

Unintentional Cannabis Ingestions and Supervisory Neglect

HINA RAZA, MD, MSc; SARAH BECHTA, MD; STEPHANIE FOGLI-TERRY, MSW, LCSW; KATHERINE MASON, MD

ABSTRACT

Unintentional pediatric ingestions of substances can lead to serious and even fatal consequences in children¹ and raises concern for supervisory neglect. Supervisory neglect occurs when a caregiver's supervisory decisions or behaviors place a child in their care at significant risk for physical, emotional or psychological harm.² A caregiver who is taking prescription medication or who uses recreational or therapeutic substances, such as cannabis, must protect children in their care from accessing these potentially harmful drugs. Studies have demonstrated that unintentional cannabis ingestions by children has increased in states that have legalized medical and recreational cannabis.³ Given the changing laws surrounding cannabis in Rhode Island, this study aims to provide a conceptual framework to diagnose, manage and understand supervisory neglect when children present to care with a cannabis ingestion. Additionally, this paper provides guidance for providers to help prevent unintentional cannabis ingestions.

KEYWORDS: child maltreatment, supervisory neglect, cannabis, ingestion

CASES

The caregiver of a 3-year-old child contacts their primary care provider after the child was found eating cannabis gummies. The patient is referred to the Emergency Department and has a normal mental status. The urine toxicology screen is positive for cannabinoids, the rest of the medical evaluation is negative.

A 5-year-old child is found unconscious in the home. At the hospital he is intubated for a GCS of 7 and is admitted to the pediatric intensive care unit. The urine toxicology screen is positive for cannabinoids, the rest of the medical evaluation is negative.

Question: Should these cases be reported to child protective services (CPS)?

CANNABIS

Globally, cannabis is the most commonly used psychoactive substance.⁴ Cannabis refers to the different psychoactive

substances that come from the plant *Cannabis sativa*, which includes marijuana (dried and crushed leaves and flower buds), hashish (the resin of the flower buds), and cannabis extracts (oils or wax).⁵ The psychoactive properties of cannabis are mainly produced by the cannabinoid delta-9-tetrahydrocannabinol (delta-9-THC).⁶ Another major neuroactive compound found in cannabis is cannabidiol (CBD), which does not have the psychoactive effects of delta-9-THC, but does have other central nervous system effects.⁶

Cannabis Legislation

Cannabis decriminalization refers to the absence of criminal penalties and either no or decreased civil penalties for its possession or personal use.⁷ Cannabis legalization refers to the permission to grow, sell and possess cannabis.⁷ Colorado was the first state to legalize the use of cannabis in adults (21 years and over).⁸ As of February 2022, in the United States, medical cannabis is legal in 37 states, three territories and the District of Columbia.⁹ As of May 2022 recreational cannabis is legal in 19 states.⁹ In the state of Rhode Island, medical cannabis was legalized in 2006 and recreational cannabis was recently legalized in May 2022 for adults.⁹ Dispensaries received state approval to sell cannabis products as of December 1, 2022.¹⁰ The legalization of cannabis in Rhode Island increases the likelihood of there being cannabinoid containing products in places where children live and play. Unintentional cannabis ingestion in children poses a threat to their physical safety and therefore supervisory neglect should be considered in all cases of unintentional cannabis ingestions in children.

Unintentional Cannabis Ingestions

Most cannabis ingestions are unintentional in children younger than 12 years old and the highest number of unintentional ingestions occur between ages of 1 and 3 years old.⁸ In addition to the increased incidence of unintentional cannabis ingestions by young children in states that have legalized medical and recreational cannabis, a large study has shown that children who unintentionally ingest cannabis in these states, have more serious symptoms requiring a greater frequency of critical care admissions as compared to states where cannabis use is illegal.³ The authors discuss that this could be due to children having increased access to cannabinoids in larger doses, caregiver unfamiliarity with

