



## Editorial

## The Mix of Science, Community Beliefs and Health Practices Affecting Children: Part 2

Since the editorial *Marijuana: The Societal and Health Paradox* (Betz, 2016) was written just three years ago, the landscape of marijuana legalization has changed dramatically. Additionally, there is a growing body of evidence raising alarming concerns about its detrimental effects upon adolescents and young adults. In 2016, medical marijuana was legalized in 23 states as well as the territory of Guam and the District of Columbia; in 2019, the use of medical marijuana has been legalized in 34 states as well as the U.S. Virgin Islands and Puerto Rico. In 2016, there were four states that legalized marijuana for recreational use; now there are ten (The White House, Office of National Control Drug Policy, n.d.; National Conference of State Legislatures, 2018; National Conference of State Legislatures, 2019). In spite of the passage of legislation at the state levels enabling legalization of marijuana, it remains a Schedule 1 Controlled Substance at the federal level (Drug Enforcement Administration [DEA], n.d.). A recent report issued by the DEA continues to list marijuana as a Schedule 1 Controlled Substance (United States Department of Justice, Drug Enforcement Administration, 2016) for the following reasons: “1. Marijuana has a high potential for abuse. 2. Marijuana has no currently accepted medical use in treatment in the United States. 3. Marijuana lacks accepted safety for use under medical supervision.” (DEA, 2016, p. 5).

In this permissive climate of legalization of marijuana with laws regarding both medicinal and recreational use, adolescents may conclude erroneously that marijuana use is not hazardous to their health or have untoward social consequences (Audrain-McGovern, Stone, Barrington-Trimis, Unger, & Leventhal, 2018). The media reports and marketing of marijuana as an alternative treatment for a myriad of conditions can influence adolescents to view it beneficially. Adolescents may witness parental and other adult usage leading them to believe marijuana use is acceptable. Additionally, with the relaxing of laws, easier access conveys another dimension of acceptability (Ammerman, Ryan, & Adelman, 2015; Knapp et al., 2019). It is not difficult to envision the environments wherein marijuana is now being legalized for recreational purposes. It is not a far reach to speculate that the marketing efforts to attract adult customers will have appeal to those who are underage.

Marijuana use is at its highest level in three decades (American Academy of Child and Adolescent Psychiatry, 2018). Different methods of administration are available such as smoking, vaping and use of edibles. A recent national online sample of 2, 630 adolescents, aged 14 to 18 years, found that the majority preferred smoking marijuana as an administration method (Knapp et al., 2019). Differing methods of administration have been suggested as creating more opportunities for use among adolescents (Audrain-McGovern et al., 2018).

More recent studies have found that adolescence is a particularly vulnerable period for marijuana use. The research conducted on both short and long-term consequences of using marijuana for teens are

worrisome and alarming (Hall & Degenhardt, 2009). Studies have demonstrated the more immediate effects of marijuana usage on cognition such as reduced ability to concentrate, short-term memory impairment and learning problems (Ammerman et al., 2015). The long-term effects of ongoing marijuana use on educational attainment indicate lower levels of academic achievement (Cerdá, 2017). Adverse effects of regular marijuana usage have been associated with untoward mental health outcomes (Hall & Degenhardt, 2009). Approximately 10% of individuals using marijuana become addicted; users who begin during adolescence are at higher risk for addiction with estimates at 17% (Hall & Degenhardt, 2009; National Institute on Drug Abuse, 2014).

Disquieting evidence has been reported on the use of marijuana and the onset of schizophrenia and other psychotic disorders. Exploration of this troubling dilemma affecting adolescent marijuana users and those at risk for using marijuana is particularly timely given the shifting of public attitudes. Investigators have reported higher risks for adolescent marijuana users being diagnosed with schizophrenia spectrum disorder (SSD) as compared to adolescent nonusers (Hall & Degenhardt, 2009). The association between adolescent marijuana users and the onset of serious mental illness is of considerable public health and societal concern. Researchers have noted that adolescents with a family SSD risk who use marijuana may increase their risk for developing SSD and intensification of SSD symptoms (Shahzade, Chun, DeLisi, & Manschreck, 2018). A study conducted to explore the association of adolescent marijuana use and manifestations of acute mental health symptoms found adolescents who used marijuana more often reported higher rates of hallucinations, anxiety and paranoia (Levy & Weitzman, 2019).

