

**Vermont Legislative Research Service**  
<http://www.uvm.edu/~vlrs/>

### **Addiction and Mental Health Disorders**

Currently, there is a high frequency-occurrence of addiction and mental health issues nationwide. Within the United States, roughly 4% of all adults suffer from varying levels of co-occurring drug addiction and mental health issues. This means that of the 20.8 million adults suffering from substance abuse disorder in the U.S., 42.8% have co-occurring mental illness.

addictive issues are not only a product of environmental factors that contribute to exacerbate addictive tendencies. This report will analyze the systemic, biological, social and psychological influences that contribute to drug addiction, with a specific focus on opioid addiction due to the extensive research and attention paid to this specific spectrum of drug addiction.

### Nationwide Opioid Epidemic

Opioids are classified as pharmaceuticals, either derived naturally from the opium poppy or synthetically. Opioids are prescribed as a pain reliever to patients. The highly addictive nature of these drugs has resulted in a widespread epidemic. The National Institute of Drug Abuse, a part of the U.S. Department of Health and Human Services, is a research agency that is at the forefront of medical data assessment and analysis with the mission of improving science on the causes and consequences of drug abuse. The National Institute of Drug Abuse found that opioid overdose deaths rose significantly, increasing 2.8 fold annually from 2002 to 2015, with approximately 3,300 deaths in 2015.<sup>11</sup> Daily, there are over 115 deaths due to opioid overdoses.<sup>12</sup> The issue of opioid abuse and addiction has resulted in significant economic, social, and health concerns in the United States.<sup>13</sup>

Among health professionals, opioid addiction is considered a mental health disease that is caused by a multitude of external and systemic factors. Conventional treatment for the public health opioid crisis as outlined by the National Institute of Drug Abuse employs a three-pronged approach to suppressing the epidemic. The Institute identifies overdose reversal, addiction treatment, and pain management as the three critical points of leverage for future action.<sup>14</sup> From increased education to improved access to naloxone, state legislatures across the country have enacted a variety of laws in order to tackle this issue through comprehensive lawmaking.<sup>16</sup>

---

<sup>8</sup> Shoshana Eitan et al., "Opioid Addiction: Who are your real friends?" *Neuroscience & Biobehavioral Reviews*, no. 83 (2014):190-196 doi:



opioid overdose frequency following the recent legislation limiting opioid prescription practices and increasing treatment accessibility<sup>28</sup>

### **Biological Factors**

Evidence suggests that it is often the case that individuals who are affected by substance use disorders also experience comorbid mental health disorders<sup>29</sup>. The importance of this point,

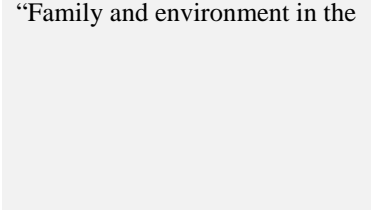
This is significant because with the increasing severity of addiction, neuroadaptations in stress and reward circuits can occur, and “these changes may underlie the increasing emotional distress often associated with substance use disorders.”<sup>38</sup> Furthermore, it has been found across many studies that stress can induce drug craving, which supports the allostatic view of drug addiction.<sup>39</sup> From an allostatic viewpoint, the addict’s body (including neurochemical stress releases) can only regain a perceived “normal state” by using drugs. This also acts as a stress reward circuit. Ultimately, the increased emotional distress, coupled with a substance use disorder, can lead to trauma or a mental health disorder.<sup>40</sup> Yet it should be noted that different abused drugs have widely varying effects on neurobiological systems, so the severity and type of mental issue(s) is not specifically drug dependent.<sup>41</sup>

In terms of mental health disorders that have been linked to substance use disorders,

neuro

alcohol addiction (Table 1, row 8).<sup>56</sup> A survey of adolescents using multiple addictive substances found that the combination of peer influence and substance using families escalated susceptibility to addiction among children (Table 1, row 4).<sup>57</sup> In a five year study of 226 narcotic addicts, medical examiners concluded that adverse family circumstances including divorce or family disruption (prior to ages-12

