

Risky Business on TikTok: Qualitative Analysis of Hazardous Substance and Alcohol Challenges Among Youth

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BACKGROUND AND OBJECTIVES

- TikTok's rapid growth has been accompanied by an increase in viral challenges, some of which encourage adolescents and young adults to engage in hazardous behaviors such as ingesting toxic substances, misusing over-the-counter medications, and consuming alcohol in dangerous ways.
- This study systematically characterizes these TikTok challenges, evaluates their medical risks, and explores how such content can inform clinical education and public health prevention efforts.

METHODS

- This qualitative content analysis examined TikTok videos depicting harmful or potentially harmful challenges, identified through TikTok search hashtags and supplemental media, regulatory, and toxicology sources.
- Eligible videos (with audio, non-duplicate, and visually or verbally representing a challenge) were transcribed verbatim, anonymized, and coded by two independent researchers.
- Standardized abstraction forms were used to capture challenge characteristics, routes of harm, substances involved, documented complications, demographic targeting, dissemination patterns, and associated warnings or advisories.
- Safety suggestions or health information within videos were classified as misinformation or disinformation based on consensus ratings from three board-certified emergency physicians.
- Results were summarized using descriptive statistics, frequency tables, and Cohen's kappa coefficients to assess interrater reliability.

RESULTS

- Forty-five TikTok videos met inclusion criteria; 38 (84%) represented highly prevalent youth challenges (>30,000 views).
- Most depicted participants were adolescents or young adults; 34% were identifiable as teens or preteens, and 53% were male.
- Challenges were disseminated primarily via the For You Page recommendation algorithm, shared audiovisual templates, and hashtag-based "copy-and-remix" practices, with reach amplified by high completion rates and watch time, followed by rapid sharing, commenting, and saving.
- All identified challenges were judged medically dangerous by clinical reviewers and were associated with potential outcomes including burns, poisoning, seizures, arrhythmias, coma, and death, consistent with case clusters reported by pediatric burn centers and emergency departments (Table 1).
- Platform administrators subsequently banned 19 (42%) challenges—such as the Tide Pod, Dusting/Chroming, Benadryl, and Nutmeg challenges—following multiple deaths and poisonings; however, all banned challenges continued to circulate through user re-uploads.
- TikTok has not issued challenge-specific harm reduction resources, warnings, or educational campaigns that are focused on any dangerous TikTok challenge.
- Medical misinformation or disinformation was identified in association with every challenge analyzed (Table 2).
- Interrater reliability was substantial (Kappa = 0.83).

Table 1. TikTok Challenges Associated with Documented Fatalities

- Benadryl challenge (high-dose diphenhydramine ingestion).
- Tide Pod challenge (laundry detergent pod ingestion).
- Dusting / chroming challenge (inhaling aerosol propellants/solvents)
- "Player Knockout" drinking challenges
- "Dripping" refers to a way of using e-cigarettes where users place drops of e-liquid directly onto the exposed heating coil of an atomizer
- Alcohol enemas (butt chugging)
- The Galaxy Gas Challenge (nitrous oxide)
- The Tranq Challenge (clonazepam)
- The Nutmeg Challenge
- Cannabis/alcohol infusion challenge
- Ingesting alcohol-based hand sanitizers
- Purple Drank (Codeine and Promethazine cough syrup)
- Synthetic Cathinones (bath salts)

*Observational studies show that hazardous/binge drinking and drug use among young adults—often in party and social-media-mediated contexts—is strongly associated with emergency visits and hospitalizations, even though charts rarely document "TikTok" as the explicit cause

Table 2. Medical Misinformation or Disinformation Identified in Association with TikTok Challenges

- Claims that ingesting or inhaling household products is safe, funny, or consequence-free when done "just once" or "in small amounts."
- Suggestions that misusing medications is a harmless way to get high, sleep better, or self-treat symptoms without medical supervision.
- Explicit or implied assurances that serious complications are unlikely or exaggerated despite being well-documented in clinical reports.
- Framing banned or medically dangerous challenges as "safe if you do it right," often omitting any accurate dosing, toxicity, or emergency warning information.
- Portraying severe symptoms (seizures, vomiting, collapse) as exaggerated, comedic, or easily reversible at home.
- Promoting unproven "detox" or "antidote" hacks (water, milk, home remedies) as sufficient after ingesting toxic substances.
- Implying that young age or "good health" makes participants immune to serious toxicity or long-term harm.
- Reframing prior deaths, poisonings, or burn cases as rare flukes rather than expected risks of the challenge.
- Suggesting that platform bans are overreactions, not responses to real medical events and fatalities.

CONCLUSIONS

- Hazardous TikTok challenges are widely disseminated, highly engaging, and disproportionately involve adolescents and young adults, driving behaviors with substantial risk of severe toxicity and injury.
- The persistence of banned challenges through re-uploads, along with pervasive misinformation and disinformation, highlights critical gaps in platform moderation and health communication.
- Systematic characterization of these trends can inform emergency medicine and toxicology education, guide anticipatory counseling for youth and families, and support development of timely, platform-specific public health interventions and regulatory approaches.