risks of pediatric exposure to cannabis, or greater potency of the cannabis than in the past.³ In fact, THC concentrations are much higher in modern cannabis products than in the past.^{8,11} A recent systematic review and meta-analysis found that concentration of THC in international cannabis markets increased from 1970 to 2017, while CBD concentrations remained the same.¹² Similarly another study found that the average THC concentration in 2009 was more than 9 times greater than that of 1970.¹³ The severity of symptoms resulting from an unintentional cannabis ingestion can be influenced by factors such as the age/body mass of the child, the form of the cannabis, and the dose of cannabis (THC).¹⁴ Symptoms frequently reported in unintentional pediatric ingestions include sedation, lethargy, ataxia, tachycardia, and vomiting.¹⁴⁻¹⁶ Central nervous system and respiratory depression requiring intubation is less common but may be associated with significant morbidity, psychological distress and financial expense.¹⁴⁻¹⁶

In a retrospective cohort study conducted in Colorado comparing the incidence of cannabis exposures before and after legalization, the rate of poison control center cases increased by 34% between 2009 and 2015 and was greater than the rest of the United States.¹⁴ In addition, a large number (35%) of those children presenting for ingestions in the study required hospital admission.¹⁴ In the same study, the authors found that caregivers disclosed a history of children's cannabis ingestion more frequently after its legalization. This is hypothesized to be due to the perception that there may be fewer legal consequences of the ingestion because of legalization.¹⁴ This decrease in social stigma may encourage disclosures of unintentional cannabis exposures and thus facilitate accurate diagnosis.³ However, when assessing a child with clinical symptoms or history suggestive of cannabis ingestion, a urine toxicology screen for cannabis should always be obtained. Prompt diagnosis can prevent costly and potentially harmful interventions such as CT scans, lumbar punctures, and subspecialty consultation. Even though a caregiver discloses an unintentional cannabis ingestion, urine testing for all drugs of abuse including confirmatory testing should be obtained and can help determine if co-ingestion has occurred. This allows accurate diagnosis, may inform of other potential risks to the child and will help in assessing safety.

SUPERVISORY NEGLECT

Neglect and Supervisory Neglect

Across the country physicians are mandated by law to report cases of suspected abuse and neglect to CPS. Neglect is defined as an act of omission that results in harm or potential harm.¹⁷ Neglect represents the most common and the most fatal type of child maltreatment in United States.¹⁸ In 2021, neglect represented 76.0% of the substantiated cases of child maltreatment in the United States.¹⁸ In Rhode

Island, in 2021, neglect accounted for 60.4% of indicated cases of child maltreatment.¹⁸ At a national level, 77.7% of child fatalities resulting from abuse were found to include neglect.¹⁸

Different forms of neglect include physical, supervisory, emotional, educational, medical, and nutritional neglect. Supervisory neglect, a form of physical neglect, represents the most frequent type of all investigated cases of neglect.^{19,20} Defining adequate and inadequate supervision remains challenging for providers.² Definitions may vary from one jurisdiction to another. Some definitions focus on caregivers' behaviors while other definitions focus on the effect of the caregiver's behavior, such as whether or not the child suffered harm.¹⁹ Per the American Academy of Pediatrics (AAP), supervisory neglect occurs when a caregiver's supervisory decisions or behaviors place a child in his or her care at significant ongoing risk for physical, emotional or psychological harm.² Regardless if a child suffered harm or not, neglect is defined in terms of caregivers' behaviors that lead to harm or that place children at risk of harm.

RISK AND MITIGATING FACTORS OF SUPERVISORY NEGLECT

When making a diagnosis of supervisory neglect, child abuse pediatricians consider a broad range of risk and mitigating factors. One recent qualitative and quantitative study explored and identified contextual factors associated with the general diagnosis of supervisory neglect.²⁰ These factors included absent caregiving, distracted caregiving, lack of adequate child care, limited problem-solving or caregiving skills, mental health issues of caregiver, exposure to domestic violence, exposure to intimate partner violence, substance-related problems of the caregiver, situations in which the child accessed and/or used substances, and situations in which the caregiver allowed the child to engage in risky behavior.²⁰ Specific to supervisory neglect in the case of unintentional cannabis ingestions, patient, caregiver and healthcare provider factors are important elements to consider when making the diagnosis. It is also important to consider larger societal factors that may have contributed to children having more access to cannabis in the home.

