Synthetic Cannabinoids and psychosis

Monique Crawford

NUR 3130

Professor Rita Debonis

November 10, 2015

The use of synthetic cannabinoids has gained significant popularity in the last decade, considering that it has been around since the 1960s. The original purpose was for research and its potential use in clinical practice; however, the drug was never approved by the Food and Drug Administration (Pierre, 2011). With the appearance of synthetic cannabinoids on the free market, and the increase in use among young adults and teenagers, more research is being done because of the rise in the negative impact of the drug. With this being said, synthetic cannabinoid has numerous adverse effects, especially in young inexperienced users. In this non-experimental quantitative study and review, comparisons were made between the side effects of using natural cannabis (herbal marijuana) and using SCRAs (synthetic cannabinoid receptor agonists). These studies showed that there were frequent and severe negative effects with the use of the latter. The purpose was to find relative data on human studies that could reveal the overall toxicity profile of SCRAs, focusing on the aspect of psychosis (Amsterdam, 2015). The sample included 250 different papers retrieved from PubMed that included searches such was “Spice/toxicity”, “Synthetic Cannabinoids”, and “Marijuana/Psychosis” (Amsterdam et al., 2015). The independent variable was the synthetic drug (SCRAs), and the dependent variable is the physical and psychiatric effects they produce. The comparison in the study was the side effects of natural cannabis compared to those of SCRAs.

This research and others like it 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, delivery of care along with health promotion could be started early and possibly lead to prevention of use among our young people.

The information gathered in this research was from other studies conducted, and collectively analyzed and compared. This showed great support for the problem at hand, because the data showed consistency in the patterns of the variables. Very appropriate comparisons were made in the study between natural cannabis and it’s synthetic counterpart. Mentioned in the study was a large anonymous survey of 2513 people of which 17% reported using SCRAs, and almost all had experience with natural cannabis. Cannabis was rated more positively than SCRAs (93% of users), because of the pleasant high and better functioning after using the drug. Compared to SCRAs, which had stronger negative after effects such as hangovers, extreme agitation/irritability, drowsiness/lethargy, paranoia and hallucinations (Winstock and Barratt, 2013). The use of this sample size showed great statistical significance and power. The use of this large sample size increased the probability of obtaining reliable information on the cause and effect of both drug. There have also been reports of seizures after the use of SCRAs, which is rarely seen in cannabis use (Jerry, 2012). The Center for Disease Control and Prevention is currently investigating the link between acute kidney injury and SCRA use due to several cases of such occurrence (Amsterdam et al, pg. 4). There have been no reported cases of kidney injury after the use of natural cannabis. Other side effects of SCRAs include tachycardia, hypertension, hyperglycemia, and hypokalemia. Prolonged cognitive impairments have also been present, which could be due to the slow elimination of the synthetic drug (Barratt et al., 2013; Hirvonen et al., 2012). As far as long term adverse effects, SCRAs compared to cannabis has a higher abuse, dependency, and tolerance rate that develop quicker than cannabis use (Zimmermann, 2009).

According to another study used in this systematic review, the average age of patients who needed ER assistance after cannabis use was 30 years old, compared to SCRA use, the average age was 24 (DAWN, 2012). In another American study, 60% of SCRA overdose occurred in people under 25 years of age (AAPCC, 2012; Hu et al., 2011) and 57% were younger than 20 (Forrester, 2011). However, they study concluded that this data may have some bias due to the under reporting of ER admissions because not all people with severe reactions will visit the hospital for care.

The population of focus in these studies was mostly young inexperienced drug users ranging from teenagers to young adults. Because synthetic marijuana is not very expensive, easy to attain (eg. via the internet), is marketed with attractive labels, and has less legal implications; young adults and teenagers are the heavier consumers (Barratt et al., 2012). SCRAs are available world wide, but the prevalence is high in the United States, the UK, and other European countries. For instance, in 2011, the 12 months prevalence rate of SCRA use among high schools students in Michigan was 11.4% (Univ Michigan, 2011). In the UK, the use of SCRAs among clubbers had a high prevalence rate of 10.3% (Mixmag, 2012).

This particular review of these studies and the quantitative design utilized has rigorously integrated research information from various studies on the topic of synthetic cannabinoid, which in turn has delivered useful conclusion and evidence on its use. However, there were still limitations due to the fact that the use of SCRAs has only been in use for a decade. More studies need to be conducted to further compare the use of SCRA and natural cannabis, to confirm both the short and long term effects. The main concern should be the psychotic and psychosis like effects that this drug possesses. With more evidence, proper protocols in hospitals along with proper legislation will be put in place to possibly decrease the prevalence of use among young people. In the meantime, studies like these with the data collected serve as reliable sources until further changes are set into motion.

REFERENCES

Jan GC van Amsterdam, T. B. , Brink , W., Brunt, T.M. (2015). The adverse health effects of synthetic cannabinoids with emphasis on psychosis-like effects. *Journal of Psychopharmacology* , 1-10.

Pierre, J. M. (2011). Cannabis, synthetic cannabinoids, and psychosis risk: What the evidence says. *Current Psychiatry* ,*10*, 9, 49-57.

Polit, D. F., Beck, C.T. (2014). *Essentials of Nursing Research.* Wolters Kluwer Health.