Youth & Opioids: A longitudinal investigation into contributing factors in the development of opioid use disorders

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Introduction

- 61% of recent drug overdose deaths in 15-25 year olds involve some form of opioid.
- Evidence suggests that adolescents, who experience elevated levels of substance exploration, are prone to opioid misuse during this developmental period.
- There is a significant gap in data on the nature of pain medication prescribing and adolescent outcomes in medical settings - where most youth are legitimately introduced to prescription opioids.

This study aims to:

1) Create the first longitudinal clinical research study to prospectively follow adolescents who receive opioid prescriptions for pain as part of routine outpatient pediatric medical care.
2) Characterize family, peer, and adolescent risk factors over the course of two years.

Theoretical model of risk and protective factors

- Family risk: Parent(s) with chronic pain
- Peer risk: Peer(s) with substance use
- Adverse childhood experiences

Materials and Methods

Participants:

- 500 adolescents aged 14-18 receiving opioid Rx and a parent/guardian.
- Youth and a parent/guardian complete self-report measures.
- Youth will complete daily diaries.
- Youth and a parent/guardian will be assessed comprehensively at baseline and followed every 6 months for 2 years.

Youth and their parent/guardian will be enrolled in the study within 72 hours after prescription.

Youth measures: Parent measures:

- Youth phone interview: Parent phone interview
- TUIR phone interview: TUIR phone interview
- Youth survey: Parental monitoring
- Demographics: Prescription dispense/refill verification
- PROMIS pediatric profile:
- Pain intensity scale: Parent Survey:
- Fatigue scale: Demographics
- Peers scale: PROMIS measures:
- Depression scale: Pain behavior:
- Pain interferences: Anxiety scale
- Peer relationships: Anger scale
- Pain catastrophizing scale - PCS-C: Pain interference
- Distress intolerance: Anxiety scale
- Pain treatment history: Anger scale
- Goal orientation scale GOS: Pain catastrophizing scale - PSEQ-C
- Pain catastrophizing scale - PSEQ-C: Pain catastrophizing scale - PCS-P
- PSEQ-C: Pain catastrophizing scale - PCS-C
- Fatigue scale: CSII

Intervention: Introduction of opioid via prescription

Post-prescription risk and protective factors

Table 1. Initial and subsequent opioid prescriptions

<table>
<thead>
<tr>
<th>OHSU Clinical setting</th>
<th>Age in years (range 14-19)</th>
<th>M (SD)</th>
<th>Opioid Rx’s n (%)</th>
<th>% with refill/subsequent prescription at &lt;1yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED</td>
<td>16.94 (1.76)</td>
<td>376 (37.0%)</td>
<td>28.3%</td>
<td></td>
</tr>
<tr>
<td>Day Surgery</td>
<td>16.20 (1.75)</td>
<td>486 (47.8%)</td>
<td>24.9%</td>
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<tr>
<td>Outpatient</td>
<td>15.87 (1.59)</td>
<td>154 (15.2%)</td>
<td>17.1%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16.44 (1.75)</td>
<td>1,016</td>
<td>25.0%</td>
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</tbody>
</table>

Initial Results

As of 2020: n = 139 14-18 year olds

<table>
<thead>
<tr>
<th>Variable</th>
<th>Males (M) (SD)</th>
<th>Females (M) (SD)</th>
<th>t(df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain frequency</td>
<td>82.5% (38.5)</td>
<td>75.7% (30.5)</td>
<td>t(108)=1.93</td>
</tr>
<tr>
<td>Average daily pain intensity</td>
<td>39.19 (18.9)</td>
<td>47.59 (19.7)</td>
<td>t(101)=2.23**</td>
</tr>
<tr>
<td>Opioid use: % diary days with use</td>
<td>10.3% (19.9)</td>
<td>14.2% (22.4)</td>
<td>t(107)=9.6</td>
</tr>
<tr>
<td>Pain Catastrophizing Scale</td>
<td>11.19 (10.03)</td>
<td>19.74 (12.01)</td>
<td>t(102)=3.95***</td>
</tr>
<tr>
<td>PROMIS Anxiety</td>
<td>46.77 (10.11)</td>
<td>55.45 (11.58)</td>
<td>t(100)=4.03**</td>
</tr>
<tr>
<td>PROMIS Depression</td>
<td>50.04 (11.83)</td>
<td>56.69 (11.57)</td>
<td>t(101)=2.85**</td>
</tr>
<tr>
<td>Diary negative affect: Pain</td>
<td>18.09 (17.54)</td>
<td>22.93 (18.78)</td>
<td>t(101)=1.39</td>
</tr>
<tr>
<td>Diary negative affect: Sleep</td>
<td>20.15 (19.69)</td>
<td>29.60 (22.38)</td>
<td>t(108)=2.35*</td>
</tr>
<tr>
<td>Diary negative affect: Work</td>
<td>15.38 (18.84)</td>
<td>25.62 (23.63)</td>
<td>t(108)=2.53**</td>
</tr>
</tbody>
</table>

Significance

- We expect our data to reveal:
  - Adolescents who receive prescriptions for opioids for chronic pain conditions (vs. acute or post-op pain) will have higher psychological distress and pain catastrophizing; be more likely to have a parent(s) with a chronic pain condition, a current opioid prescription, and higher pain catastrophizing; and be more likely to have peers with opioid prescriptions and low perceived risk of harm.
  - Adolescent baseline pain risk and increasing pain intensity over time and increasing peer risk factors will be associated with increases in opioid use, problems, and OUD symptoms.
  - Post-prescription family risk (parent medication monitoring, opioid prescriptions in the household, and parent catastrophizing about adolescent pain) will mediate the longitudinal association between family history risk (chronic pain, substance abuse, perceived risk) and opioid use, problems, and OUD symptoms.
  - Post-prescription adolescent resilience factors will attenuate the association between peer risk and adolescent opioid outcomes over 2 years.

Literature Citations


Acknowledgments

Special thanks to the Advancing Research in Pediatric Pain lab at Oregon Health and Science University, Dr. Anna Wilson and Corrin Murphy, who provided the ROIIR protocols and the guidance to make this poster possible.

Thanks to BUILD EXIST and URISSE staff, Dr. Decatur Foster and Dr. Shaneice Dixon, for guidance during the curating and editing of this project.

BUILD EXIST is funded under grants R35GM131893, U18GM118964, TL4GM118965.

Thanks to URISSE Cohort 2 members Meaghan Creech and Ali Stutman for peer review during the editing process.