# Addiction Research

## Jane Crow: Examining Drug Overdose Deaths among Celebrity Pornography Actresses

## Robert G. Smith DPM., MSc., RPh. SrFNAP\*

STOP - Studying Opioid Harm, 501(3)c Non-Profit, 723 Lucerne Circle, Ormond Beach, Florida, USA.

#### \*Correspondence:

Robert Ĝ. Smith, STOP - Studying Opioid Harm, 501(3)c Non-Profit, 723 Lucerne Circle, Ormond Beach, Florida, USA.

Received: 05 Oct 2024; Accepted: 12 Nov 2024; Published: 25 Nov 2024

Citation: Smith RG. Jane Crow: Examining Drug Overdose Deaths among Celebrity Pornography Actresses. Addict Res. 2024; 8(2): 1-8.

## ABSTRACT

The tragic drug or alcohol-related death of a renowned celebrity or athlete often leaves many unanswered questions. The term "Jane Crow" reflects the author's belief that female pornography actresses are marginalized within the industry and society in terms of disorder and drug overdose deaths, which could be prevented with proper screening and intervention. The main objective of this review is to demonstrate, through an analysis of data from audio, electronic, and written sources, presented both narratively and graphically that female pornography actresses are at risk of substance use disorder and opioid overdose deaths. A secondary objective is to provide supporting biological and clinical data as a foundation for understanding why female adult actresses are at risk for substance use disorder for substance use disorder and to mitigate the harm of illicit and legal drugs. Medical and psychological professionals should lead the charge in mitigating identification and treatment programs for substance use disorder within the pornography industry to assist in preventing drug overdose deaths among its participants.

#### Keywords

Jane Crow, Drug Overdose Deaths, Celebrity Pornography Actresses, Porn Industry, Substance Abuse in Pornography.

#### Introduction

The tragic drug or alcohol-related death of a renowned celebrity or athlete often leaves many unanswered questions. While many such deaths may result from the misuse of illegal substances, these drugs are not always illicit, and an overdose may not always be intentional. Drug-related fatalities can also occur from mixing prescribed medications with other drugs (legal or illegal), alcohol, over-the-counter medications, or even herbal supplements. Drugdrug interactions may also contribute to these deaths. In 2015, the Substance Abuse and Mental Health Services Administration released a report indicating higher rates of substance abuse within the entertainment industry [1,2]. The rate of drug-related celebrity deaths has nearly doubled in the 21st century, with a significant increase in prescription opioid involvement. More than half of the celebrities included in this study were from the entertainment study found, that among all actors who died from drug-related causes, 13.7% were from the pornographic film industry. For this reason, this subset of the entertainment industry was examined [1,3]. Griffith et al. ground breaking findings supports previous studies that also identified an increased likelihood of drug abuse among male and female porn actors [3,4]. Because of this increase in drug abuse in this subset of the entertainment industry beckons further analysis, according to Griffith et al. there is very limited research on women who perform in adult films [3,4]. Substance abuse results from a combination of risk factors that increase the probability of an individual developing a disorder. The most significant risk factor is a family history of substance abuse, which accounts for about half of one's predisposition to addiction [5]. Lifestyle factors such as significant stress (including stage fright and pressures of show business), peer pressure, competition, and exposure to alcohol or drugs are commonplace within the entertainment industry and may help explain the high rate of substance abuse among celebrities [5,6].

industry, with actors representing 23.2% [1]. Furthermore, the

Jim Crow laws were a collection of state and local statutes that legalized racial segregation to marginalize African Americans. The term "Jane Crow" reflects the author's belief that female pornography actresses are marginalized within the industry and society in terms of disorder and drug overdose deaths, which could be prevented with proper screening and intervention. The main objective of this review is to demonstrate, through an analysis of data from audio, electronic, and written sources, presented both narratively and graphically that female pornography actresses are at risk of substance use disorder and opioid overdose deaths. A secondary objective is to provide supporting biological and clinical data as a foundation for understanding why female adult actresses are at risk for substance use disorder and potential opioid overdose deaths. The final objective is to discuss the opioid risk tool and other tools and interventions to screen for substance use disorder and to mitigate the harm of illicit and legal drugs.

### **Methods**

McKee's thesis on pornography as a creative industry aligns with the assertions of **Zillmann**, **Voss**, **Simonton**, and **Smith** [7–10]. Both academic research and journalistic writing often adopt an **exceptionalist perspective** on pornography, portraying it as fundamentally different from other cultural forms. **Zillmann** highlights that pornography is consistently labeled as harmful [8]. Similarly, **Simonton** and **Smith** argue that, while all cultural products are created within capitalist systems, pornography is uniquely accused of exploiting its workers [9]. **Voss** notes that business researchers have largely avoided studying pornography as they would other industries, resulting in a lack of comparative data [10]. McKee supports Voss's claim, suggesting this avoidance stems from a fear that treating pornography as a "normal business" might inadvertently **legitimize** it [7–10].

