

Exploring Associations Between Medical Conditions and Accidental Overdose Risk in Opioid Prescriptions: A Comprehensive Literature Review

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Background

- The use of opioids for pain management is a normalized practice in healthcare.
- Concerns regarding the risk of accidental opioid overdose have gathered significant attention.
- Certain medical conditions and medications can exacerbate this risk, leading to adverse outcomes for patients.
- Understanding associations is crucial for healthcare professionals to ensure safe and effective opioid prescribing practices.

Methods

- Literature was reviewed to investigate the relationships between specific medical conditions and medications for the risk of accidental overdose with opioid prescriptions.
- Data sources included peer-reviewed journals, medical databases, and relevant guidelines. Studies examining the mechanisms of risk and strength of association were prioritized. The strength of the association was determined by the number of studies and their findings.
- Each risk factor's association for overdose was quantified and weighted. Scores were assigned for weak associations (0.33), moderate associations (0.66), and strong associations (0.99) to facilitate comparison and analysis.

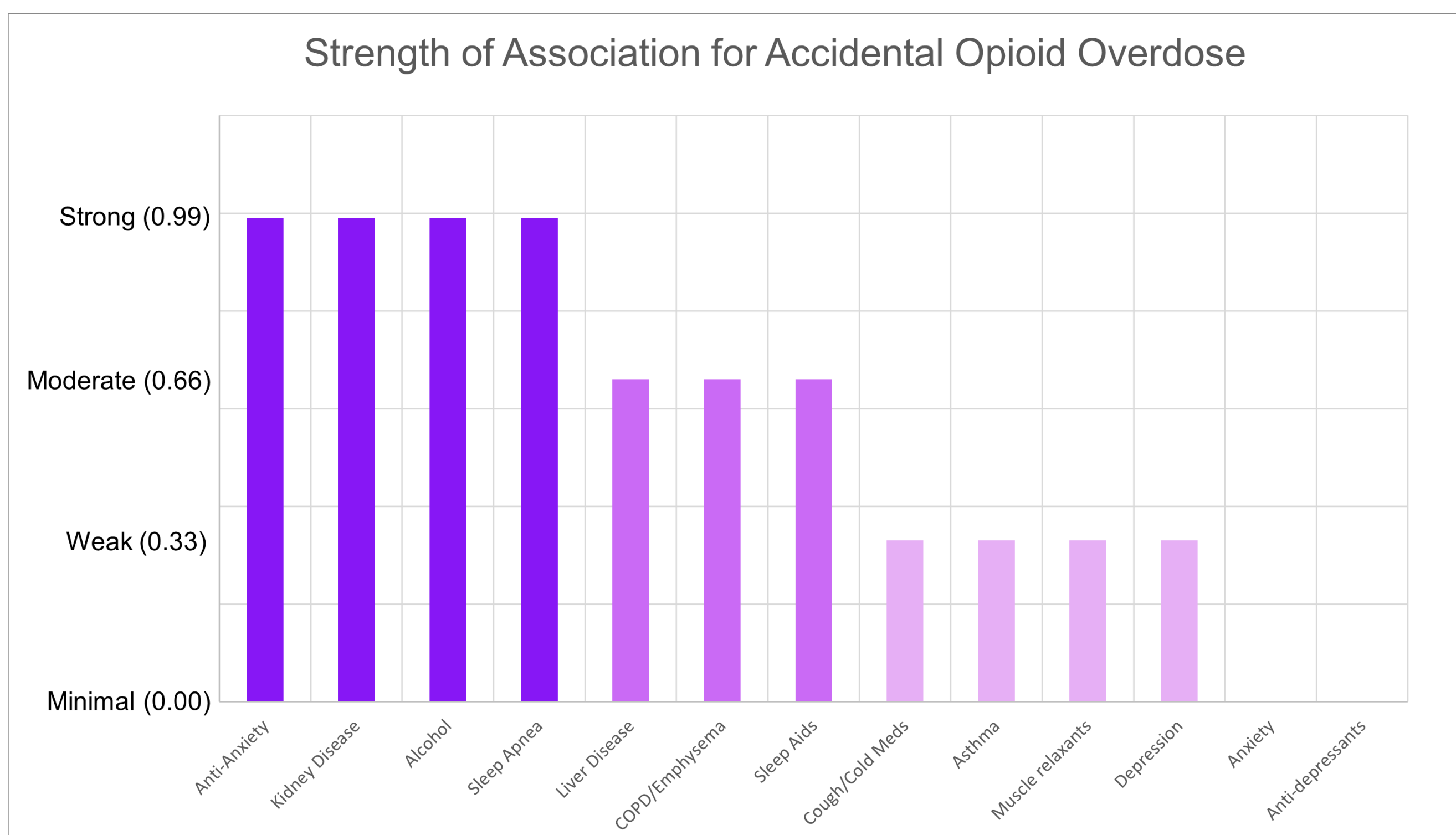


Figure 1: Strength of Association for Accidental Overdose

Results

- Strong associations (0.99) for accidental overdose were found in anti-anxiety medications, sleep apnea, kidney disease, and alcohol
- Minimal associations (0.00) for accidental overdose were found in anxiety and anti-depressant medications.
- Table 1 shows the associations and strength of evidence for various risk factors related to accidental overdose risk.

