Addictive Behaviors Reports 19 (2024) 100541

Contents lists available at ScienceDirect

Addictive Behaviors Reports

journal homepage: www.elsevier.com/locate/abrep

Short Communication

Addressing rural and non-rural substance use disorder stigma: Evidence from a national randomized controlled trial

Madison Ashworth [a,*], Linda Thunström [b], Grace L. Clancy [a], Robin A. Thompson [a], David Johnson [a], Ernest Fletcher [a]

[a] Fletcher Group, Inc., 601 Meyers Baker Road, London, KY 40741, United States
[b] University of Wyoming, Department of Economics, 1000 E. University Ave., Laramie WY 82070, United States

ARTICLE INFO

Keywords:
Contact interventions
Education interventions
Recovery housing
Stigma
Substance use disorder

ABSTRACT

Background: Individuals with substance use disorder (SUD) and recovery support services often face significant social stigma, especially in rural areas. One method of addressing stigma is through education and personal recovery stories. It is unclear if such messages will work similarly across rural and non-rural areas.
Methods: We conduct an exploratory analysis of data from a national randomized controlled trial (N = 2,721) to determine if there are differences in the effectiveness of messages at reducing stigma across rurality. Specifically, we test four interventions to reduce stigma: education about the effectiveness of recovery housing and three versions of a personal recovery story that varied social distance and delivery medium (identified written story, anonymous written story, and video).
Results: We find that messages may not have the same effect across rurality, with non-rural participants in the identified and anonymous written recovery story groups having lower stigma scores and only rural participants exposed to the anonymous written story having lower stigma scores compared to their counterparts in the control group. Further, non-rural participants exposed to both written story treatments had higher positive feelings towards those in recovery compared to the control group, but only rural participants in the anonymous written story group had higher positive feelings compared to the control group.
Conclusion: Our results suggest that messages may have different effects on stigma across rurality and that rural participants' beliefs may be particularly hard to change. Future research should examine what types of stigma reduction interventions are most effective in rural areas.

1. Introduction

Substance use disorder (SUD) continues to be a top concern in rural America as the rate of SUD incidence and associated drug overdose mortality in rural areas continues to increase (Bolin et al., 2015; Hedegaard, 2021). Compounding the issue of SUD, most rural areas have fewer recovery support services and reduced access to quality care than their urban counterparts (Pullen & Oser, 2014). Due to this lack of resources, expansions of recovery services like recovery housing (RH), a housing model that relies on peer support and a sober living environment to help individuals maintain their recovery (HUD, 2015), is essential. RH has been found to improve numerous SUD outcomes and has been identified as a particularly important resource in rural communities as it has a lower cost of care than traditional treatment models and is highly effective (Ashworth et al., 2022; French & McGeary, 1997; Mericle et al., 2022; Polcin et al., 2010).

A key barrier facing the expansion of RH in rural areas is community stigma surrounding SUD and SUD treatment which has been found to be a significant barrier to treatment-seeking and success in both rural and non-rural areas (Anvari et al., 2022; Burgess et al., 2021; Crapanzano et al., 2018). Social stigma occurs at the community level when a particular behavior or characteristic is perceived as wrong and used to distinguish between members of society. Although RH has been found to be an important resource in the SUD continuum of care, efforts to establish RH are often hindered by community stigma and "not in my backyard" (NIMBY) beliefs (B, 2017; Rios, 2019). Addressing stigma held towards people with SUD can aid in the expansion of RH by reducing NIMBY beliefs and increasing support and awareness of SUD recovery support services.

Interventions to reduce stigma towards those with SUD have been

* Corresponding author at: 601 Meyers Baker Road, Suite 238, London, Kentucky 40741, United States.
E-mail address: mashworth@fletchergroup.org (M. Ashworth).

https://doi.org/10.1016/j.abrep.2024.100541
Received 25 September 2023; Received in revised form 6 March 2024; Accepted 18 March 2024
Available online 19 March 2024

