

Sex Differences in Substance Use and Misuse

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Introduction

- Harmful use of substances in adults is an ongoing worldwide problem
- Prior research has found that many risk factors contribute to harmful substance use and overdose.
- Although toxicologists are often tasked with managing and preventing poisonings among this population, little is known about sex differences in these poisonings.
- Variations between male and female populations are previously reported in classes of harmfully used/misused drugs, severity of substance use disorder and risk of relapse.
- Identification of observed sex differences may provide us with additional information that will have implications for prevention, management, and treatment measures.

Problem Statement

The aim of this study was to provide a review of sex-specific differences of bedside medical toxicologist managed poisonings in adults between the ages of 18 and 65 that presented with harmful drug use/misuse.

Methodology

- Study data was obtained retrospectively from the Toxicology Investigator's Consortium (ToxIC) registry.
- Medical Toxicologists at numerous institutions nationally and internationally participate voluntarily.
- Toxicologists enter de-identified information into an online data collection form for all patients evaluated in person.
- Study protocol was determined to not require IRB review.
- ToxIC Registry cases of patients ≥ 19 and ≤ 65 years old, with harmful drug use or misuse during the timeframe June 2010 - December 2016 were studied.
- Demographics, primary agents of toxic exposure, administration route and complications were analyzed.
- Descriptive methods were used in the analysis.

Results

- 51,440 cases between 06/2010 - 12/2016.
- A total of 34,255 were between the ages of 19-65
- 3,426 were included for misuse/harmful use of a pharmaceutical or nonpharmaceutical substance.
 - 1,229 (36%) were female
 - 2,197 (64%) were male.
- Pharmaceutical Vs. Nonpharmaceutical
 - Females used pharmaceutical drugs (N=806, 65.6%) more than nonpharmaceutical drugs (N=423, 34.4%).
 - Males used nonpharmaceutical drugs (N=1,189, 54.1%) more than pharmaceutical drugs (1,008, 45.9%) (Figure 1).