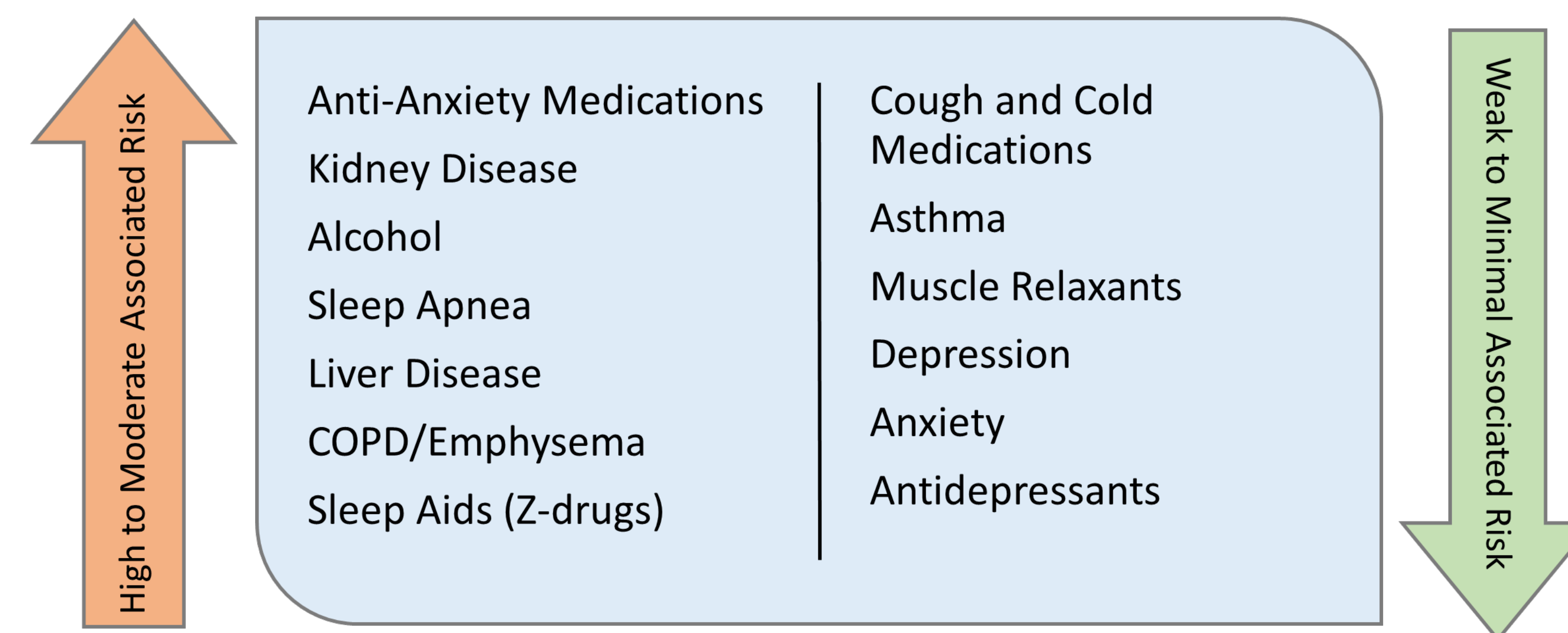


Figure 2: Accidental Overdose Associations

Table 1: Strength of Association for Accidental Opioid Overdose

Risk Factor	Strength of Association (Risk Ratios + Strength of Evidence)	Ratios (HR/OR/RR (95% CI))	Strength of Evidence (study design + # of studies)
Anti-Anxiety (benzos)	Strong	HR 2.05 Adj. OR 2.14	Strong
Kidney Disease	Strong	HR 1.40 (1.07-1.85)	Strong
Sleep Apnea	Strong	OR 1.49 (1.0-1.8)	Moderate
Alcohol	Strong	RR 3.6	Moderate
COPD/Emphysema	Moderate	HR 1.57 (1.13-2.15) OR 1.50 (1.2-1.9)	Strong
Liver Disease	Moderate	HR 1.6 (1.21-2.10) OR 2.7 (1.1-6.7)	Strong
Sleep aids (z-drugs)	Moderate	HR 2.29	Moderate
Gabapentinoids	Moderate	Adj. OR 1.46	Strong
Muscle Relaxants	Weak	HRs 0.91 > 14 days, 1.37 15-60 days, 1.80 > 60 days	Moderate
Asthma	Weak	N/A	Weak
Depression	Weak	Untreated = adj. OR 1.18 (1.02-1.37)	Weak
Cough/Cold	Weak	N/A: 14.3% of 92,000 ODs	Weak
Antidepressants	Minimal	OR of 0.79	Weak
Anxiety	Minimal	N/A	None