For this study, we adopted McKee's perspective, treating the pornography industry as a legitimate business. This approach allowed us to analyze related research, data, and narratives without preconceived biases, validating the industry as part of the broader creative economy.

### PRISMA

This investigation was conducted in accordance with the **Preferred Reporting Items for Systematic Reviews and Meta-Analyses** (**PRISMA**) framework, adapted for a scoping review. The PRISMA framework provided a structured checklist to identify and evaluate relevant citations for this study. A comprehensive search strategy was implemented using **Boolean logic** across five electronic databases and physical documents, covering the period from **1990 to 2024**. Key search terms included "pornography," "sexual," "actress," "drug," and "overdose." The databases searched were **PubMed**, **MEDLINE**, **National Academies Search**, **Cochrane**, and **TRIP USA** (clinical search engine). The study adhered to the following inclusion criteria:

- 1. Data must originate from **primary sources.**
- 2. Participants must have been compensated for their work as **actresses in pornographic films** and engaged in sexual activity in those films.
- 3. Data must include information on the participants' profiles.

A total of **312 studies** were initially identified. After removing **7 duplicate records**, **38.4%** (**n=120**) were excluded as irrelevant based on title screening. This left **185 records** (**59.2%**) for abstract and full-text screening. Of these, **33.6%** (**n=105**) were excluded for reasons such as irrelevance to the review's focus. The remaining **80 records** were assessed for retrieval. Following detailed analysis, **37 reports** were excluded for methodological or content-related reasons.

The **43 reports** that met initial eligibility criteria underwent further scrutiny, resulting in the exclusion of **21 studies** for the following reasons:

- Data not relevant to the review (**n=6**)
- Low-quality synthesis of results or analysis methods (**n=8**)
- Inadequate study characteristics or statistical analysis (n=4)

Ultimately, **25 studies** were included in the final review. The process was supplemented by manual reviews of citations and bibliographies to ensure comprehensive coverage. This review evaluated studies assessing the clinical identification of opioid overdose-related deaths among pornography actresses, focusing on mitigating strategies, best practices, and considerations for identifying at-risk populations for **substance use disorder** and **opioid overdose-related deaths.** Figure 1 summarizes the PRISMA flow of the study selection process.



**Figure 1:** Literature Search for an Appraisal of Celebrity Pornography Actresses Drug Overdose Deaths.

### **Building of Porn Star Death Tables**

Upon searching the Google database, the following sentences appeared: "When discussing 'pornography, sexual actress, drug, and overdose, it unfortunately refers to a concerning reality where some adult film performers have tragically died from drug overdoses, highlighting the potential dangers of substance abuse within the industry, particularly due to the high-pressure and often exploitative nature of the work." Four electronic sites emerged during a Google search that were used to compile data for the Porn Star Death Table (Table 1). To ensure accuracy, the websites were compared to avoid duplication of names or means of death. This search also allowed for the collection of data from free press websites documenting the deaths of porn actors and actors' deaths to include: News.com.au, Toronto Sun, New York Times, New York Post, and Rolling Stone from 2015-2024. A second table has been created to present the substances used in the overdose death of the pornographic actors (Table 2).

#### Table 1:

		Number and Descriptions of Porn Actors and Actresses Deaths* Sex		
Descriptions of Mechanism of Death	Number			
AIDs and Complications	120			
Accidental	80			
Medical Complications	716			
Murdered	85			
Suicide	121			
Overdose	101	Female	58	
		Male	43	
Unsure	442			
Totals	1665			

#### \*Data complied using:

https://www.Iafd.com/deadporn Dead Pornstar list

https://www.bing.com/videos/search?q=porn+stars+death&&view=detail&mid=2CF680DFFAFF82E8DF152CF680DF

FAFF82E8DF15&&mmscn=vidadt&FORM=VRDGAR Death Porn Star memorial June 28, 2014

https://www.redbled.com/dead-pornstars/ Top 30+: A List of Famous Dead Pornstars (2016 – 2024)

https://www.babepedia.com/blog/famous-dead-pornstars-pornstars-that-left-us-between-2011-and-2015/

#### Table 2:

		Number of Identified	of Identified Substances Caused					
		Overdose Deaths in Porn Star's I						
Illicit			Prescriptions					
	Methamphetamine	6	Alprazolam	1				
	Cocaine	2	Carisoprodol	1				
	Heroin	15	Chloral Hydrate	1				
	Fentanyl	7	Ketamine	2				
Opioids	Opioids	5 Percocet		1				
			Psychotroptics	2				
			Steroids	1				
			Unspecified	6				
Total		35	Total	15				
Over-the-								
Counter								
	Acetaminophen*	2						
	Alcohol*	9						
Total		11						