Child Factors

Children have increased access to cannabis, not only because of the legalization in many states but because of the cannabis formulation available. Cannabis edibles are a common source of unintentional ingestions in children.¹⁴ Many cannabis edibles are attractive to children as they often take the form of baked goods, candies, chocolate, popsicles and beverages, which can be difficult to distinguish from equivalent non-cannabis products.^{1,3} As noted by Wang et al, no other medications, drugs or controlled substances, other than sublingual tablets and films of fentanyl or buprenorphine,

hydrochloride/naloxone hydrochloride or gum containing nicotine or aspirin are available in food or beverages.³ Frequently there are multiple doses in one packet or product, and a child would not have the insight to stop at one dose.²¹ A small quantity of cannabis edible products may contain very high amounts of THC, causing more severe symptoms after ingestion.³ Safe storage in a location that is unknown to children, disposal and lock boxes/cabinets should be discussed with caregivers to prevent a potential ingestion.¹ An increasing number of states have passed regulations requiring child resistant packaging to prevent children from ingestions.¹⁴ However, this type of packaging is only effective if the product is kept in its original package and if it stays intact.^{1,14}

Caregiver Factors

Prior studies have reported a decreased perception of risk among cannabis users in places that have decriminalized cannabis.¹ Decrease in risk perception may lead to products being left in accessible locations and not properly stored away, increasing the risk of a child having access to these products resulting in unintentional ingestion. Wang et al found that, in addition to absent child-resistant packaging and safe storage, inadequate child supervision was associated with unintentional cannabis ingestions.¹⁴ Another caregiver factor to consider is caregiver impairment by substance use. An intoxicated or impaired caregiver cannot provide appropriate supervision, raising concern for neglect.

Provider Factors

Reporting cannabis exposures to social services remains a source of controversy in certain jurisdictions.¹⁴ Cases reported to regional poison control centers may underestimate the actual number of unintentional cannabis ingestions in children as it seems plausible that only children with more severe symptoms may trigger reports.⁸ Healthcare provider familiarity with the ingestion may also affect calls to poison control. While Wang et al found an increase in ingestions with the legalization of cannabis, they also found that social work consultations decreased from 93% from 2009–2013 to 66% in 2014–2015.¹⁴ Although in some cases of unintentional ingestions children may be relatively unharmed, it is important to recognize that all cannabis ingestions pose a risk of harm. Per the AAP, a cannabis ingestion in a child should prompt a notification to CPS.⁸ It is important to recognize the disproportionality that exists with increased reporting of children of racial and ethnic minorities and children with low socioeconomic status.²² A healthcare provider's understanding of supervisory neglect and creating a standardized, nonjudgmental approach when caring for a child who has an unintentional ingestion can help to address some of these disparities. When a mandatory report to CPS is necessary, medical providers should engage the child's caregiver in this process with an empathic and

direct approach. A transparent discussion with the caregiver should include: the risks to and effects on children exposed to cannabis and potentially other substances, the requirements for mandated reporting to CPS, and the resources and services available to the family in cases where substance use disorder has been identified. When a healthcare provider engages with caregivers in open dialogue to mitigate future harmful effects on children (discussing safe storage and parental cannabis use when not actively caring for their child) they set the stage for medical providers to be available as a resource as opposed to a professional charged only with reporting.²³ Identifying supervisory neglect can help to prevent future exposures to cannabis and/or other substances and potentially prevent other children from exposure who may live in the home. Education and safety recommendations surrounding safe storage of cannabis can be reinforced during the medical visit.