tested, but it is unclear if these interventions work in rural areas as no studies to our knowledge have examined how intervention effectiveness may differ across rural and non-rural individuals. Among studies that have examined interventions to reduce stigma among national samples, narratives of individuals with SUD have been identified as most effective when they humanize the experience of SUD and incorporate messages of hope and recovery (Judd et al., 2021; McGinty et al., 2018). Education interventions have also been tested to reduce SUD stigma among national samples as well but have been identified as potentially less effective than personal narratives (Kelly et al., 2021; Kennedy-Hendricks et al., 2022; Luty et al., 2007; McGinty et al., 2018). Interventions to reduce stigma may be more or less effective in rural areas compared to urban areas as rural individuals often differ in key demographics such as age, political leaning, and income, may have different exposure to SUD, and have been found to be less responsive to public health information (Hedegaard, 2021; Mitchell, 2018; Thunström, Ashworth, Cherry, Finnoff, & Newbold, 2021). In this study, we aim to examine whether messages that aim to reduce stigma including a message about the effectiveness of RH and three versions of a personal recovery story that varied social distance and delivery medium (identified written story, anonymous written story, and video) work similarly across rural and non-rural participants.

2. Methods

We analyzed data gathered from a survey experiment in which participants were randomly exposed to one of five information treatments and then asked a series of questions to measure social SUD stigma, RH support, and SUD beliefs. The survey experiment was approved as an exempt protocol by the Western Copernicus Institutional Review Board and pre-registered in the AEA RCT registry (RCT ID: AEARCTR-0008758).

2.1. Sample

Survey participants were recruited by Qualtrics via inviting a randomly selected sample of qualifying participants from their partners' traditional, actively managed market research panels. Participants were paid the standard compensation from the panel host for completing a survey (Qualtrics, 2023), which may vary across host panels in type and size, depending on how participants were recruited to the panel, personal preferences, and history on the panel. Those who did not spend long enough taking the survey such that it was implausible they were fully exposed to the interventions and those that failed attention checks included in the survey were removed from the final sample (N = 351). After removing those who failed attention checks, the final sample consisted of 2,721 U.S. adults from across the country that was quota representative of the U.S. population based on income, education, and race. The final sample consisted of 670 (25 %) rural and 2,051 (75 %) non-rural participants (Table 1). Data was collected between January 26, 2022, and February 15, 2022.

2.2. Survey procedure

All participants were presented with a series of demographics questions including whether they lived in a rural, urban, or suburban area, and provided a brief description of RH and SUD. Participants were then randomized into one of five treatment groups. The *control treatment* included no additional information. The *data treatment* presented participants with an infographic describing the effectiveness of the Recovery Kentucky program at improving various treatment outcomes like substance use, mental health, and employment (Cole et al., 2021). The anonymous or identified written story treatments presented participants with a written story of an individual in recovery who had successfully completed the Recovery Kentucky program that was either anonymous or identified with the name of the storyteller. Both stories were presented identically, with the exception of the identity (name) of the storyteller being revealed in the identified written story, while the person telling the story remained anonymous (and was referred to as a "person in recovery") in the anonymous treatment. Finally, the *video* treatment presented participants with a 3-minute video of the same individual from the written story treatments telling their story. The story intervention, presented via writing or video, highlighted an individual's recovery, including their history with addiction, how recovery housing helped them, and how they help others in their recovery. The storyteller was a middle-aged, white man from Kentucky.

After exposure to the treatments, all participants were asked to answer questions from two validated mental health stigma scales that we adapted to reflect beliefs about individuals with SUD and SUD treatment including RH. No assessment of stigma was done prior to exposure to the treatments. The first stigma scale was an adaptation of the Community Attitudes towards Mental Illness (CAMI) scale which measures social SUD stigma, including stigmatizing beliefs towards individuals with SUD, towards community treatment of SUD, and towards RH specifically (Taylor & Dear, 1981). The second stigma scale was the Affect Scale which was adapted to measure participant's perceived emotional response if they were to encounter an individual in recovery from a SUD (Brown, 2011; Penn et al., 1994). Both the Affect Scale and CAMI scale were coded such that higher scores represent less stigma or more positive feelings felt. Both adapted stigma scales exhibit strong internal consistency as evidenced by a Cronbach alpha coefficient

Table 1
Sample summary statistics across rural and non-rural participants (N = 2,721). P-values indicate significant differences between rural and non-rural participants.