\*Acetaminophen identified as a sole substance in one suicide and a multiple substance in another suicide

\*\*Alcohol was identified as a contributing factor in Medical Complication and Suicide Categories

## **Opioid Risk Tool**

The Opioid Risk Tool (ORT) measures the following risk factors associated with substance abuse as identified in scientific literature: personal and family history of substance abuse; age; history of preadolescent sexual abuse; and certain psychological disorders. Patients received scores of 0–3 (low risk), 4–7 (moderate risk), or  $\geq 8$  (high risk), indicating the probability of displaying opioid-related aberrant behaviors (Figure 2). The secondary aim of this investigation and narrative is to determine whether the ORT can be used post-hoc to determine if female porn actresses indeed had risk factors for drug over dose (Table 3).

#### Table 3:

		N=10	1 Porn S	tar Dea	aths				
			Records Reviewed				ORT Risk Score		
			Female	Male	Female		Female	Males	
		Alcohol							
Family History Substance Abu	of of	Illegal Drugs	4		2		4 x 2		
		Prescription Drugs	1		4		1 x 4		
			Female	Male	Female	Male	Female	Males	
Personal History of Substance Abuse	Alcohol	6	0	3	3	6 x 3			
	Illegal Drugs	21	10	4	4	21 x 4	10 x 4		
	ise	Prescription Drugs	11	3	5	5	11 x 5	3 x 5	
		Two of the above	2	2			1x7, 1x 9	2 x 7	
Age			Female	Male	Female	Male	Female	Male	
16 -45 years of	fage		32	19	1	1	32 x 1	19 x 1	
Over 45 years	old		2	3			2 x 0	3 x 0	
History of Preadolescent Sexual Abuse		Female	Male	Female		Female	Male		
		1	2			1 x 2			
Psychological Disease		Female	Male	Female	Male	Female	Male		
		9	2	2	2	9 x 2	2 x 2		
ORT Total Score Risk Category		Female	Male						
For Evaluation	Total	ls							
Low Risk	) 3		0	0					
Moderate 4	47		9	10					
High Risk 8	Rorm	reater	25	12					

## Results

Four electronic data collection sites were used to determine the number and descriptions of pornography actor and actress deaths: https://www.lafd.com/deadporn, https://www.bing.com/videos/search?q=porn+stars+death&&view=detail&mid=2CF680DFFAFF82E8DF152CF680DFFAFF82E8DF15&&mmscn=vi-dadt&FORM=VRDGAR, https://www.redbled.com/dead-porn-stars/, and https://www.babepedia.com/blog/famous-dead-porn-stars-pornstars-that-left-us-between-2011-and-2015/ from 1980 to

Date \_

Patient Name

	,	Mark each box that applies		ach applies	Item Score If Female	Item Score If Male
1. Family History of Substance Abuse	Alcohol	[		]	1	3
	Prescription Drugs	ľ		1	2	3
				,		
2. Personal History of Substance Abuse	Alcohol	[		1	3	3
•	Illegal Drugs	i		i	4	4
	Prescription Drugs	ì		i	5	5
				-		
3. Age (Mark box if 16 - 45)		ſ		1	1	1
				1		
4. History of Preadolescent Sexual Abuse				1	3	0
5. Psychological Disease	Attention Deficit	[		]	2	2
	Disorder,					
	Obsessive Compulsi	ive				
	Disorder,					
	Bipolar,					
	Jeinzopin eina					
	Depression	[		]	1	1
			T	OTAL		
			Total Score Risk Category			
			Low Risk 0 – 3 Moderate Risk 4 – 7			
		High Risk <u>&gt;</u> 8				
Defense Webster D. Dediction about the basis	an in aminid has shed an birar	to De	1:		lidetion of the o	minist wish to al

#### OPIOID RISK TOOL

Reference: Webster LR. Predicting aberrant behaviors in opioid-treated patients: Preliminary validation of the opioid risk tool. Pain Medicine, 2005,6(6):432-442. Used with permission.