Societal Factors

A recent study analysing data from the National Poison Data System found that during the COVID-19 pandemic (from 2019–2020) there was an association with an increase in unintentional cannabis ingestions in children under the age of 6.²¹ It is hypothesized that this could be related to children having increased opportunity to access products in the home due to quarantines, school and daycare closures.²¹

CHILD WELFARE RESPONSE

The Rhode Island Department of Children, Youth and Families is the state's public child welfare agency. The Division of CPS operates a statewide 24-hour Hot Line to screen and respond to reports of alleged child maltreatment. Under RI General Law, everyone who has a reasonable suspicion that a child is being maltreated is required to make a report within 24 hours. A significant number of these reports involve concerns regarding caregiver substance misuse and children who are exposed to both legal and illicit substances. Since the legalization of cannabis in Rhode Island, DCYF has anecdotally seen an increase in the number of reports of accidental ingestions of cannabis products. DCYF determines child safety during Child Protective Investigations by assessing family functioning instead of focusing solely on the determination of whether or not an incident of maltreatment occurred. Since the legalization of cannabis in Rhode Island, unintentional ingestion by children has been treated the same as an unintentional ingestion of prescribed and over-the-counter medications.

When assessing child safety in these situations, factors considered include whether the caregivers were impaired at the time, how the child gained access, whether cannabis is usually stored safely, and whether the caregivers comprehend the significant risk posed by accidental ingestion of cannabis by children. Detailed interviews are conducted

with children, caregivers, other family members, witnesses and medical professionals. These interviews provide information about the circumstances surrounding the ingestion, and also inform the assessment of the caregiver's protective capacity and the family's overall functioning. Absent any safety threats which may or may not be related to the ingestion, children are not removed from their homes. The family is counseled about safe use and storage and the investigator views the home to confirm that safeguards are in place to keep cannabis and any other harmful substances out of the reach of children.

CONCLUSION

In the setting of changing cannabis laws in Rhode Island, primary care providers should be prepared to address childhood unintentional ingestion prevention and management when providing anticipatory guidance to families. Safe storage of all cannabis products should be discussed. In the case of children presenting to care with unintentional cannabis ingestions, healthcare providers should be familiar with the diagnosis of supervisory neglect and have a standardized, non-judgemental approach in discussions with caregivers. Poison control and CPS should be contacted and, if available, child abuse pediatrics teams should be consulted. When identifying the possibility of supervisory neglect, child, caregiver, provider and larger societal factors should all be taken into consideration and used to inform recommendations to prevent future unintentional cannabis ingestions.

CASES

Although the child in case 1 appears well, both children were in a situation that led to harm or that placed them at risk of harm, which raises concern for supervisory neglect. Both cases require a mandatory report to CPS, which will provide assessment and supports to ensure safety of the children in the home.