Participant Characteristics	Percent	
	Rural (N = 670)	Non-Rural (N = 2,051)
Gender		
Female**	66.1	60.3
Male**	33.9	39.7
Age		
18–34***	20.7	28.6
35–54	34.2	31.0
55+*	45.1	40.4
Race		
White***	93.0	83.8
Black/African American***	4.0	9.3
Indigenous	4.0	2.6
Asian***	1.8	4.6
Native Hawaiian/Pacific Islander	1.2	0.6
Other*	1.3	3.0
Experience with SUD		
Familiar with RH	70.9	73.0
Frequently encounter SUD**	57.0	50.4
Friend with a SUD	49.5	49.7
Family member with a SUD**	56.1	14.8
Have a SUD	12.5	12.9
Negatively impacted by SUD	38.8	36.1
Know someone who went to SUD treatment*	59.2	65.0
Have gone to treatment themselves**	65.5	80.4
Political Leaning		
Liberal***	19.1	29.5
Moderate	44.3	40.2
Conservative**	36.6	30.3
Employment Profession		
Criminal justice professional	1.5	2.4
Medical professional	4.5	5.7
Therapist/counselor	1.9	3.0
Income and Education		
Low income***	49.0	32.3
High income***	3.3	9.5
Middle income***	47.8	58.2
College graduate***	44.5	45.0

*$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

greater than 0.95.

Participants were also asked questions to determine their general beliefs about and experience with SUD and whether they would support RH being built in their neighborhood. Finally, participants were asked a series of demographic questions including gender, race, income, political leaning, and employment profession. The full methods related to the survey instrument can be found in (Ashworth et al., 2023).

2.3. Analysis

Because our randomization was successful in equally distributing participant characteristics across treatment groups (Imbens & Rubin, 2015), we can identify treatment effects by conducting tests of equality of means without including other control variables. To determine differences in beliefs and support across rural and non-rural participants, we compared CAMI scores, Affect scale scores, and the share of participants who stated they would support RH across self-reported rural and non-rural participants that were randomized into the control treatment. To determine treatment effects for rural participants, we compared average CAMI scores and Affect Scale scores of rural participants in each treatment group to that of rural participants in the control group. To determine treatment effects for nonrural participants, we compared average CAMI scores and Affect Scale scores of non-rural participants in each treatment group to that of non-rural participants in the control group. We use two-sided t-tests to test for differences in CAMI and Affect scale scores and Pearson Chi-Squared tests to test for differences in the share of participants who agreed they support RH. We set our significance level (alpha) at 0.05. All analyses were completed using STATA SE v.18.

3. Results

We found that there is no significant difference in levels of stigma as measured by the CAMI scale (t = -0.398, p = 0.691) or the Affect scale (t = -0.432, p = 0.666) between rural and non-rural participants. Rural and non-rural participants also did not differ significantly in their stated support for RH with 51 % of non-rural participants and 56 % of rural participants agreeing that they would be fine with RH in their neighborhood (χ^2 = 1.273, p = 0.259).

Next, we examine heterogenous treatment effects across rurality (Table 2). Non-rural participants in the identified (t = -1.981, p = 0.048) and anonymous written story (t = -2.326, p = 0.020) treatment groups had significantly lower CAMI scale scores as compared to non-rural participants in the control treatment. However, non-rural participants in the data treatment (t = -0.471, p = 0.638) and the video treatment (t = -1.082, p = 0.280) had similar CAMI scale scores as non-rural participants in the control group. Non-rural participants in the identified and anonymous written story treatments (t = -2.097 and t = -3.133, p = 0.036 and p = 0.002) had significantly higher positive feelings towards individuals in recovery as measured by Affect scale scores compared to non-rural participants in the control treatment. However, non-rural participants in the data treatment (t = -0.174, p = 0.862) had similar Affect scale scores as non-rural participants in the control treatment.

Our treatments had limited effectiveness among rural participants as only rural participants in the anonymous written story group had lower CAMI scale scores (t = -2.174, p = 0.031) and Affect scale scores (t = -2.677, p = 0.008) compared to rural participants in the control group. Rural participants in the data treatment group, the video treatment, or the identified written story treatment group had similar levels of stigma as measured by the CAMI and Affect scales as rural participants in the control group.

Table 2
Average CAMI scores, CAMI subscale scores and Affect scale scores across treatments. P-values indicate significant differences between control group and specified treatment group.