#### Figure 2

2024. The electronic database "dead porn stars" (https://www.Iafd. com/deadporn was the most comprehensive source for the number and descriptions of deaths. The other three electronic databases were used adjunctively to verify and compile a more comprehensive list, allowing for a greater understanding of the retrieved data (Table 1, Table 2, Table 3) [12-14]. After accounting for duplication and misinformation, a total of 1,665 deaths were reported. Seven descriptive categories were identified: AIDS and complications (n=120, 7.2%), accidental (n=80, 4.8%), medical complications (n=716, 43%), murder (n=85, 5.1%), suicide (n=121, 7.3%), overdose (n=101, 6.1%), and unsure (n=442, 26.5%). The overdose category was further investigated to determine the demographics of sex and age for this investigation. The overdose category included 58 female and 43 male death reports, with 56 females under 45 years of age at the time of their deaths, while males in the same age group accounted for 35 reported deaths. These publicly available data bases allowed for obtaining complete accounting of the risks and causes of overdose deaths for 56 adult performers out of the 1010verdose deaths. Medical complications, unsure, suicide, and AIDS and complications accounted as the top four descriptors of death. Upon examining the suicide category, seven reported deaths were described as intentional overdoses, so they were added to the overdose category and removed from the suicide category.

The substances identified as causing overdose deaths among

pornography actors and actresses are described in Table 2. The table categorizes three types: illicit substances, prescription substances (both legend and controlled substances, schedules II through IV), and over-the-counter products, including acetaminophen and alcohol. Methamphetamine, cocaine, heroin, fentanyl, and opioids are identified in the illicit category, accounting for thirtyfive causes of overdose deaths. Alprazolam, Carisoprodol, Chloral Hydrate, Ketamine, Percocet®, and various psychotropic agents are identified in the prescription category, accounting for seven causes. Lastly, the over-the-counter category accounts for 11 causes of overdose deaths. Alcohol was identified as a contributing factor in the medical complication category of death. The foremost category responsible for overdose deaths among pornography actors and actresses was the illicit substance category, accounting for 67.3 percent of causes. When examining the illicit category, heroin (N=15), fentanyl (N=7), and opioids (N=5) added total of N=27 (51.9%) causes of overdose deaths.

The **Opioid Risk Tool (ORT)** employs five descriptive questions to classify a patient's risk of aberrant behaviors related to opioid misuse, abuse, overdose, and possible opioid-related deaths into low, moderate, or high-risk categories. A dataset of **101 porn star deaths** was reviewed; however, only **56 records (55.4%)** were available for analysis. Using this subset, Table 3 was constructed to apply the five key ORT questions.

- 1. The first question, **"family history of substance abuse,"** was assessed using narrative reports from family members for the 56 cases. Among the records, five female overdose deaths were linked to problematic behaviors: one involving prescription misuse or abuse (assigned an integer of 4) and four involving illicit drug use (each assigned an integer of 2).
- 2. The second question, "**personal history of substance abuse**," revealed that the majority of individuals—21 females and 10 males—abused illegal drugs, each assigned an integer of **4**. Additionally, six females were assigned an integer of **3**. Regarding prescription drug misuse or abuse, 11 females and 3 males were identified, each receiving an integer of **5**. Two males and one female who abused both alcohol and illegal drugs were assigned an integer of **7**, while one female who misused prescription drugs alongside illegal drugs was assigned an integer of **9**.
- 3. The third question, "**age**," was evaluated for all 101 overdose deaths. Of the 56 analyzed records, 32 females and 19 males aged **16-45 years** were each assigned an integer of **1**. In contrast, the remaining 2 females and 3 males over the age of **45** were assigned an integer of **0**.
- 4. The fourth question, **"history of preadolescent sexual abuse,"** applied to the 56 records, revealed that only one female had such a history. This record was assigned an integer of **2**.
- 5. The fifth and final question focused on the "**presence of psychological disorders.**" Among the 56 cases, psychological disorders were noted in 9 females and 2 males, with each record receiving an integer of 2.

These findings, derived from the descriptive accounts available, provided a detailed application of the ORT to assess risk factors within this population.

Once each of the 56 records was scored using the opioid risk questions, a total risk category score was tabulated for each record. Each record was then assigned to one of the three ORT total score categories: Low Risk, Moderate Risk, and High Risk, as reflected in Table 3. None of the 56 overdose pornography actors and actresses were assigned to the Low-Risk (0-3) category. A total of 19 records (33.9%), nine females and ten males, were assigned to the Moderate Risk (4-7) category. Lastly, 37 records (66.1%), twenty-five females and twelve males, were assigned to the High Risk (8 or greater) category.

Comparing the totals from Table 3 with the data reported in Table 2, the numbers for alcohol, illicit drugs, and prescription substances are consistent, excluding one account of acetaminophen as an intentional overdose substance. Acetaminophen was identified as the sole over-the-counter substance in one record, categorized as an intentional overdose and found in a multiple substance overdose that included illicit substances.

## Discussion

Just et al.'s showed an increase in drug-related celebrity deaths in the 21st century, with a statistically significant rise in prescription opioid involvement. They demonstrated that prescription opioids and heroin were significantly associated with a younger age at death compared to all drug-related celebrity suicides, while other prescription drugs were significantly linked to an older age at death [1]. They identified 220 celebrities who died from drug-related causes with clear indications of the involved substance between 1970 and 2015. Their findings indicated that the average age at death was 38.6 years, with 75% males [1].

