statistical results about increased ER visits, hospitalizations, info from the Poison Center, and other anonymous surveys; it is quite evident that SCRA use is on the rise, and it brings a lot of negativity with it. To support this, there are many reasons why the younger population would want to try this drug; it can easily be accessed, it is cheaper than other street drugs, it is undetectable in routine drug tests, and it currently carries has no risk of illegal reprimanding (Pierre 2011, pg 55). All these factors contribute to the rise in the use of the drug.

This research and others of similar nature serves a great importance in nursing, and the medical field in general. With the increase in the use of SCRAs, it’s toxicity, range of overdose, and profile of psychosis; there are more ER and hospital admissions. Nurses and other medical personnel should be aware of the symptoms and other adverse health effects; this way, the delivery of care long with health promotion could be started early and possibly lead to prevention of it’s use among our young people.

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