References

- Richards JR, Smith NE, Moulin AK. Unintentional Cannabis Ingestion in Children: A Systematic Review. *The Journal of Pediatrics*. 2017;190:142-152.
- Hymel KP. When Is Lack of Supervision Neglect? *Pediatrics*. 2006;118(3):1296-1298.
- Wang GS, Roosevelt G, Le Lait M-C, et al. Association of Unintentional Pediatric Exposures with Decriminalization of Marijuana in the United States. *Annals of Emergency Medicine*. 2014;63(6):684-689.
- World Health Organization. The health and social effects of nonmedical cannabis use. <https://www.who.int/publications/item/9789241510240>. Published 2016. Accessed 01/2023.
- Grant CN, Bélanger RE. Cannabis and Canada's children and youth. *Paediatr Child Health*. 2017;22(2):98-102.
- Rieder MJ. Is the medical use of cannabis a therapeutic option for children? *Paediatr Child Health*. 2016;21(1):31-34.
- Ammerman S, Ryan S, Adelman WP, et al. The Impact of Marijuana Policies on Youth: Clinical, Research, and Legal Update. *Pediatrics*. 2015;135(3):e769-e785.
- Grigsby TM, Hoffmann LM, Moss MJ. Marijuana Use and Potential Implications of Marijuana Legalization. *Pediatrics In Review*. 2020;41(2):61-72.
- National Conference of State Legislatures. State Medical Cannabis Laws. <https://www.ncsl.org/health/state-medical-cannabis-laws>. Published 2022. Accessed 01/2023.
- Rhode Island Set to Commence Adult Use Marijuana Sales on December 1 [press release]. Rhode Island, 11-22-2022 2022.
- Wilson J, Freeman TP, Mackie CJ. Effects of increasing cannabis potency on adolescent health. *The Lancet Child & Adolescent Health*. 2019;3(2):121-128.
- Freeman TP, Craft S, Wilson J, et al. Changes in delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) concentrations in cannabis over time: systematic review and meta-analysis. *Addiction*. 2021;116(5):1000-1010.
- Cascini F, Aiello C, Di Tanna G. Increasing delta-9-tetrahydrocannabinol (Δ -9-THC) content in herbal cannabis over time: systematic review and meta-analysis. *Curr Drug Abuse Rev*. 2012;5(1):32-40.
- Wang GS, Le Lait M-C, Deakynne SJ, Bronstein AC, Bajaj L, Roosevelt G. Unintentional pediatric exposures to marijuana in Colorado, 2009-2015. *JAMA pediatrics*. 2016;170(9):e160971-e160971.
- Cao D, Srisuma S, Bronstein AC, Hoyte CO. Characterization of edible marijuana product exposures reported to United States poison centers. *Clinical toxicology*. 2016;54(9):840-846.
- Claudet I, Le Breton M, Bréhin C, Franchitto N. A 10-year review of cannabis exposure in children under 3-years of age: do we need a more global approach? *European Journal of Pediatrics*. 2017;176(4):553-556.
- Dubowitz H, Giardino A, Gustavson E. Child Neglect: Guidance for Pediatricians. *Pediatrics In Review*. 2000;21(4):111-116.
- U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children Youth and Families, Children's Bureau. Child Maltreatment 2021. <https://www.acf.hhs.gov/cb/data-research/child-maltreatment>. Published 2023. Accessed 06/2023.
- Ruiz-Casares M, Trocmé N, Fallon B. Supervisory neglect and risk of harm. Evidence from the Canadian Child Welfare System. *Child Abuse & Neglect*. 2012;36(6):471-480.
- Sokol RL, Victor BG, Mariscal ES, Ryan JP, Perron BE. Using administrative data to uncover how often and why supervisory neglect happens: Implications for child maltreatment prevention. *Child Abuse & Neglect*. 2021;122:105321.
- Tweet MS, Nemanich A, Wahl M. Pediatric Edible Cannabis Exposures and Acute Toxicity: 2017–2021. *Pediatrics*. 2023.
- Putnam-Hornstein E, Needell B, King B, Johnson-Motoyama M. Racial and ethnic disparities: a population-based examination of risk factors for involvement with child protective services. *Child Abuse Negl*. 2013;37(1):33-46.
- Smith VC, Wilson CR. Families Affected by Parental Substance Use. *Pediatrics*. 2016;138(2).

Authors

Hina Raza, MD, MSc, Child Abuse Pediatrics Fellow, The Warren Alpert Medical School of Brown University, Hasbro Children's Hospital, Providence, Rhode Island.

Sarah Bechta, MD, General Pediatrician, Reliant Medical Group, Southboro, Massachusetts.

Stephanie Fogli-Terry, MSW, LCSW, Assistant Director, RI Department of Children, Youth and Families, Child Protective Services, Providence, Rhode Island.

Katherine Mason, MD, Associate Professor of Medicine, The Warren Alpert Medical School of Brown University, Hasbro Children's Hospital, Providence, Rhode Island.

Acknowledgments

HR had full access to all of the data in the study and takes responsibility for the integrity and accuracy of the content. KM is the senior author. Study concept and design: HR, KM. Drafting of the manuscript: HR, SB, SFT, KM. Critical revision of the manuscript for important intellectual content: HR, SB, SFT, KM. Final approval of the manuscript to be published: HR, SB, SFT, KM.

Disclosures

The authors have no financial relationships or conflicts of interest to disclose.

Correspondence

Hina Raza, MD

Lawrence A. Aubin, Sr. Child Protection Center

Potter Building 005

593 Eddy Street,

Providence, RI 02903

401-444-3996

Fax 401-444-3804

hraza@lifespan.org