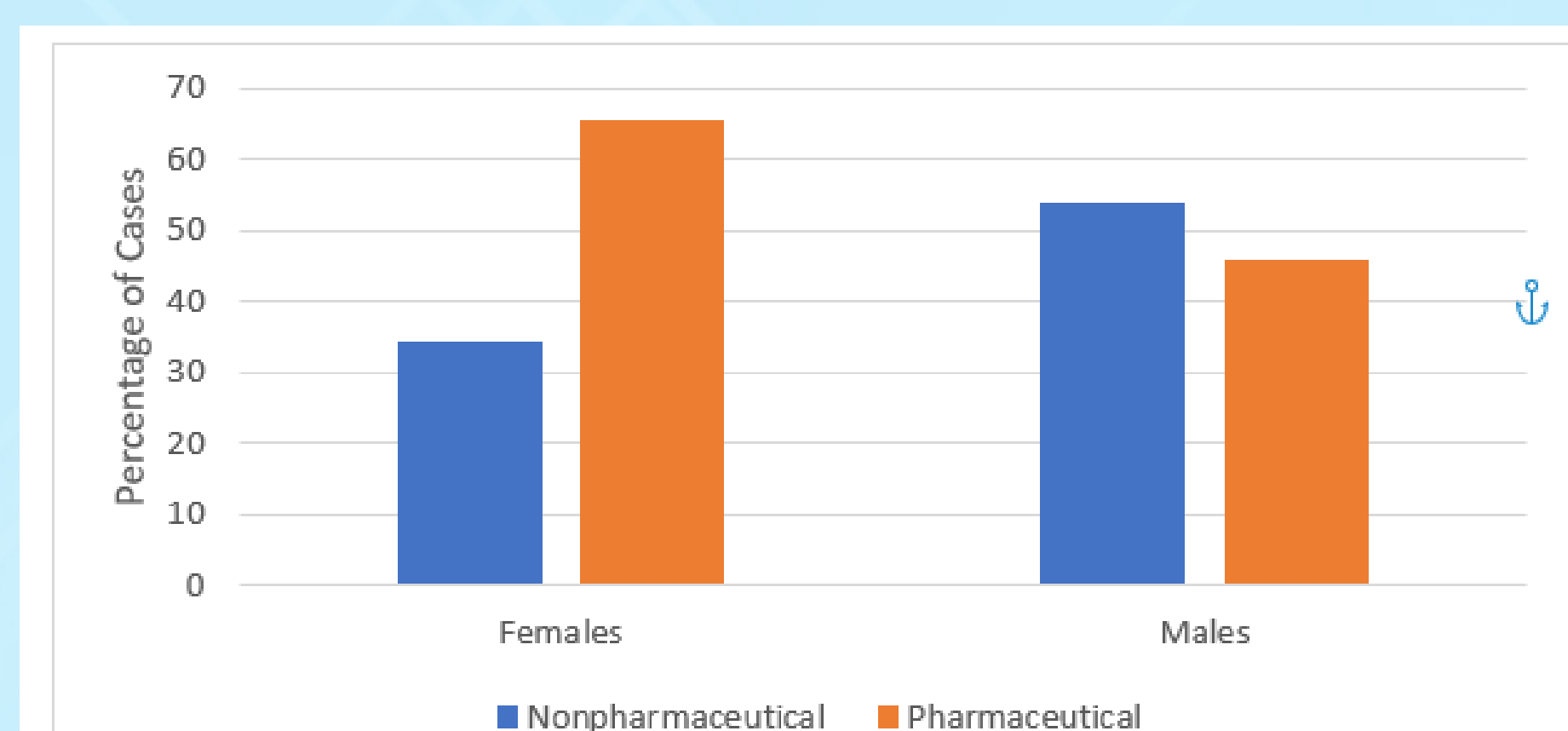


Figure 1. Pharmaceutical Vs. Nonpharmaceutical Drug Use Among Males and Females

- Agent of Exposure
 - Analgesics were used more by females (N=215, 18.2%) than males (N=137, 6.6%).
 - Sedative hypnotics were used more by females (N=165, 14%) than males (N=160, 7.8%).
 - Psychoactive agents were used more by males (N=325, 15.8%) than females (N=67, 5.7%).
 - Sympathomimetics were used more by males (N=381, 18.5%) than females (N=151, 12.8%) (Figure 2).

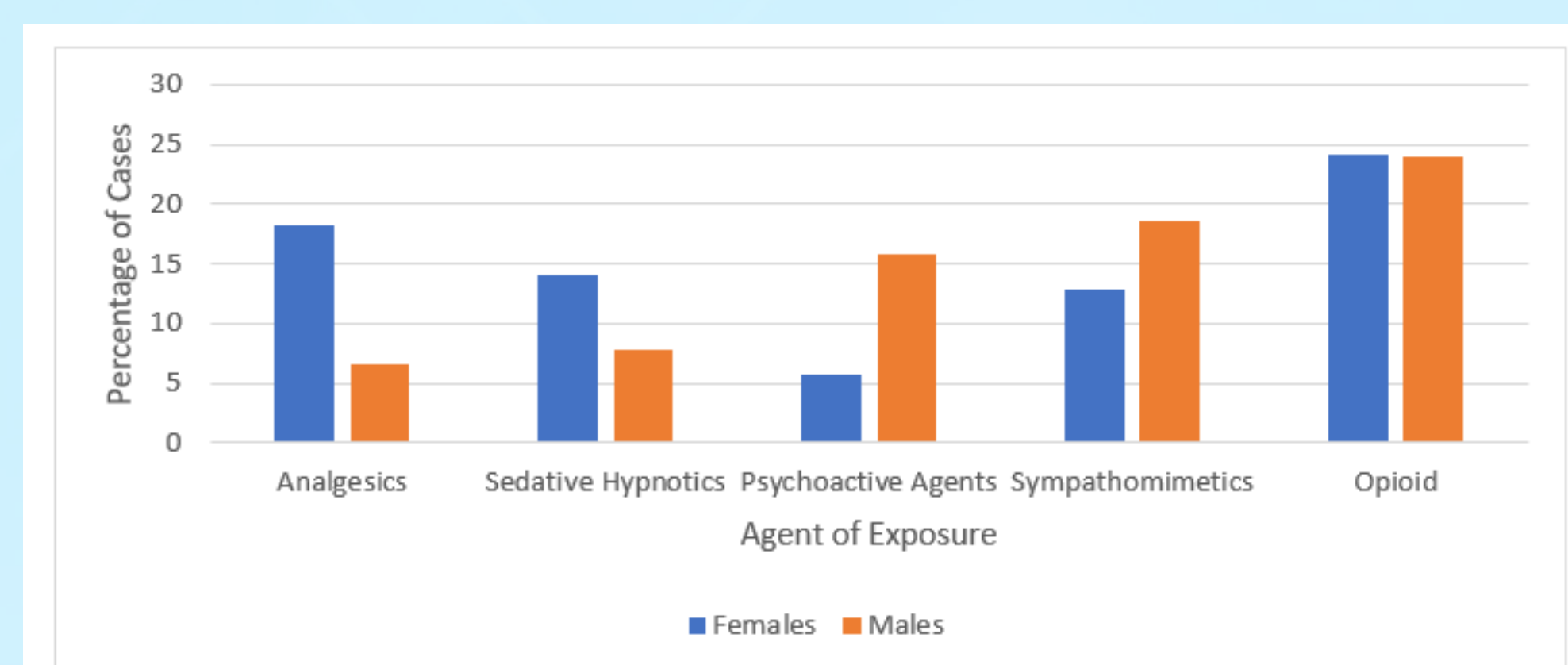


Figure 2. Agent of Exposure Among Males and Females

- Route of Administration
 - The majority of both male and female participants (57.9%), utilized an oral route of administration.
 - More males utilized inhalation (16.5%) than females (6.8%) (Figure 3).