Zara et al.'s descriptive statistics showed that males comprised 62.9% of fatal overdoses for non-celebrities and 73.5% for celebrities, with musicians (24.3%), athletes (23.6%), and actors (17.6%) being the most likely to overdose among celebrity professions. The exceptions were any opioids and benzodiazepines, for which celebrities experienced fatal overdoses at a significantly higher rate. The present investigation revealed that opioid substances accounted for N=27 (51.9%) of all illicit substances contributing to recorded overdoses. Further studies have shown that celebrities are more likely to have a shortened life expectancy compared to the general population, with drug overdose being a significant contributor [1,22], followed by factors such as the wide accessibility of drugs and a stressful environment conducive to drug abuse [23,24].

Griffith et al.'s investigation examined the "damaged goods hypothesis," positing that female performers in the adult entertainment industry have higher rates of childhood sexual abuse (CSA), psychological problems, and drug use compared to the average woman. The study compared the self-reports of 177 porn actresses to a matched sample of women based on age, ethnicity, and marital status. Comparisons were conducted on sexual behaviors, attitudes, self-esteem, quality of life, and drug use. Porn actresses were more likely to identify as bisexual, reported having sex at an earlier age, had more sexual partners, were more concerned about contracting a sexually transmitted disease (STD), and expressed greater enjoyment of sex than the matched sample, although there were no differences in the incidence of CSA. However, female adult performers were more likely to have used ten different types of drugs compared to the comparison group. For this reason, pornography female performers were selected to be the focus of this investigation.

Further investigations by Griffith et al. examined the assumed characteristics of individuals in the adult entertainment industry, comparing the self-reports of 105 male and 177 female porn actors to the perceptions of 399 college students regarding childhood sexual abuse (CSA), self-esteem, work and non-work sexual behaviors, and safe sex issues. College students underestimated both female and male porn actors on self-esteem [25], age of first intercourse, lifetime number of partners outside of work, ideal experiences in a romantic partner, concerns regarding STDs, enjoyment of sex, and condom use during a first-time sexual encounter, while overestimating earnings [25]. Additional differences reported among female porn stars indicated that college students underestimated their enjoyment of work, the probability of contracting an STD, and having unprotected sex. Although there were no significant differences in perceived rates of childhood abuse

among porn actors, the incidence of CSA among the porn actor participants fell within the ranges of the general population [3].

Ouellet et al.'s review aimed to synthesize an understanding of the sociodemographic and psychosexual profiles of male and female actors in pornographic films. The study, conducted according to PRISMA principles, revealed that most actors were Caucasian, heterosexual, had at least a high school diploma, and earned an annual salary of \$25,000 [26]. Moreover, results indicated that they experience various difficulties and have needs in many aspects of their personal and professional lives, including a history of trauma, increased risk of contracting STDs, substance abuse, and mental health issues [26]. Money was the primary motivation for actors' decisions to participate in pornographic films [26-28]. These results coupled with those of this present investigation, underscore the importance of developing psychological and substance use disorder identification programs for both prevention and intervention tailored to the realities and responds for pornography adult film stars.

### Pain Perception by Women

Several regional and large-scale epidemiological studies reveal that pain is reported more frequently by women than men [29]. Fillingim et al. found that lower Z-scores [30], representing higher pain sensitivities, showed statistically significant differences (P<0.05) for all pain measures. Mogil and Bailey claim that women suffer chronic pain and disability more frequently than men and are more likely to be prescribed opioids. Furthermore [31], Pieretti et al. assert that women report more severe levels of pain, more frequent episodes of pain, pain in more varied areas of their bodies, and pain of longer duration than men. They attribute these differences to biological factors, specifically the differences in sex hormones on pain perception and the greater prevalence of chronic pain among females [32]. Craft and Smith et al. claim that estradiol and progesterone exhibit complex pronociceptive and anti-nociceptive effects on pain sensitivity, particularly in relation to decreased androgen concentrations and chronic pain [33-36]. Data supports that women are more likely to be prescribed opioid analgesics.

