

The Neural Consequences and Firearm-Related Fatalities Among Decedents with Cannabis Use

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BACKGROUND

- ❖ About 48.2 million Americans used cannabis in 2019 (CDC, 2021).
- ❖ Perception of cannabis to be a high-risk substance among American adults decreased from 41.6% in 2002 to 26.1% in 2018; while the perception that cannabis is of low risk increased by 86% from 2002 to 2014 (16.8% to 31.2%) (Levy et al., 2021).
- ❖ Medical cannabis is used for pain control, nausea and vomiting, PTSD, and wasting syndrome associated with HIV. However, its safety and efficacy need to be evaluated cautiously (Grinspoon, 2020).
- ❖ Cannabis can be addictive, and chronic use can affect memory, learning, attention, decision-making, and reaction time (CDC, 2021).
- ❖ While the role of cannabis in neurocognitive deficits, particularly in gun-related injuries remains debatable, more research is needed to examine the association of cannabis to firearm-related deaths.

PURPOSE

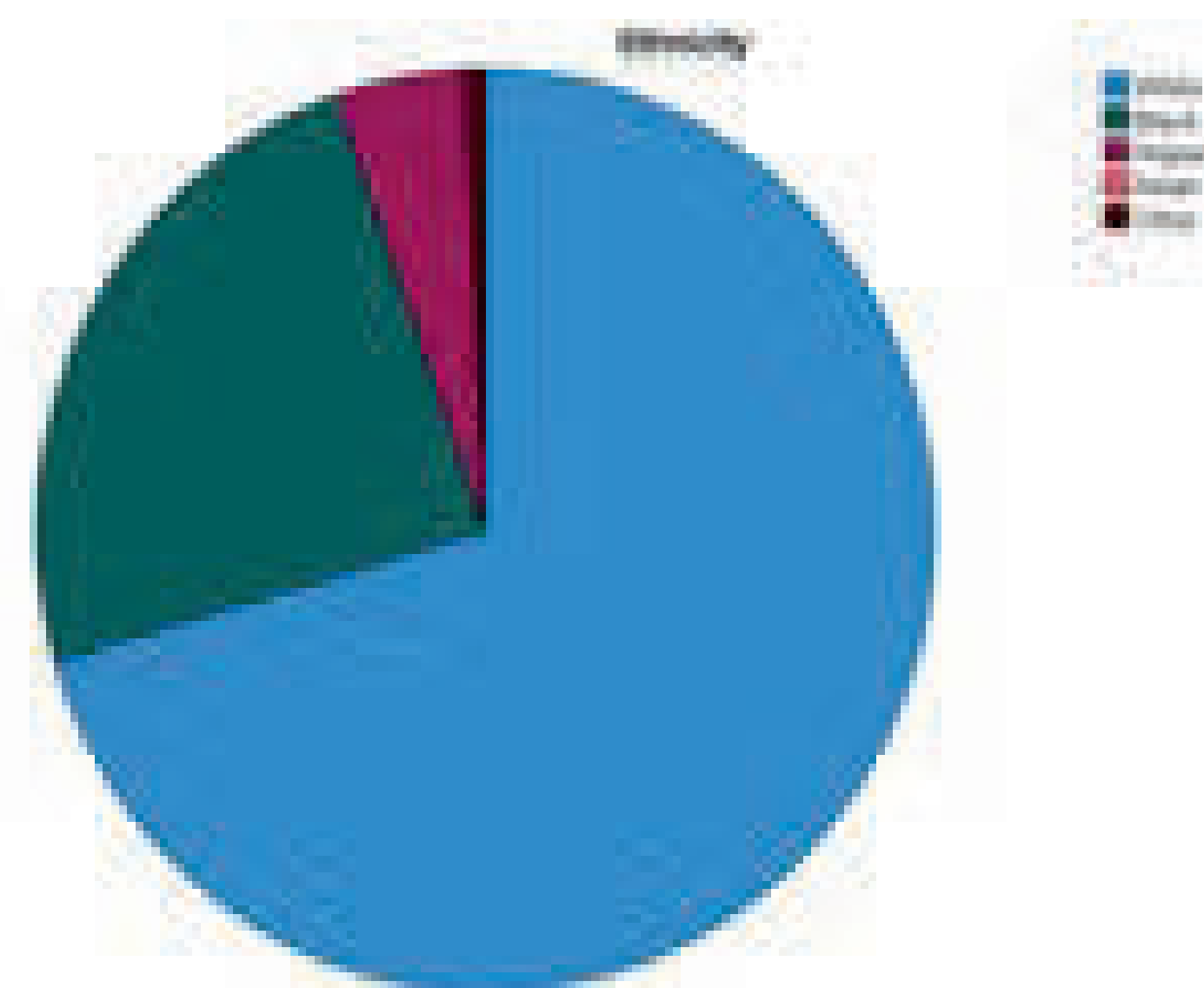
- ❖ To examine the neural consequences of decedents with cannabinoids in their system at the time of death, including firearm-related fatalities.

