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Original Article

Community Attitudes Toward Opioid Use Disorder and Medication for Opioid Use Disorder in a Rural Appalachian County

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Abstract

Purpose: To evaluate community attitudes concerning opioid use disorder (OUD) and medication for opioid use disorder (MOUD) in a rural community, and to plan educational initiatives to reduce stigma surrounding OUD and treatment.

Methods: Dissemination of a 24-question survey to people living in a rural community followed by comparative analysis of survey results between 2 groups classified by recognition of OUD as a real illness.

Findings: Three hundred sixty-one individuals responded. Overall, 69% agreed that OUD is a real illness. Respondents recognizing OUD as a real illness were less likely to agree that individuals with OUD are dangerous ($P = .014$), more likely to agree that MOUD is effective ($P < .001$), that individuals with OUD should have the same right to a job ($P < .001$), and that naloxone should be administered for every overdose every time ($P = .002$).

Conclusions: Significant stigma exists toward individuals with OUD in rural communities, and recognizing OUD as a real illness is associated with less stigmatizing attitudes and better understanding of MOUD. Further study should focus on how to effectively convince communities that OUD is a real illness.

Key words medication for opioid use disorder, opioid response, opioid use disorder, rural, stigma.

*Both first authors contributed equally to this manuscript.

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Rural areas are significantly affected by the opioid epidemic. Between 1999 and 2015, overdose deaths in rural counties increased by 325%, with higher rates of overdose-related death occurring in rural areas than in urban areas.[1] Death and injury rates resulting from nonmedical use of prescription medications are concentrated in states with higher rural populations.[2] Emerging evidence attributes these higher rates to factors common in rural communities: increased availability of prescription opioids, adverse economic conditions, including high rates of unemployment, quicker diffusion of drugs facilitated by tight social connections common to rural settings, and the aging population.[2] Social and environmental factors at play in rural areas include higher levels of perceived stigma related to closer social connection and increased drug use in rural areas due to economic, communication, and transportation changes increasing access.[3] Evidence-based medications have been inadequately utilized in rural areas. In the United States, 60.1% of rural counties lack a physician with a DATA waiver,[4]

and 29.8% of rural Americans live in a county without an medication for opioid use disorder (MOUD)-waived provider, compared to 2.2% of urban Americans.[5] Rural physicians cite lack of confidence in their abilities to manage OUD, lack of support from mental health and other specialists, and stigma as reasons to not prescribe buprenorphine.[6]

Stigma is a sociocultural phenomenon in which specific social groups are devalued, rejected, and excluded on the basis of a socially discredited health condition.[7] Public stigma occurs when the general population endorses stereotypes about individuals with substance use disorder and chooses to discriminate against these persons. Stigma is prioritized by the Substance Abuse and Mental Health Services Administration as an essential barrier to the goal of reducing opioid overdose-related deaths.[8] Stigma, associated with opioid use disorder (OUD), in particular, has many sources, including: (1) the public attitudes that substance use disorders are under greater individual control than other health conditions; (2) the idea that individuals with OUD are responsible for their disease; and (3) the status of opioids as controlled substances.[9] A key factor increasing stigma associated with OUD is lack of understanding that OUD is a chronic, relapsing brain disease, not a moral failure, defect, or willing choice on the part of the affected individual.[10-12] Unfortunately, recognition of OUD as a treatable, chronic medical illness is still overshadowed by its perception as a moral weakness or willful choice.[13]

OUD-associated stigma can have a detrimental effect on an individual's willingness to engage in treatment, resulting in continued use, decreased self-worth, and decreased self-efficacy.[14,15] Without treatment, those with OUD are at risk for overdose. Stigma among health care providers has been shown to negatively impact care provided to those with substance use disorder.[16,17] Often, public stigma causes community resistance to evidence-based interventions, such as naloxone distribution and syringe service programs, increasing risks of overdose and infectious diseases among individuals with OUD. A study that surveyed rural Appalachian persons who inject drugs found that on average individuals reported 5 barriers to obtaining sterile syringes, including fear of arrest, embarrassment about buying needles at a pharmacy, getting hassled by pharmacy personnel, new needles being too expensive, and being seen by friends or family purchasing syringes.[18]

Residents of Appalachia are 63% more likely than the rest of the United States to die from a drug overdose.[19] Oconee County is designated by the US Census Bureau as an entirely rural, Appalachian county in the northwestern corner of South Carolina[20,21] and follows this trend. The overdose death rate in Oconee County is significantly higher than the state average: 19.7 deaths per 100,000 versus 16.7.[22] A Drug Enforcement Administration report released by *The Washington Post* indicated that a pharmacy in Oconee County receives the 4th highest number of prescription opioids in the state.[23] The number of prescription opioids dispensed between 2006 and 2012 in Oconee County was the equivalent of 76 pills per year per resident, significantly higher than the state average of 51 pills.[23] Excess availability of substances is cited by the Surgeon General as a risk factor for misuse,[24] which places Oconee County at a very high risk of experiencing even greater opioid-related mortality if the challenges of the existing opioid epidemic remain unmet.