### Sex Differences in Opioid Analgesia

The conceptual differences between sex and gender can be identified using both physical and behavioral sciences. Sex is a biological concept based on characteristics such as genitalia, while gender pertains to personal, societal, and cultural perceptions of sexuality, i.e., masculinity and femininity. Sex and gender differences have been demonstrated in how women respond to and eliminate medications, including opioid analgesics. As previously mentioned, sex hormones can influence pain perception; they can also make women more sensitive than men to the effects of certain drugs, including opioids. The goal of clinical opioid analgesic pharmacology is to optimize the use of opioid analgesics to minimize adverse events and enhance opioid therapeutic effectiveness. Regrettably, significant gaps remain in the inclusion of women in clinical trials. Specific drug pharmacokinetics and pharmacodynamics may differ between men and women [37]. Reviews of the Food and Drug Administration's Adverse Events Reporting System (AERS) suggest that women experience more drug-related adverse events [38], often described as more serious. Physiological differences between males and females have been observed in plasma volume, body mass index, plasma proteins, body fat, cardiac output, liver blood flow, and hepatic enzyme activity, all of which influence the hepatic clearance of drugs. Furthermore, known sex differences exist in all three major renal functions: glomerular filtration, tubular secretion, and tubular reabsorption [39]. Morphine, a phenanthrene, acts as a pure agonist whose principal therapeutic action is analgesia [39]. It binds to and activates mu-1 and mu-2 opioid receptors in the periaqueductal and periventricular gray matter, ventromedulla, and spinal cord to produce analgesia [38]. Morphine has long been considered the gold standard of opioid agents. Several authors have found that morphine is more potent and exhibits a slower onset and offset in women [24,33,40,41]. It has been established that women perceive more pain and require greater dosages of morphine to achieve the same antinociceptive effect as men. This phenomenon is attributed to higher mu-receptor binding in various cortical and subcortical brain regions in women compared to men. Fillingim et al. highlight data collected in a 2009 comprehensive review on sexspecific influences on pain [32,33,38,39], revealing that women appear to be more sensitive to pain and more vulnerable to chronic, widespread, and post-procedural pain conditions [30,38,39]. Finally, Averitt et al. present evidence demonstrating a neural basis implicating sex differences in opioid metabolism and neuroimmune signaling, focusing on the periaqueductal gray as a sexually dimorphic core of descending opioid-induced inhibition [42].

### The ORT Used in Reported Porn Actresses Overdose Deaths

The use of the Opioid Risk Tool in the reported overdose deaths was conceived after reviewing Patel et al.'s 2022 work assessing and describing abuse risk among student pharmacists [43]. Patel et al. aimed to benchmark opioid abuse risk among student pharmacists attending three northeast pharmacy schools using the opioid risk tool (ORT) [20,43]. Collected survey scores from 812 participants were input into an electronic format for analysis. The students' scores were stratified into the three ORT Total Score Risk Categories: Low Risk, Moderate Risk, and High Risk [20,43]. The results and conclusions of this study indicated a potential need for education regarding opioid risk awareness and abuse prevention, serving as a call to action for professional school students and practitioners to understand baseline opioid abuse risk if they require chronic pain therapy. It is acknowledged that the ORT is intended to be answered by a respondent. Yet given the data available for the porn actress deaths the information yield could be applied to their deaths to determine overall opioid overdose risk. While this practice may be considered a limitation it is believed that the data from this present research investigation can serve as a call to action for the pornography industry to understand baseline substance use disorder among its participants to facilitate mitigation.

A final thought on how the ORT was applied to the 56 described accounts of pornography actors and actresses following their overdose deaths may be found in Gove et al.'s narrative. It has long been recognized that an individual's responses in an interview can be influenced by several factors unrelated to the respondent's "honest" assessment of the questions. Three types of response bias have been delineated: the tendency to agree or naysay, the perception of the desirability or undesirability of the trait in question, and the need for social approval. Moreover, the independent variable with the strongest relationship to the response bias variables is age. The ORT used here was grounded in reportable data, thereby avoiding response bias.

#### **Mitigation Strategies and Interventions**

A reflection on the ongoing three waves of the opioid crisis reveals that education, identification, and intervention are the most effective ways to mitigate and prevent opioid overdose deaths. Medical education and mitigation strategies have improved opioid prescription, reduced exposure, prevented illegal use and prescription misuse, and treated opioid use disorder. This medical education and mitigation should extend beyond the confines of physicians' offices, clinics, and hospitals to the entertainment industry, with an emphasis on the pornography sector. Medical and psychological professionals working with the pornography industry should implement identification and treatment programs for substance use disorder to prevent drug overdose deaths. In 1998, Sharon Mitchell, an American sexologist and former pornographic film actress and director, founded the Adult Industry Medical Health Care Foundation (AIM). AIM provided crucial healthcare services to adult film performers, including psychological and behavioral health interventions. Additionally, Mitchell advocated for the rights and safety of adult performers, leading to the establishment of industry standards and protocols. She used her platform to raise awareness about important issues affecting the adult entertainment industry, such as HIV/AIDS prevention and performer rights. Her efforts have contributed to a reduction in preventable diseases through vaccination campaigns, improved access to mental health services, greater awareness of the importance of nutrition and physical activity, and policy changes addressing environmental factors affecting public health. All these contributions can serve as scaffolding to build a network model for screening adult pornography performers for substance use disorder to prevent aberrant opioid misuse and possible opioid overdose deaths. A concretive directive to prevent opioid deaths requires reducing stigma, increasing treatment options, and mass distribution of nasal naloxone, achievable through industry and community-funded medical healthcare stationary and mobile clinic models for screening and treatment of substance use disorder among pornography actors and actresses.