METHOD

- ❖ Retrospective study using de-identified data from the Florida Department of Law Enforcement in 2021.

Analysis:

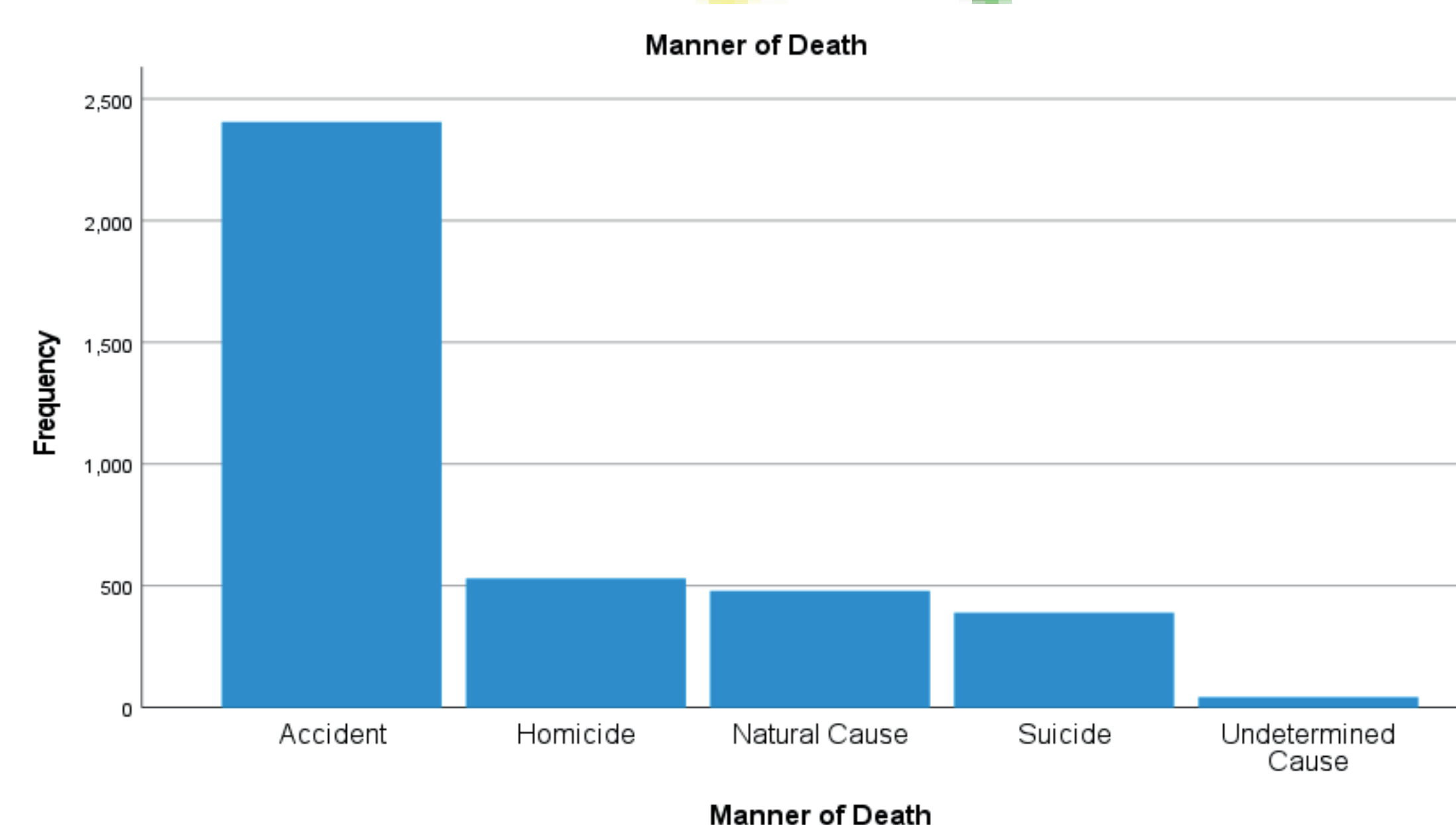
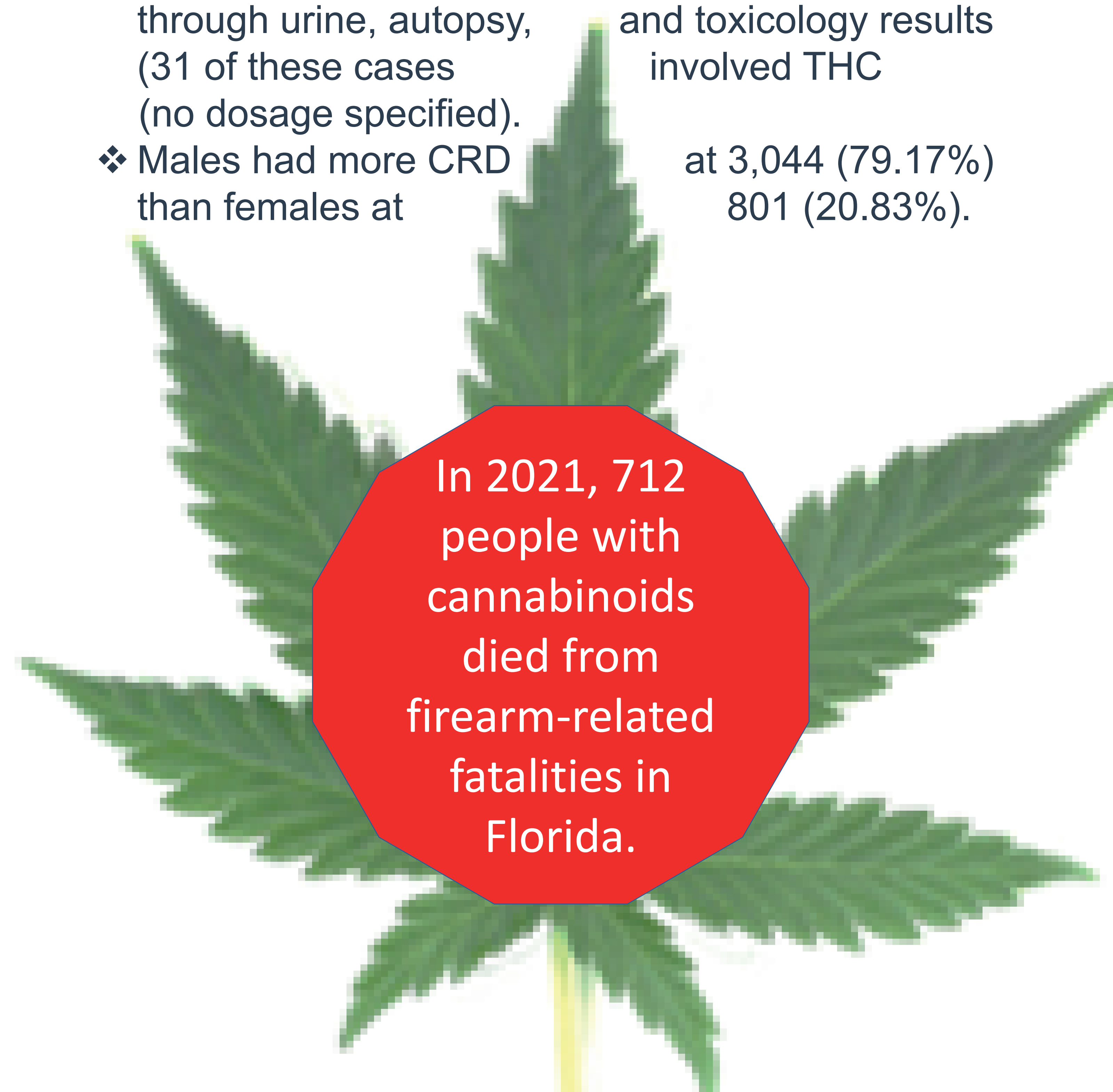
- ❖ Descriptive statistics to describe decedent's characteristics with cannabis-related deaths (CRD).
- ❖ Binary logistic regression to examine the association of cannabis use to CRD.