**Table 1: Social and Psychological Studies**

|   | <i>Title</i>  | <i>Journal</i> | <i>Conclusion</i> | <i>Methodology</i> |
|---|---|----------------|-------------------|--------------------|
| 1 | "Family and environment in the<br> |                |                   |                    |



| <i>Title</i>  | <i>Journal</i>                     | <i>Conclusion</i>   | <i>Methodology</i>  |
|---|------------------------------------|---|---|
| 4 “Differential contributions of family and peer factors to the etiology of narcotic addiction” (1998) <sup>7</sup> | <i>Drug and Alcohol Dependence</i> | “Adolescents who come from disrupted families or even the perception of a negative home atmosphere and lower social support are typically show increased drug abuse.” <sup>68</sup> | “This retrospective study investigated relationships among early family circumstances, peer association and narcotic addiction over 5 year with a sample of 601 males.” <sup>69</sup> |

|    | <i>Title</i>  | <i>Journal</i>                      | <i>Conclusion</i>   | <i>Methodology</i>  |
|----|---|-------------------------------------|---|---|
| 8  | “Presence of Drug-Free Family and Friends in the Personal Social Networks of People Receiving Treatment for Opioid Use Disorder” (2016) <sup>76</sup>                     | <i>Journal of Substance Abuse</i>   | “Activating drug-free family and friends provides a potential pathway to help people with substance use disorder access an benefit from community support.” <sup>77</sup> | Observational study that evaluated the influence of social networks and addiction treatment using 355 samples. <sup>78</sup>  |
| 9  | “Risk factors for drug dependence among patients on opioid therapy in a large US healthcare system” (2010) <sup>79</sup>  | <i>Addiction</i>                    | A history of depression is linked to opioid addiction. <sup>80</sup>  | “Identified out-patients receiving 4+ physician orders for opioid therapy in the past 12 months for non-cancer pain within a large US healthcare system. We completed diagnostic interviews with 705 of these patients to identify opioid use disorders and assess risk factors.” <sup>81</sup> |
| 10 | “Comparison of the Risks of Shopping Behavior and Opioid Abuse Between Tapentadol and Oxycodone and Association of Shopping Behavior and Opioid Use” (2014) <sup>82</sup> | <i>The Clinical Journal of Pain</i> | There is an association between paying for prescriptions in cash and a higher incidence of prescription opioid abuse. <sup>83</sup>                                       | A retrospective cohort study that followed opioid patients (277,410 participants) and their shopping behavior for 1 year. <sup>84</sup>   |
| 11 | “How Predictors of Prescriber Drug Abuse Vary by Age” (2008) <sup>85</sup>  | <i>The Journal of Drug Issues</i>   | “Individuals who commit to doing well and finishing are likely to misuse”   | Literature Review   |

<sup>76</sup> Michael Kidorf et al., “Presence of Drug-Free Family and Friends,” 87-92.

<sup>77</sup> Michael Kidorf et al., “Presence of Drug-Free Family and Friends,” 87-92.

<sup>78</sup> Michael Kidorf et al., “Presence of Drug-Free Family and Friends,” 87-92.

<sup>79</sup> J.A. Boscarino et al., “Risk factors for drug dependence among patients on opioid therapy in a large US healthcare system,” *Addiction* 105, no. 10 (2010): 1776-82, <https://doi.org/10.1111/j.1360-0443.2010.03052.x>

<sup>80</sup> Substance Abuse and Mental Health Services Administration’s Center for the Application of Prevention Technologies, *Preventing Prescription Drug Misuse*.

<sup>81</sup> Substance Abuse and Mental Health Services Administration’s Center for the Application of Prevention Technologies, *Preventing Prescription Drug Misuse*.

<sup>82</sup> Soledad Cepeda et al., “Comparison of the Risks of Shopping Behavior and Opioid Abuse Between Tapentadol and Oxycodone and Association of Shopping Behavior and Opioid Use” (2014), *The Clinical Journal of Pain* 30(1): 1-5 (2014).