Non-Rural

Outcome Measure		Mean (Standard Deviation)				
		Control	Data	Identified	Anonymous	Video
Community Attitudes towards Mental Illness (CAMI)	Community treatment	34.12	34.51	35.32*	35.59*	34.82
		(8.21)	(7.63)	(7.94)	(8.40)	(8.48)
	Benevolence	36.10	36.04	36.90	36.74	36.33
		(6.50)	(6.22)	(6.15)	(6.24)	(6.43)
	Authoritarianism	34.36	34.50	34.71	34.85	34.59
		(5.37)	(5.03)	(5.18)	(5.05)	(5.25)
	Social restrictiveness	36.81	37.04	37.58	38.01**	37.44
		(6.64)	(6.50)	(6.26)	(6.48)	(6.67)
	Total score	141.39	142.10	144.51*	145.20*	143.19
		(23.51)	(22.55)	(22.09)	(23.47)	(24.05)
Affect scale	Total score	50.33	50.46	51.94*	52.78**	51.57
		(11.45)	(11.38)	(10.82)	(10.90)	(11.29)

Rural

Outcome Measure		Mean (Standard Deviation)				
		Control	Data	Identified	Anonymous	Video
Community Attitudes towards Mental Illness (CAMI)	Community treatment	34.77	34.44	35.58	36.85*	35.15
		(7.97)	(7.95)	(7.58)	(7.93)	(7.95)
	Benevolence	35.85	35.74	36.31	37.13	35.88
		(7.34)	(6.24)	(5.71)	(6.60)	(6.20)
	Authoritarianism	34.74	33.93	34.03	35.65	34.26
		(5.19)	(5.06)	(4.89)	(4.75)	(4.94)
	Social restrictiveness	36.95	36.41	37.65	39.07**	37.44
		(6.40)	(6.49)	(6.45)	(6.64)	(6.15)
	Total score	142.31	140.53	143.56	148.69*	142.74
		(24.52)	(23.25)	(21.71)	(23.11)	(22.47)
Affect scale	Total score	49.85	51.19	51.19	53.52**	51.43
		(11.48)	(11.26)	(10.85)	(10.76)	(10.09)

*$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4. Discussion

In our study, we find that levels of community stigma across rural and non-rural participants are similar. Further, we find that stigma reduction interventions may not have the same effect across rurality as non-rural participants in the identified and anonymous written story treatment groups had lower stigma compared to non-rural participants in the control group but only rural participants in the anonymous written story treatment group had lower stigma compared to rural participants in the control group. This suggests that stigma intervention effectiveness differs across rurality, with stigma among rural populations being exceedingly difficult to change. This finding is consistent with other public health messaging studies that find those in rural areas may be especially difficult to influence with information (Thunström et al., 2021).

Our study has several limitations that are important to consider. First, our analysis should be regarded as exploratory, meaning we are not explicitly testing hypotheses but rather generating future questions to be answered (Varadhan & Seeger, 2013). Further, we only examine the effect of brief interventions and their short-term effects on SUD stigma. Additionally, we rely on self-reported measures of rurality which can differ from other objective measures of rurality (Castle & Tak, 2021). Finally, the goal of our study was to examine social stigma towards SUD and RH in general, as such we did not disentangle stigma towards different types of SUDs or stigma towards individuals with SUD by varying race and/or gender.

Future research should explore how different sociodemographic characteristics and geographic location of the storyteller influence the effectiveness of the story at reducing stigma and changing behavior. Other studies have found that stigma towards individuals with SUD vary based on the age, gender, and socioeconomic status of the person with a SUD (Kennedy-Hendricks et al., 2016; Sattler et al., 2017). Additionally, the likeness between participants and the storyteller may impact message effectiveness. As the source of messaging has been found to be important in other public health messaging campaigns, especially in rural areas, future research should examine if data being presented from trusted messengers could influence the effectiveness of educational interventions, as well as the delivery method (Freed et al., 2011; Okuhara et al., 2020).

Funding Sources

This article was partially supported by the U.S. Department of Health and Human Services, Health Resources and Services Administration under cooperative agreement number UD9RH33631. The views expressed in this publication are solely the opinions of the authors and do not necessarily reflect the official policies of the U.S. Department of Health and Human Services, or the Health Resources and Services Administration nor does mention of the department or agency names imply endorsement by the U.S. Government.

CRediT authorship contribution statement

Madison Ashworth: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Linda Thunström:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Grace L. Clancy:** Writing – review & editing, Conceptualization. **Robin A. Thompson:** Writing – review & editing, Supervision, Conceptualization. **David Johnson:** Writing – review & editing, Supervision, Project administration, Conceptualization. **Ernest Fletcher:** Writing – review & editing, Supervision, Project administration, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Acknowledgements

We want to thank Fletcher Group leadership and outreach and engagement specialists for their continued support of research efforts and recovery housing across the U.S. Specifically, we would like to thank Erica Walker, Janice Fulkerson, and Jennifer White for feedback on the study and Jade Hampton for sharing his recovery story.