The challenges of conducting investigations exploring the association of marijuana usage with these serious mental health illnesses are evident. The research limitations associated with cross sectional and qualitative descriptive research designs prevent causal inferences (Knapp et al., 2019). The methodological limitations associated with self-report and the problems with gathering of reliable retrospective data such as the potency of the marijuana itself, patterns of usage, age of onset, and administration types pose challenges as well (Shahzade et al., 2018). Experts have referred to these investigations as seeking to explore the “complex connection between cannabis and schizophrenia” (Manseau & Compton, 2018, p. 1). Drawing causal inferences about the relationships between marijuana usage and serious mental illness is most complicated given the array and inter-relationships of biopsychosocial factors that are associated with serious mental illness. It is apparent that more research is warranted to enlarge fuller understanding of the association of adolescent usage and subsequent risks associated with serious mental health problems and strategies for prevention and treatment.

The passage of laws effecting legalization of marijuana for recreational purposes on adolescent use has yet to be determined. Efforts are underway to closely monitor the consequences of recreational marijuana legalization. A recent secondary analysis of cross-sectional survey data of the Monitoring the Future (MTF) study collected annually of 8th, 10th and 12th graders from 400 schools nationwide provided interesting findings of students from Washington and Colorado wherein recreational marijuana has been legalized (National Institute on Drug Abuse, 2018). In Washington, perceived harmfulness of marijuana among 8th and 10th graders decreased significantly compared to grade level peers in states wherein recreational marijuana is not legalized. However, differences were not found on this measure with Washington 12th graders and all grade levels in Colorado compared to peers of states wherein recreational marijuana is not legalized. The prevalence of marijuana use post legalization significantly increased with 8th and 10th graders in contrast to no changes in usage prevalence in Washington 12th graders and all grades in Colorado and the states wherein recreational marijuana is not legalized (Cerdá et al., 2017). As evidenced by this particular study, more research is needed to monitor the short and long-term outcomes of marijuana legalization to track the consequences for the adolescent population. A strategy recommended by experts as the legislation for marijuana legalization for medicinal and recreational is passed by states is to advocate that funding be included for prevention programs for adolescents (Lee-Winn, Mendelson, & Johnson, 2018).

The National Association of School Nurses (NASN, 2019) and the National Council of State Boards of Nursing (NCSBN, 2018a, 2018b, 2018c, 2018d, 2018e, 2018f) provide useful and comprehensive guidance on nursing guidelines for medical marijuana. The NASN (2019) *Position Brief, Cannabis/Marijuana* contains helpful guidance for pediatric nurses in clinical settings and can be accessed from their website (NASN, 2019). For states that have or will consider liberalizing the availability of marijuana for medicinal and recreational purposes, advocacy efforts as mentioned previously can be undertaken by nursing organizations, to include funding for prevention programs directed to adolescents (Chen et al., 2018).

Nurses can join with other health professional organizations to educate the public, parents, and adolescents on the potential risks associated with marijuana use. It is important that health care professionals lend their voices to be heard on the serious consequences of marijuana legalization on children and youth. (American Academy of Child and Adolescent Psychiatry, 2017; NASN, 2019; NCSBN, 2018b, 2018c, 2018d, 2018e, 2018f). Given the shift in public attitudes and mounting legislative efforts to legalize the use of marijuana for medicinal and recreational purposes, it becomes incumbent upon pediatric nurses to take advantage of clinical encounters to educate children and adolescents beginning during the middle school period and parents as to the health risks associated with marijuana usage (Chen et al., 2018).

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