*Title*

## Systemic Factors

The Substance Abuse and Mental Health Administration lists nonmedical use of prescription pain killers as the second most common type of drug use in the United States.<sup>87</sup> Factors like the over prescription of opioids in emergency rooms, and the manner in which these prescription drugs are marketed further contribute to the United States' growing opioid epidemic.<sup>88</sup> The following peer reviewed studies have examined aspects of both the pharmaceutical and medical industries in attempts to determine what parts of the U.S. health care system may be exacerbating the epidemic.

In a study regarding the frequency of opioid prescriptions utilized data collected in the National Hospital Ambulatory Care Survey from 2001 to 2010 (Table 2, Row 1), Mazer Amirshahi et al. concluded that there had been a significant increase in opioid prescriptions for emergency department visits despite there only being "...a modest increase in pain related complaints."<sup>89</sup> These findings were reinforced by a study performed in 2012 that examined the frequency at which opioid

opiates through prescription pills (Table 2, Row 4)<sup>96</sup> Younger heroin users (aged 29 and below) noted that they had switched to heroin after prescription opiates became unavailable, to either due to cost or limited prescriptions.<sup>97</sup> Another factor that heroin users noted were the extremely addictive properties of prescription opiates that caused them to become reliant on the substance.<sup>98</sup> Mars et al. hypothesized that this pathway to addiction could have been partially caused by a 500% increase in opiate prescriptions from 1997 to 2005.<sup>99</sup>

In a 2015 study that examined opioid use in Ontario, Canada, et al. concluded that the lack

Furthermore, an underexamined factor in the opioid crisis is the increasing importance of patient satisfaction scores in healthcare surveys like HCAHPS. Health care survey created by Medicare and Medicaid services.<sup>106</sup> Pain management is one topic often addressed in patient satisfaction surveys, and the survey results are usually publicly reported and correlate with hospital reimbursement.<sup>107</sup> Thus, healthcare models are incentivizing hospitals to treat pain as thoroughly as possible, regardless of the potential consequences.

Another systemic factor regarding the prevalence of the opioid crisis is its presentation in the media. A study conducted by Dasgupta, Mandl, and Brownstein examined unintentional deaths involving opioids from 1999 to 2005 in the United States and the ways in which these deaths correlated with the presentation of opioids in news media (Table 2, Row 6).<sup>108</sup> Researchers utilized google search archives to obtain approximately 24,000 news articles relating to opioid abuse. Ultimately, Dasgupta, Mandl, and Brownstein concluded that heavy news media coverage of opioids, regardless of whether the coverage was positive or negative, preceded a rise in overdose deaths by two to six months and that news media could be a significant predictor in regards to opiate misuse and overdose.<sup>109</sup> The researchers also noted the prevalence of news articles that could unintentionally endorse opioid misuse.

---

<sup>106</sup> Tracy, "An Exploration of Opioid Use in the United States," 11.

<sup>107</sup> Tracy, "An Exploration of Opioid Use in the United States," 11.

<sup>108</sup> Nabarun Dasgupta, Kenneth D. Mandl, and John S. Brownstein "Breaking the News or Fueling the Epidemic? Temporal Association between News Media Report Volume and Opioid related Mortality," *PLOS One* 4, no. 11, (November 2009): 108.74 Tm 0 g 0 G [er 2vember 200: € P L F "