### Conclusion

This study introduced the concept of **"Jane Crow"** and the **damaged goods hypothesis**, which highlights how communities often marginalize and disenfranchise pornography actors and actresses. Clinical data and reports from the free press substantiate that female pornography actresses face heightened risks for **substance use disorder (SUD)** and **opioid overdose deaths**. These risks were analyzed using data from audio, electronic, and written sources, presented through both narrative and graphical formats.

Biological and clinical evidence provided a foundation for understanding why female adult actresses are disproportionately vulnerable to SUD and opioid-related fatalities. Additionally, this study examined the applicability of the **Opioid Risk Tool (ORT)** as a screening mechanism, validating that pornography actresses are indeed at elevated risk for drug overdose.

The findings emphasize the necessity of implementing the ORT and other harm-reduction tools to address the impact of both illicit and legal drugs on adult actors and actresses. Medical and psychological professionals are urged to take a leading role in developing identification, intervention, and treatment programs for SUD within the pornography industry to help prevent drugrelated deaths among its participants.

## References

- 1. Just JM, Bleckwenn M, Schnakenberg R, et al. Drug-related celebrity deaths A cross-sectional study. Subst Abuse Treat Prev Policy. 2016; 11: 40.
- Bush DM, Lipari RN. Substance Use and Substance Use Disorder by Industry. The CBHSQ Report. Rockville MD Substance Abuse and Mental Health Services Administration US. 2015; 1-18.
- Griffith JD, Mitchell S, Hammond B, et al. A comparison of sexual behaviors and attitudes self-esteem quality of life and drug use among pornography actors and a matched sample. International Journal of Sexual Health, 2012; 24: 254–266.
- 4. Griffith JD, Mitchell S, Hart CL, et al. Pornography actresses an assessment of the damaged goods hypothesis. J Sex Res. 2013; 50: 621-632.
- 5. Hamilton PJ, Nestler EJ. Epigenetics and addiction. Curr Opin Neurobiol. 2019; 59: 128-136.
- Vink JM. Genetics of Addiction Future Focus on Gene × Environment Interaction. J Stud Alcohol Drugs. 2016; 77: 684-687.
- McKee A. Pornography as a creative industry challenging the exceptionalist approach to pornography. Porn Studies. 2016; 3: 107-119.
- Zillmann D. Influence of unrestrained access to erotica on adolescents and young adults dispositions toward sexuality. J Adolesc Health. 2000; 27: 41-44.
- 9. Simonton A, Smith C, stark C, et al. Who are women in pornography. Not For Sale feminists resisting prostitution and pornography. 2004; 352-356.
- 10. Voss G. Treating it as a normal business Researching the pornography industry. Sexualities. 2012; 15: 391-410.
- 11. Dead Porn Stars List accessed. 2024. https://www.Iafd.com/ deadporn
- 12. Dead Porn Star Memorial accessed. 2024. https://www.bing. com/videos/search?q=porn+stars+death&&view=detail&mid=2CF680DFFAFF82E8DF152CF680DF-FAFF82E8DF15&&mmscn=vidadt&-FORM=VRDGAR