References

Anvari, M. S., Kleinman, M. B., Massey, E. C., Bradley, V. D., Felton, J. W., Belcher, A. M., & Magidson, J. F. (2022). "In their mind, they always felt less than": The role of peers in shifting stigma as a barrier to opioid use disorder treatment retention. *Journal of Substance Abuse Treatment.* , Article 108721. https://doi.org/10.1016/j.jsat.2022.108721

Ashworth, M., Thompson, R., Fletcher, E., Clancy, G. L., & Johnson, D. (2022). Financial landscape of recovery housing in the United States. *Journal of Addictive Diseases*, 1–4. https://doi.org/10.1080/10550887.2022.2036575

Ashworth, M., Thunström, L., Clancy, G. L., Thompson, R. A., Fletcher, E., & Johnson, D. (2023). Facts and personal recovery stories to reduce substance use Disorder stigma and increase support for recovery housing. *International Journal of Mental Health and Addiction.*. https://doi.org/10.1007/s11469-023-01101-2

B, M. (2017, November 8). *NIMBY: In VA, Recovery Housing Battles Community Backlash.* Addiction Programs. https://www.addiction-programs.net/news/recovery-housing-virginia-backlash/.

Bolin, J. N., Bellamy, G. R., Ferdinand, A. O., Vuong, A. M., Kash, B. A., Schulze, A., & Helduser, J. W. (2015). Rural healthy people 2020: New decade, same challenges. *The Journal of Rural Health: Official Journal of the American Rural Health Association and the National Rural Health Care Association, 31*(3), 326–333. https://doi.org/10.1111/jrh.12116

Brown, S. A. (2011). Standardized measures for substance use stigma. *Drug and Alcohol Dependence, 116*(1), 137–141. https://doi.org/10.1016/j.drugalcdep.2010.12.005

Burgess, A., Bauer, E., Gallagher, S., Karstens, B., Lavoie, L., Ahrens, K., & O'Connor, A. (2021). Experiences of stigma among individuals in recovery from opioid use disorder in a rural setting: A qualitative analysis. *Journal of Substance Abuse Treatment, 130*, Article 108488. https://doi.org/10.1016/j.jsat.2021.108488

Castle, M. E., & Tak, C. R. (2021). Self-reported vs RUCA rural-urban classification among North Carolina pharmacists. *Pharmacy Practice, 19*(3), 2406.

Cole, J., Logan, T., Miller, J., & Scrivner, A. (2021). *Findings from the recovery center outcome study 2021 annual report.* University of Kentucky Center on Drug and Alcohol Research.

Crapanzano, K. A., Hammarlund, R., Ahmad, B., Hunsinger, N., & Kullar, R. (2018). The association between perceived stigma and substance use disorder treatment outcomes: A review. *Substance Abuse and Rehabilitation, 10*, 1–12. https://doi.org/10.2147/SAR.S183252

Freed, G. L., Clark, S. J., Butchart, A. T., Singer, D. C., & Davis, M. M. (2011). Sources and perceived credibility of vaccine-safety information for Parents. *Pediatrics, 127* (Supplement 1), S107–S112. https://doi.org/10.1542/peds.2010-1722P

French, M. T., & McGeary, K. A. (1997). Letter: Estimating the economic cost of substance abuse treatment. *Health Economics, 6*(5), 539–544. https://doi.org/10.1002/(SICI)1099-1050(199709)6:5<539::AID-HEC295>3.0.CO;2-0

Hedegaard, H. (2021). Urban-rural differences in drug overdose death rates, 1999–2019. *National Center for Health Statistics.* 10.15620/cdc:102891.

Imbens, G. W., & Rubin, D. B. (2015). Causal inference for statistics, social, and biomedical sciences: An introduction. *Cambridge University Press*. https://doi.org/10.1017/CBO9781139025751

Judd, H., Meier, C. L., Yaugher, A. C., Campbell, E., & Atismé-Bevins, K. (2021). Opioid use Disorder stigma reduction through story telling Narrative and Sharing: A qualitative review and lessons Learned. *International Journal of Mental Health and Addiction.* https://doi.org/10.1007/s11469-021-00606-y

Kelly, J. F., Greene, M. C., & Abry, A. (2021). A US national randomized study to guide how best to reduce stigma when describing drug-related impairment in practice and policy. *Addiction, 116*(7), 1757–1767. https://doi.org/10.1111/add.15333

Kennedy-Hendricks, A., McGinty, E. E., & Barry, C. L. (2016). Effects of competing Narratives on public perceptions of opioid pain reliever addiction during pregnancy. *Journal of Health Politics, Policy and Law, 41*(5), 873–916. https://doi.org/10.1215/03616878-3632230

Kennedy-Hendricks, A., McGinty, E. E., Summers, A., Krenn, S., Fingerhood, M. I., & Barry, C. L. (2022). Effect of exposure to visual campaigns and Narrative vignettes on

addiction stigma among health Care professionals: A randomized clinical trial. *JAMA Network Open, 5*(2), e2146971.