**Table 2: Systemic Studies**

| Title  | Journal                                     | Conclusion   | Methodology  |
|--|---|--|--|
| 1 "Rising Opioid Prescribing in Emergency Departments in the United States, 2001-2010" (2014) <sup>111</sup>   | <i>Academic Emergency Medicine</i>          | Opioid prescribing in Emergency Department visits increased from 20.8% to 30% between 2001 and 2010. <sup>112</sup>  | Researchers used data collected from the National Hospital Ambulatory Medical Care Survey of Emergency Department visits from 2001-2010, to examine the use of 6 commonly prescribed opioids.  |
| 2 "Assessing Emergency Department Opioid Prescriptions with Real-Time Use" (2015) <sup>113</sup>   | <i>Annals of Emergency Medicine</i>         | 31% of patients in emergency departments receiving opioid prescriptions, 12% of whom previously fill their prescriptions. <sup>114</sup>                     | Researchers collected data from Colorado's prescription monitoring program during a 5-month period of time. They observed 4,800 patients who were treated for pain, 775 of whom received opiate prescriptions, and 299 of those those prescriptions recurrently. |
| 3 "Emergency Department Opioids as an Initial Step in Heroin Preceding Addiction" (2016) <sup>115</sup>  | <i>Annals of Emergency Medicine</i>         | A majority of heroin users interviewed in an emergency room stated that their first introduction to opioids came from a medical prescription. <sup>116</sup> | A cross-sectional controlled study that surveyed 59 patients who reported nonmedical use of opiates in an urban Emergency Department.  |
| 4 "Every 'Never' I Ever Said Turns Out to be True": Transitions from Opioid Injection to Heroin" (2014) <sup>117</sup>   | <i>International Journal of Drug Policy</i> | A majority of young heroin users interviewed in Philadelphia and San Francisco were introduced to opiates through prescription. <sup>118</sup>               | Researchers collected qualitative interviews from 41 nonmedical opiate users in San Francisco and Philadelphia.  |
| 5 "Evaluating the Effectiveness of First-Time Methadone Maintenance Therapy Across Northern, Rural and Urban Regions of Ontario, Canada" (2015) <sup>119</sup> | <i>Journal of Addiction Medicine</i>        | Addicts who have access to addiction therapy are more likely to continue using these services. <sup>120</sup>  | Researchers analyzed the data of 17,000 patients, collected from administrative health care databases in urban and rural Ontario, Canada regarding patients' use of  |

| <i>Title</i>   | <i>Journal</i>  | <i>Conclusion</i>  | <i>Methodology</i>  |
|--|-----------------|--|---|
| 6 “Breaking the News or Fueling the Epidemic? Temporal Association between News Media Report Volume and OpioidRelated Mortality” (2009) <sup>121</sup> | <i>PLoS One</i> | Heavy news media coverage of opioids, whether positive or negative, can be a significant predictor of a rise in opiate misuses and overdoses in the following 2 to 6 months <sup>122</sup> | opiate addiction therapy between 2003 a 2012.<br>Researchers compared monthly time ser of opiate overdoses in the U.S. from 199 2005, with monthly counts of English language news articles relating to prescription opiates. |

<sup>121</sup> Dasgupta, Mandl, and Brownstein, “Breaking the News or Fueling the Epidemic?,” 5.

<sup>122</sup> Dasgupta, Mandl, and Brownstein, “Breaking the News or Fueling the Epidemic?,” 5.



## Conclusion

The cooccurring addiction and mental health crisis is most prominently in the form of the opioid crisis—that exists in the United States today is a result of the combination of a number of biological, social, psychological, and systemic factors. An amalgam of issues such as aggressive marketing of painkillers by pharmaceutical industries, over prescription of opioids by hospitals, preexisting mental conditions in those who use drugs, preconditioning of a user's social networks, and one's access to health care are all problems exacerbating this crisis. Increasing the availability of addiction treatment, as well as decreasing opiate prescriptions to patients who have never received an opiate prescription, have both proven to be effective solutions in regards containing spread of this crisis.<sup>123</sup>

---

This report was completed on July 23, 2018 by Brian Angel, Noah Boland, and Elie Jordi under the supervision of Professor Jack Gierzynski and Professor Robert Bartlett with the assistance of Research Assistant Catherine Curran in response to a request from Representative Brian Cina

Contact: Professor Anthony “Jack” Gierzynski, 534 Old Mill, The University of Vermont, Burlington, VT 05405, phone 802-656-7973, email [ajgierzyn@uvm.edu](mailto:ajgierzyn@uvm.edu)

Disclaimer: The material contained in the report does not reflect the official policy of the University of Vermont.

---

<sup>123</sup> Hoppe et al., “Association of Emergency Department Opioid Initiation,” 496.