To combat the local effects of the opioid epidemic, Oconee County Opioid Response Taskforce (OCORT) was convened. It included representatives from local law enforcement, emergency medical services, primary care practices, county administration, the school district, and the departments of health and social services. OCORT conducted a comprehensive community needs assessment, including a survey to measure stigma, unmet needs, and opportunities for interventions and educational initiatives pertinent to OUD. Researchers hypothesized that there would be a correlation between the acceptance of OUD as a chronic brain disease and stigma-related beliefs.

Methods

A 24-question/item survey was developed by Dr. Jennifer Lanzillotta-Rangeley, distributed by JBS International Technical Assistance Providers (JBS International, Inc., Bethesda, MD), and modified by the research team to better fit the target population. The OCORT Community Attitudes Survey was conducted between mid-March and mid-April of 2019. The survey was disseminated via online methods using the Google forms platform. It was distributed to the general population of the community through social media marketing on Facebook pages run by OCORT members, Prisma Health (Greenville, SC) emailing lists targeted to Oconee County ZIP Codes, and emails lists from OCORT partners. Respondents were given 1 month to complete the survey. The survey received an Institutional Review Board waiver, as the project does not constitute human subjects research in accordance with 45 CFR 46.102(e).

Descriptive statistics included frequency and percentages of survey responses. A comparative analysis was performed using Chi-square or Fisher's exact test by testing significance of difference in positive item response rates between 2 groups classified based on response to the first survey questionnaire item as to whether an OUD is a real illness; the first and second groups consisted of

Table 1 Overall Results

	N (%)	Agree (%)	Disagree (%)
An opioid use disorder is a real illness.	356 (98.6)	68.8%	31.2%
Anyone can become addicted to pain meds.	360 (99.7)	93.9%	6.1%
If a person is addicted to drugs, they can stop using if they really want to.	357 (98.8)	37.8%	62.2%
Medication-assisted treatment (Vivitrol or Suboxone and counseling) is an effective OUD treatment.	336 (93.1)	70.8%	29.2%
Abstinence-based therapies are the only successful form of treatment for SUDs.	341 (94.5)	34.6%	65.4%
Individuals who receive rehabilitation or treatment will just overdose again.	343 (95)	12.0%	88.0%
I would willingly live in the same neighborhood as an individual with an opioid use disorder (OUD).	339 (93.9)	50.7%	49.3%
Opioid use disorder only affects individuals with low incomes.	358 (99.2)	0.8%	99.2%
I can easily spot an individual with an OUD.	353 (97.8)	12.5%	87.5%
I would be embarrassed to tell people that someone close to me has an OUD.	357 (98.9)	22.1%	77.9%
Individuals with OUD are likely to be dangerous.	353 (97.8)	44.5%	55.5%
An individual with an OUD should have the same right to a job as everyone else.	353 (97.8)	45.3%	54.7%
It is important for individuals with an OUD to be part of a supportive community.	356 (98.6)	94.4%	5.6%
I would willingly administer naloxone to a stranger in any overdose situation.	348 (96.4)	73.3%	26.7%
Naloxone should be administered to every individual who is experiencing an overdose, every time.	342 (94.7)	55.0%	45.0%
There should be a limit to how many times an individual can receive naloxone for an overdose.	341 (94.5)	37.0%	63.0%
Emergency naloxone should be placed in public places for emergency response to overdose.	338 (93.6)	45.9%	54.1%
The county is at risk for an HIV and/or HCV outbreak.	329 (91.1)	72.0%	28.0%
Harm reduction services, such as HIV testing, condom distribution, and syringe exchange, encourage drug use	343 (95)	22.5%	77.6%
I would support harm reduction services in Oconee County.	N	Support (%)	Don't (%)
HIV and HCV screening	361 (100)	81.7%	18.3%
Condom distribution	361 (100)	69.8%	30.2%
Syringe exchange	361 (100)	49.3%	50.7%
Medication-assisted therapy services	361 (100)	73.7%	26.3%
	N	Yes (%)	No (%)
My doctor or nurse practitioner has offered to test me for HIV/HCV.	347 (96.1)	21.9%	78.1%

(*Continued*)

respondents who agreed and those who disagreed, respectively. Differences in any positive item response rates with a 2-sided P value $< .05$ were declared statistically significant. All statistical analyses were conducted using SAS 9.4 (SAS Institute Inc., Cary, NC).