Distribution of Cannabinoids as a Cause of Death in 2021 by Ethnicity.

RESULTS

- ❖ 3,845 decedents with CRD in Florida in 2021 were included in the analysis.
- ❖ Age ranged from 0-87 years, mean age=38.96 (SD= 14.56).
- ❖ 55 of 3,845 died with cannabinoids as a cause of death as determined by the medical examiners through urine, autopsy, and toxicology results (31 of these cases involved THC (no dosage specified).
- ❖ Males had more CRD than females at 3,044 (79.17%) and 801 (20.83%).



Death consequences of people with cannabinoids in Florida (2021).

RESULTS (CONT.)

- ❖ Most decedents were non-Hispanic white (n=2,646) or nearly 69%.
- ❖ The neural consequences among 645 cases included stroke, venous thrombosis, anoxic encephalopathy, and head traumas.
- ❖ 2,405 decedents died in accidents while under the influence of cannabis
- ❖ 530 deaths were homicides, 389 as suicides, and 712 deaths were firearm-related.
- ❖ More people with firearm-related deaths (FRD) occurred among those ≤ 64 years old (n=676).
- ❖ More FRD among the 25-34 age group at 223 deaths, and 18-24 age group with 189 deaths.
- ❖ Those with multiple substances besides cannabis had .41 times the odds of dying from firearm-related injuries than those who used cannabis alone, OR=.413 (95% CI .34-.49).

IMPLICATION

- ❖ The results of this study have safety implications, particularly those young adults and the college-aged population with more firearm-related deaths than older adults.
- ❖ As the risk perception from cannabis use decreases among younger adults, more efforts are needed to curb avoidable deaths from cannabinoids.

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