Luty, J., Umoh, O., Sessay, M., & Sarkhel, A. (2007). Effectiveness of changing minds campaign factsheets in reducing stigmatised attitudes towards mental illness. *Psychiatric Bulletin, 31*(10), 377–381. https://doi.org/10.1192/pb.bp.106.012443

McGinty, E. E., Goldman, H. H., Pescosolido, B. A., & Barry, C. L. (2018). Communicating about mental illness and violence: Balancing increased support for Services and stigma. *Journal of Health Politics, Policy and Law, 43*(2), 185–228. https://doi.org/10.1215/03616878-4303507

Mericle, A. A., Slaymaker, V., Gliske, K., Ngo, Q., & Subbaraman, M. S. (2022). The role of recovery housing during outpatient substance use treatment. *Journal of Substance Abuse Treatment, 133*, Article 108638. https://doi.org/10.1016/j.jsat.2021.108638

Mitchell, T. (2018). 1. Demographic and economic trends in urban, suburban and rural communities. *Pew Research Center's Social & Demographic Trends Project*. https://www.pewresearch.org/social-trends/2018/05/22/demographic-and-economic-trends-in-urban-suburban-and-rural-communities/.

Okuhara, T., Okada, H., & Kiuchi, T. (2020). Examining persuasive message type to encourage staying at home during the COVID-19 pandemic and social lockdown: A randomized controlled study in Japan. *Patient Education and Counseling, 103*(12), 2588–2593. https://doi.org/10.1016/j.pec.2020.08.016

Penn, D. L., Guynan, K., Daily, T., Spaulding, W. D., Garbin, C. P., & Sullivan, M. (1994). Dispelling the stigma of schizophrenia: What sort of information is best? *Schizophrenia Bulletin, 20*(3), 567–578. https://doi.org/10.1093/schbul/20.3.567

Polcin, D. L., Korcha, R., Bond, J., & Galloway, G. (2010). Eighteen-month outcomes for clients receiving combined outpatient treatment and sober living houses. *Journal of Substance Use, 15*(5), 352–366. https://doi.org/10.3109/14659890903531279

Pullen, E., & Oser, C. (2014). Barriers to substance abuse treatment in rural and urban communities: Counselor perspectives. *Substance Use & Misuse, 49*(7), 891–901. https://doi.org/10.3109/10826084.2014.891615

Rios, S. (2019). *In Tight-Knit Dorchester Neighborhood, Residents Try To Halt Sober House*. WBUR. https://www.wbur.org/news/2019/02/20/sober-houses-meetinghouse-hill-tension.

Sattler, S., Escande, A., Racine, E., & Göritz, A. S. (2017). Public Stigma Toward People With Drug Addiction: A Factorial Survey. *Journal of Studies on Alcohol and Drugs, 78*(3), 415–425. 10.15288/jsad.2017.78.415.

Taylor, S. M., & Dear, M. J. (1981). Scaling community attitudes Toward the mentally ill. *Schizophrenia Bulletin, 7*(2), 225–240. https://doi.org/10.1093/schbul/7.2.225

Thunström, L., Ashworth, M., Cherry, T., Finnoff, D., & Newbold, S. (2021). *The effect of information aimed to increase the COVID vaccine uptake, and determinants of vaccine hesitancy in Wyoming*. University of Wyoming. http://tlcherry.weebly.com/uploads/2/3/6/2/2362830/report_wyoming_covid_vaccines_final.pdf.

U.S. Department of Housing and Urban Development (HUD). (2015). *Recovery Housing Policy Brief*. 9.

Varadhan, R., & Seeger, J. D. (2013). Estimation and reporting of heterogeneity of treatment effects. *Developing a Protocol for Observational Comparative Effectiveness Research: A User's Guide*. Agency for Healthcare Research and Quality (US).