

Online Myths on Opioid Use Disorder: A Comparison of Reddit and a Large Language Model

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Background + Motivation

More than **106,000** opioid drug-involved deaths in the United States [1]



**Barriers to Harm
Reduction**

Myths around treatment, people with the opioid use disorder (OUD) [2]
(from healthcare providers, family, and friends)

Myths: Inaccurate and potentially harmful beliefs [3]

[1] NIDA. 2023. Drug Overdose Death Rates. <https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates>.

[2] Garrett, R.; and Young, S. D. 2022. The Role of Misinformation and Stigma in Opioid Use Disorder Treatment Uptake. Substance Use & Misuse.

[3] ElSherief, M.; Sumner, S.; Krishnasamy, V.; Jones, C.; Law, R.; Kacha-Ochana, A.; Schieber, L.; and De Choudhury, M. 2024. Identification of Myths and Misinformation About Treatment for Opioid Use Disorder on Social Media. JMIR Form Res.

Background + Motivation

Alternate ways to seek information

1



Online communities
e.g., Reddit

Peer support capabilities [1]

Shared experiences [2, 3]

[1] Balsamo, D.; Bajardi, P.; De Francisci Morales, G.; Monti, C.; and Schifanella, R. 2023. The Pursuit of Peer Support for Opioid Use Recovery on Reddit. Proc. ICWSM.

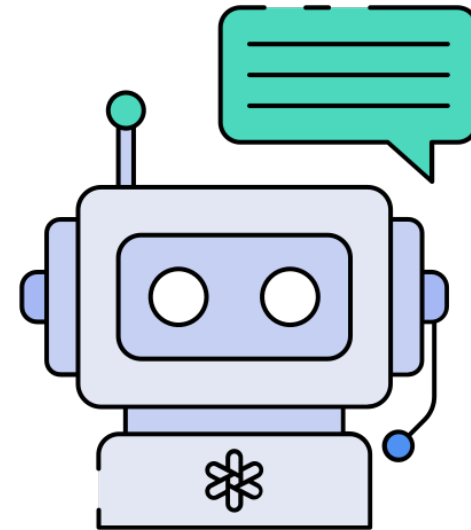
[2] Chancellor, S.; Nitzburg, G.; Hu, A.; Zampieri, F.; and De Choudhury, M. 2019. Discovering alternative treatments for opioid use recovery using social media. In Proc. CHI.

[3] Bunting, A. M.; Frank, D.; Arshonsky, J.; Bragg, M. A.; Friedman, S. R.; and Krawczyk, N. 2021. Socially-supportive norms and mutual aid of people who use opioids: An analysis of Reddit during the initial COVID-19 pandemic. Drug and alcohol dependence

Background + Motivation

Alternate ways to seek information

2



**Large Language Model
(LLM)-powered chatbots [1]**
e.g., ChatGPT

*Public access
(simple interface, low cost) [2]*

Question-answer systems [3]

Writing assistants [4]

[1] Tate, S.; Fouladvand, S.; Chen, J. H.; and Chen, C.-Y. A. 2023. The ChatGPT therapist will see you now: Navigating generative artificial intelligence's potential in addiction medicine research and patient care. *Addiction*.