Discussion

- The findings demonstrate associations for common medical conditions/medications and risks of accidental opioid overdose.
- No multiplicative for increased risk of accidental overdose with multiple risk factors was found in literature.
- Pain management is complex, particularly for patients with diverse medical histories and medication regimens.
- Healthcare professionals must carefully consider these associations to mitigate the risk of accidental overdose and prioritize patient safety.
- Figure 3 shows the approach model for accidental overdose risk.

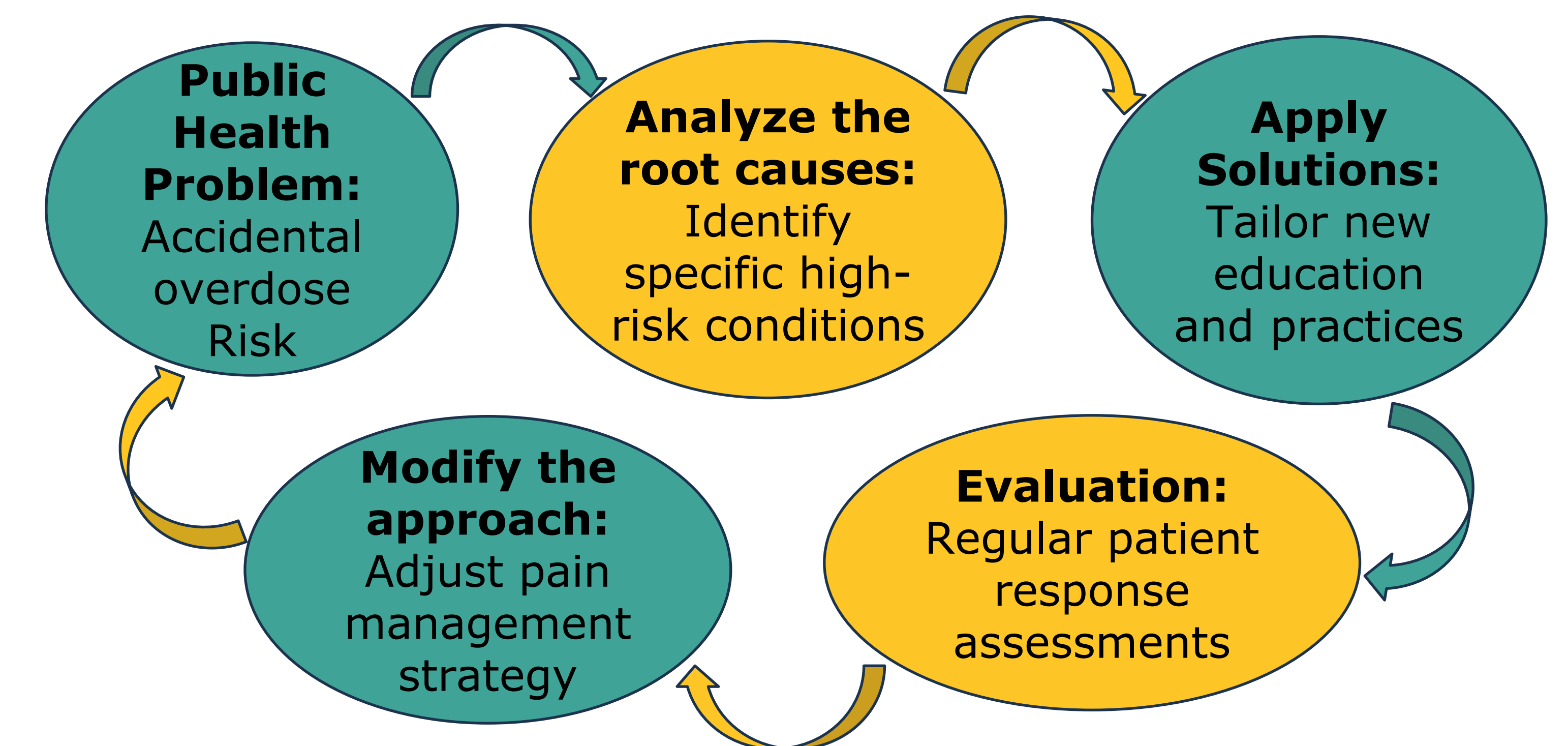


Figure 3: Accidental opioid overdose risk approach model

Conclusion

- By recognizing the factors that contribute to accidental overdose risk, healthcare professionals can make informed decisions to improve patient safety. Further research is needed to enhance the understanding of these complex relationships and develop targeted interventions to mitigate the risk of opioid-related overdoses.

References

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