- 13. Top 30+ A List of Famous Dead Pornstars 2016. 2024. https:// www.redbled.com/dead-pornstars/
- 14. Famous Dead Pornstars Pornstars that left us between 2011 and 2015. 2020 by Gilles accessed. 2024. https://www.babe-pedia.com/blog/famous-dead-pornstars-pornstars-that-left-us-between-2011-and-2015/
- 15. Porn industry reeling after five deaths in only three months News Corp Australia Network 2018 accessed. 2024. https:// www.news.com.au/lifestyle/real-life/news-life/porn-industryreeling-after-five-deaths-in-only-three-months/
- Hunter B. Death in Pornland Starlets who met an early end in smut biz Toronto. 2024. https://torontosun.com/news/world/ death-in-pornland-starlets-who-met-an-early-end-in-smut-biz
- 17. Tumin R. Jesse Jane, Pornographic Film Star Dies at 43 New York Times. 2024. https://www.nytimes.com/2024/01/25/ arts/television/jesse-jane-dead.html
- Cost B. Porn star Logan Long dead at 34 after health battle New York Post. 2024. https://nypost.com/2022/05/20/pornstar-logan-long-dead-at-34/
- Portland J. Death of August Ames Hear Jon Ronson Discuss in New Audio Trailer Rolling Stone. 2028. https://www.rollingstone.com/culture/culture-news/august-ames-porn-starsuicide-jon-ronson-audible-745450/
- Webster LR, Webster RM. Predicting aberrant behaviors in opioid-treated patients: preliminary validation of the Opioid Risk Tool. Pain Med. 2005; 6: 432-442.
- Zara Ahmad, Jiin Kim, Aleksandra Udovica, et al. From Comparison of Fatal Recreational Drug Overdoses between Celebrities and Non-Celebrities. STEM Fellowship Journal. 2020; 6: 1-7.
- 22. Kenny DT, Asher A. Life Expectancy and Cause of Death in Popular Musicians: Is the Popular Musician Lifestyle the Road to Ruin. Med Probl Perform Art. 2016; 31: 37-44.
- 23. Bellis MA, Hennell T, Lushey C, et al. Elvis to Eminem: quantifying the price of fame through early mortality of European and North American rock and pop stars. J Epidemiol Community Health. 2007; 61; 896-901.
- 24. Tolson GH, Cuyjet MJ. Jazz and substance abuse: road to creative genius or pathway to premature death. Int J Law Psychiatry. 2007; 30: 530-538.
- 25. Griffith JD, Hayworth M, Adams LT, et al. Characteristics of pornography film actors: self-report versus perceptions of college students. Arch Sex Behav.2013; 42: 637-647.
- 26. Ouellet L, Côté K, Audet O et al. Profil sociodémographique et psychosexuel des acteur.trices dans les films pornographiques Unexamen de la portée Sociodemographic and psychosexual profile ofactors/actresses in pornographic films A scoping review. Canadian Psychology Psychologie canadienne. 2023; 64: 25-39.

- 27. Abbott S, Weitzer R. Motivations for pursuing an acting career in pornography. Sex for sale Prostitution pornography and the sex industry. New York: Routledge. 2000; 17-34.
- Griffith JD, Adams LT, Hart CL, et al. Pornography actors A qualitative analysis of motivations and dislikes. North American Journal of Psychology. 2012; 14: 245-256.
- 29. Smith RG. The Non-Symmetric Axiom XX ≠ XY of the Opioid Crisis. Adv Res Foot Ankle. 2018; 1: 115.
- Fillingim RB, King CD, Ribeiro-Dasilva MC, et al. Sex gender and pain a review of recent clinical and experimental findings. J Pain. 2009; 10: 447-485.
- 31. Mogil JS, Bailey AL. Sex and gender differences in pain and analgesia. Prog Brain Res. 2010; 186: 141-157.
- 32. Pieretti S, Di Giannuario A, Di Giovannandrea R, et al. Gender differences in pain and its relief. Ann Ist Super Sanita. 2016; 52: 184-189.
- Craft RM. Modulation of pain by estrogens. Pain. 2007; 132: S3-S12.
- Smith YR, Stohler CS, Nichols TE, et al. Pronociceptive and antinociceptive effects of estradiol through endogenous opioid neurotransmission in women. J Neurosci. 2006; 26: 5777-5785.
- Owens GM. Gender differences in health care expenditures resource utilization and quality of care. J Manag Care Pharm. 2008; 14: 2-6.
- 36. Terplan M. Women and the opioid crisis: historical context and public health solutions. Fertil Steril. 2017; 108: 195-199.
- Marrocco A, Stewart DE. We have come a long way maybe recruitment of women and analysis of results by sex in clinical research. J Womens Health Gend Based Med. 2001; 10: 175-179.
- Soldin OP, Mattison DR. Sex differences in pharmacokinetics and pharmacodynamics. Clin Pharmacokinet. 2009; 48: 143-157.
- Soldin OP, Chung SH, Mattison DR. Sex differences in drug disposition. J Biomed Biotechnol. 2011; 2011: 187103.
- 40. Smith RG. Using clinical-based evidence as the sextant to prescribe and navigate through the opioid crisis. Foot and Ankle Quarterly. 2018; 29: 143-157.
- 41. Sarton E, Olofsen E, Romberg R, et al. Sex differences in morphine analgesia an experimental study in healthy volunteers. Anesthesiology. 2000; 93: 1245-1246A.
- 42. Averitt DL, Eidson LN, Doyle HH, et al. Neuronal and glial factors contributing to sex differences in opioid modulation of pain. Neuropsychopharmacology. 2019; 44: 155-165.
- 43. Patel JJ, Volino LR, Cosler LE, et al. Opioid abuse risk among student pharmacists. J Opioid Manag. 2022; 18: 161-166.
- 44. Gove WR, Geerken MR. Response bias in surveys of mental health an empirical investigation. AJS. 1977; 82: 1289-1317.

© 2024 Robert G. Smith. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License