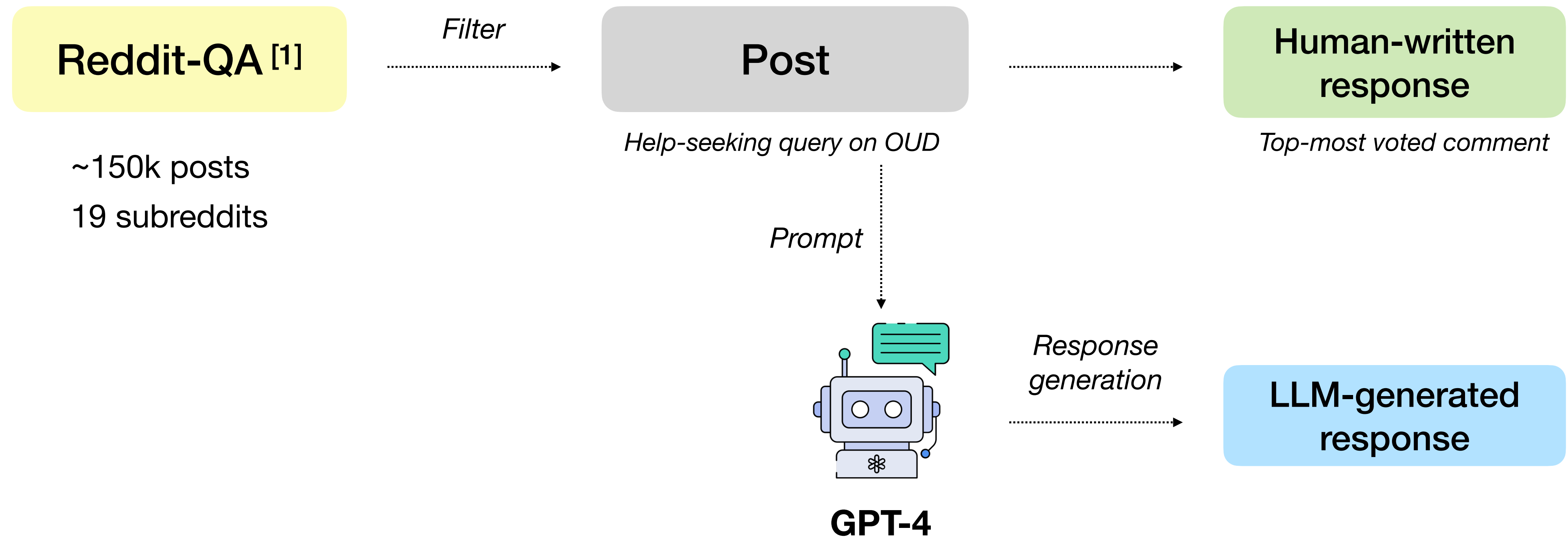
[2] <https://openai.com/index/chatgpt/>

[3] Alanezi, F. 2024. Assessing the Effectiveness of ChatGPT in Delivering Mental Health Support: A Qualitative Study. *Journal of Multidisciplinary Healthcare*

[4] Jakesch, M.; Bhat, A.; Buschek, D.; Zalmanson, L.; and Naaman, M. 2023. Co-Writing with Opinionated Language Models Affects Users' Views. In *Proc. CHI*.

- 1 Prevalence of myths and counter-myths within human-written and LLM-generated responses**
- 2 Framing of responses that promote or counter the myths**

Dataset



[1] Laud, T.; Kacha-Ochana, A.; Sumner, S.; Krishnasamy, V.; Law, R.; Schieber, L.; De Choudhury, M.; and ElSherief, M. 2025. Large-Scale Analysis of Online Questions Related to Opioid Use Disorder on Reddit. Proc. ICWSM

Prevalence of Myths and Counter-myths

5 myths surrounding patient characteristics and treatment models [1, 2, 3, 4]

Myth 1 (M1): Medication-assisted treatments (MAT) are merely replacing one drug with another

“Do not use MAT. **You will end up with another addiction.**” — *(promotes M1)*

“You should **consider MAT. It does not replace one drug with another.**” — *(counters M1)*

[1] ElSherief, M.; Sumner, S.; Krishnasamy, V.; Jones, C.; Law, R.; Kacha-Ochana, A.; Schieber, L.; and De Choudhury, M. 2024. Identification of Myths and Misinformation About Treatment for Opioid Use Disorder on Social Media. JMIR Form Res.