The primary positive response rate to be tested between the 2 groups was the rate of "agree" responses to the item concerning the effectiveness of MOUD. Statistical power analysis revealed that a total sample size greater than or equal to 300 would have greater than 90% statistical power to detect a minimum 20% point between-group difference in the primary rate at a 2-sided significance level of .05 even if the sample sizes might be unbalanced as much as 7:3 between groups.

Results

Three hundred sixty-one residents responded to the survey. The margin of error was at largest 5.2%, defined as one half of the width of a 95% confidence interval. Rates of missing responses ranged from 0% to 8.9% across all 24 items. The survey utilized the term "medication assisted treatment" and "MAT," so results are reported using this terminology.

Overall Results

Overall, 68.8% of respondents agreed that an OUD is a real illness (Table 1). Approximately half (50.7%) of respondents would willingly live in the same neighborhood as someone with an OUD, 44.5% of respondents agreed that individuals with OUD are likely to be dangerous, 54.7% believed that individuals with OUD should not have the same right to a job, 45.0% of respondents

Table 2 Comparative Analysis

		An opioid use disorder is a real illness		
		Agree	Disagree	*P* value
Anyone can become addicted to pain meds.	Agree	96.3%	88.3%	.004
	Disagree	3.7%	11.7%	
If a person is addicted to drugs, they can stop using if they really want to.	Agree	27.6%	60.4%	<.001
	Disagree	72.4%	39.6%	
Medication-assisted treatment (Vivitrol or Suboxone and counseling) is an effective OUD treatment.	Agree	80.4%	51.4%	<.001
	Disagree	19.3%	48.6%	
Abstinence-based therapies are the only successful form of treatment for SUDs.	Agree	27.8%	49.1%	<.001
	Disagree	72.2%	50.9%	
Individuals who receive rehabilitation or treatment will just overdose again.	Agree	10.3%	15.7%	.151
	Disagree	89.7%	84.3%	
I would willingly live in the same neighborhood as an individual with an opioid use disorder (OUD).	Agree	56.8%	39.6%	.005
	Disagree	43.7%	60.4%	
Opioid use disorder only affects individuals with low incomes.	Agree	1.2%	0%	.555
	Disagree	98.8%	100%	
I can easily spot an individual with an OUD.	Agree	13.0%	11.8%	.763
	Disagree	87.1%	88.2%	
I would be embarrassed to tell people that someone close to me has an OUD.	Agree	23.6%	18.0%	.242
	Disagree	76.5%	82.0%	
Individuals with OUD are likely to be dangerous.	Agree	40.0%	54.1%	.014
	Disagree	60.0%	45.9%	
An individual with an OUD should have the same right to a job as everyone else.	Agree	52.5%	29.1%	<.001
	Disagree	46.5%	70.9%	
It is important for individuals with an OUD to be part of a supportive community.	Agree	97.1%	88.2%	<.001
	Disagree	2.9%	11.8%	
I would willingly administer naloxone to a stranger in any overdose situation.	Agree	78.1%	62.4%	.002
	Disagree	21.9%	37.6%	
Naloxone should be administered to every individual who is experiencing an overdose, every time.	Agree	60.5%	42.1%	.002
	Disagree	39.5%	57.9%	
There should be a limit to how many times an individual can receive naloxone for an overdose.	Agree	31.2%	49.1%	.002
	Disagree	68.8%	50.9%	
Emergency naloxone should be placed in public places for emergency response to overdose.	Yes	53.7%	29.0%	<.001
	No	46.3%	71.0%	
My doctor or nurse practitioner has offered to test me for HIV/HCV.	Yes	24.9%	16.5%	.084
	No	75.1%	83.5%	
Harm reduction services, such as HIV testing, condom distribution, and syringe exchange, encourage drug use.	Agree	19.3%	29.9%	.030
	Disagree	80.7%	70.1%	
I would support HIV and HCV screening in Oconee County.	Support	86.5%	72.1%	.001
	Don't	13.5%	27.9%	
I would support condom distribution in Oconee County.	Support	72.7%	64.9%	.137
	Don't	27.4%	35.1%	
I would support syringe exchange in Oconee County.	Support	57.1%	33.3%	<.001
	Don't	42.9%	66.7%	
I would support medication-assisted therapy services in Oconee County.	Support	83.3%	55.9%	<.001
	Don't	16.7%	45.1%	
The county is at risk for an HIV and/or HCV outbreak.	Agree	74.9%	65.0%	.067
	Disagree	25.1%	35.0%	

believed that naloxone should not be administered for every overdose, and 54.1% of people disagreed that naloxone should be readily available in public places. Nonetheless, 70.8% of respondents believed that MAT is an effective treatment.