SELECT

- The data described can be utilized to individualize prevention and treatment programs, therefore improving the overall **quality** of patient care.
- This is directly related to the quality of care concept we have learned: *"The right care for the right patient at the right time."*
- **Values-based patient-centered care** focusses on the fact that treatment should be individualized to fit a patients' culture, lifestyle, and beliefs.
- Our project showed that treatment and prevention should also be individualized based on a patient's sex.
- Overall, our project demonstrated the importance of **values-based patient-centered care** by serving as a reminder that not every patient can be treated the same, and that we must continue to search for the best way to approach each patient as an individual.

Conclusions

- There were sex-specific differences among patients in terms of agent of exposure and route of administration. The data obtained in this study can be utilized to direct future sex-specific harmful use screening techniques and treatments, as well as guide future research on the subject.
- The information gleaned about these differences can shed light on what types of **health system** and **shared decision making (values-based patient-centered care)** approaches could be developed to promote equitable care.

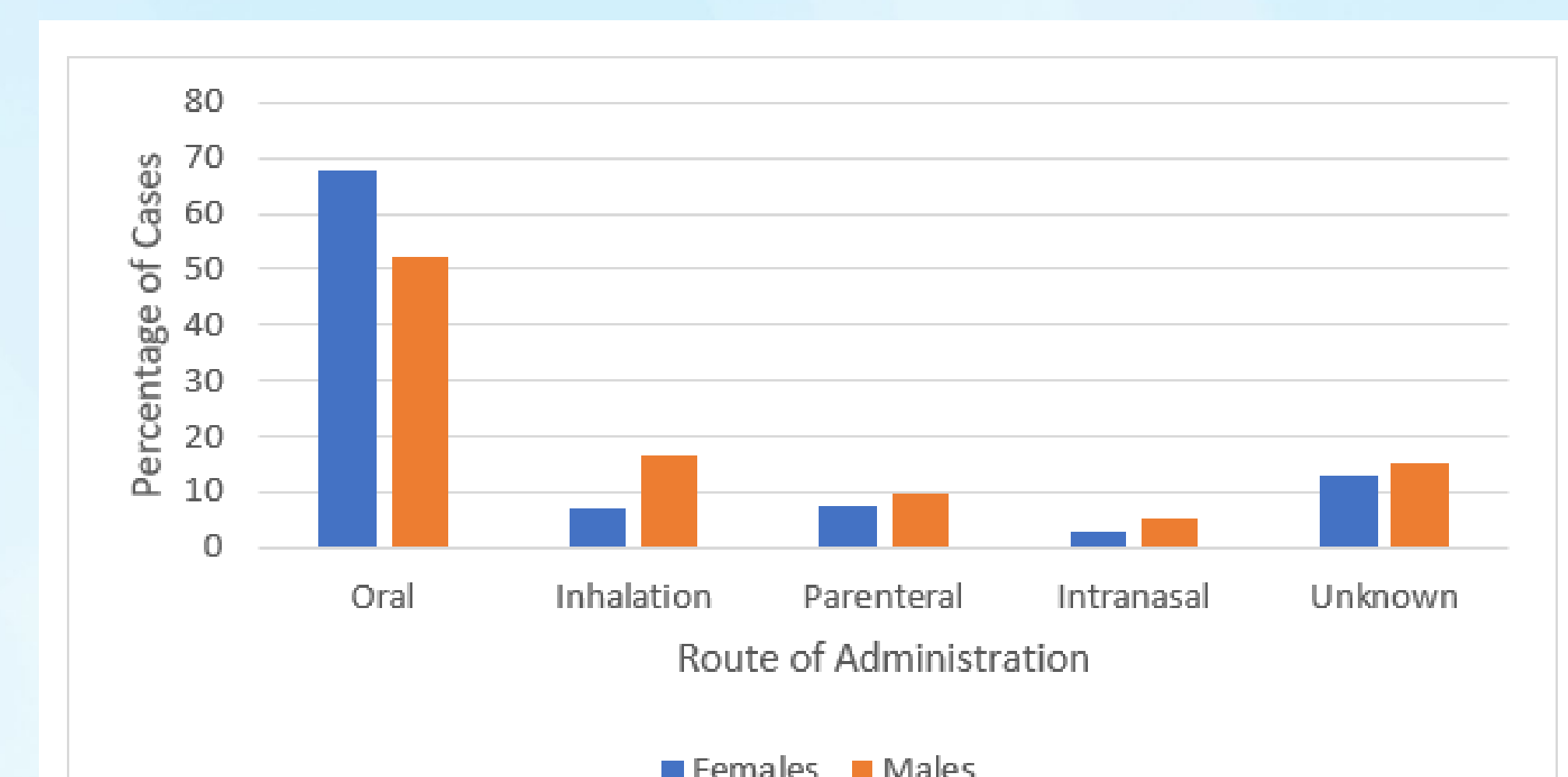


Figure 3. Route of Administration Among Males and Females

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