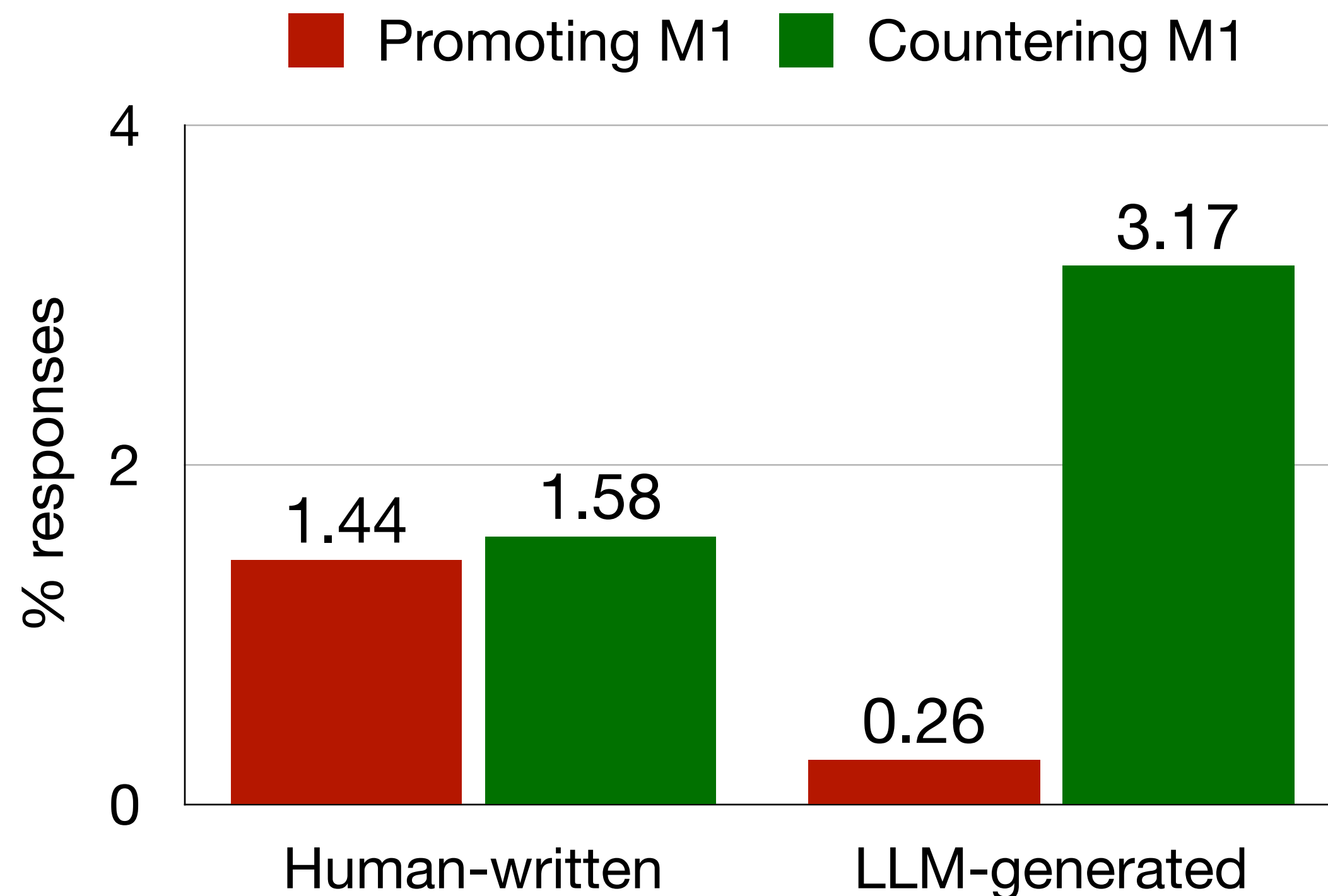
[2] SAMHSA. 2024. Statutes, Regulations, and Guidelines. <https://www.samhsa.gov/medications-substance-use-disorders/statutes-regulations-guidelines>.

[3] Chen, J. 2017. 3 Major Myths About Opioid Addiction. <https://www.yalemedicine.org/news/opioid-addiction-myths>.

[4] Johns Hopkins Medicine. 2020. Building Healthier Communities: Opioid Use Disorder. <https://www.hopkinsmedicine.org/-/media/johns-hopkins-bayview/myths-about-opioid-use-disorder.pdf>

Prevalence of Myths and Counter-myths

Findings



Myths were more widespread within human-written responses

“Don’t take methadone. **You’ll be addicted**. Trust me, stay away pal!” — (paraphrased from Reddit)

“[MAT] **not about trading one addiction for another**, but rather about managing the disorder in a safer, controlled manner.” — (GPT-4)

Framing of Myths vs. Counter-myths

Findings

Responses promoting the myths contained more **trustworthy** framings

“Don’t take methadone. **You’ll be addicted. Trust me**, stay away from MAT pal!” — (paraphrased from Reddit; promotes M1)

Responses countering the myths contained more **knowledge-based** framings

“[...] There is a **website**: [link] where you can know about MAT, and it **mentions that it does not trade one drug with another**” — (paraphrased Reddit response; counters M1)

Takeaways

Myths were more widespread within human-written responses



1 Careful integration of LLMs in online communities

Takeaways

Responses promoting the myths contained more trustworthy and authoritative framings



2

Consider underlying linguistic framings when detecting myths

Thank you!



Paper



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