Comparative Analysis

As seen in Table 2, respondents who agreed that OUD is a real illness were more likely to: agree that MAT is an effective OUD treatment (80.4% vs 51.4%, $P < .001$), willingly live in the same neighborhood as an individual with OUD (56.8% vs 39.6%, $P = .005$), agree that individuals with OUD should have the same right to a job (52.5% vs 29.1%, $P < .001$), believe that it is important for individuals to be part of a supportive community (97.1% vs 88.2%, $P < .001$), agree that emergency naloxone should be placed in public places for emergency response to overdose (53.7% vs 29.0%, $P < .001$), believe that anyone can become addicted (96.3% vs 88.3%, $P = .004$), agree that naloxone should be administered to everyone experiencing overdose every time (60.5% vs 42.1%, $P = .002$), and administer naloxone to a stranger in any overdose situation (78.1% vs 62.4%, $P = .002$).

On the other hand, those who agreed that OUD is a real illness were less likely to believe that a person who is addicted to drugs can stop using if they really want to (27.6% vs 60.4%, $P < .001$), or that individuals with OUD are dangerous (40.0% vs 54.1%, $P = .014$).

Respondents who agreed that OUD is a real illness were also more likely to support harm reduction services, such as HIV/HCV screening (86.5% vs 72.1%, $P = .001$), syringe exchange (57.1% vs 33.3%, $P < .001$), and MAT services (83.3% vs 55.9%, $P < .001$).

Table 3 Community Strategies

Increase Access to Treatment
• Care Support Team Model for wraparound services
• Increase the number of PCPs waivered to prescribe MOUD
• Train recovery coaches
• Provide treatment in detention center
Educational Initiatives
• Community Library Series
• School events
• Highlight individuals in recovery and their stories
• School-based curricula for middle school and high school for prevention-based messaging
• Naloxone distribution and education
• Create a social media platform
• Academic detailing for prescribers
Increase Recovery Resources
• Provide case management support to drug court participants
• Increase access to peer support
• Provide opportunities for long-term mentorship addressing the social determinants of health
• Provide resources and referrals to job training opportunities

Discussion

To date, this survey is the first of its kind and offers insight into the attitudes of people living in rural communities toward individuals with OUD. Strong correlations were found between stigma-related beliefs and viewing OUD as a chronic disease. Viewing OUD as a chronic disease is significantly associated with positive opinions about MOUD, naloxone, syringe exchange programs, and other harm reduction efforts, and the belief that individuals with substance use disorder have the same rights to employment, housing, and personal dignity.

These findings suggest that educational efforts may be effective at increasing the number of community members who understand that OUD is a chronic disease, which correlates with decreased stigma. Overcoming stigma and gaining community buy-in for efforts at prevention, treatment, and recovery plans is a vital step to successful intervention in rural communities. Contact-based educational activities, in which the public interacts with individuals in recovery, have shown evidence for effectiveness.[25] Involving persons who are in recovery in education efforts allows for modeling of recovery, which helps other individuals recognize the merit and effectiveness of treatment.[26] Research has shown that public attitudes can be improved by portraying stories of people with successfully treated drug addiction as a means of public education.[27]

OCORT has created a 5-year strategic plan for the community, which includes plans to increase MOUD access, provide opportunities for student, parent, and community education, and increase the recovery resources and recovery capital available to persons with substance use disorder and OUD in the community (Table 3). OCORT plans to repeat a community survey in 3 years, to test whether any progress has been made toward reducing stigma as a result of the taskforce's intervention, and whether specific educational interventions are effective in reducing stigma.

Stigma is just one of several barriers to OUD treatment. Other important barriers include patient financial constraints,[28] lack of perceived need for treatment among those with OUD,[29] and lack of access to substance use treatment.[4] These barriers must also be addressed as communities attempt to respond adequately to the opioid epidemic.

Limitations

Limitations include the fact that no demographic information was collected. While this shortened the survey and may have increased the response rate, it limits the ability to conduct further analyses of attitudes within this rural community. Survey distribution was also limited to individuals with broadband Internet access, as well as those on specific email lists and social media platforms, which may have introduced sampling error. The survey question regarding the effectiveness of MOUD only listed Vivitrol and Suboxone as medication options, and it neglected to mention methadone as a medication to treat OUD. The survey also grouped Vivitrol and Suboxone together in this question, thus failing to gather potentially useful data regarding perceived effectiveness of the 2 individual medications. Additionally, the survey terms were not defined for respondents, which could have confounded the data.

Conclusions

This survey of a rural Appalachian community shows that significant stigma toward individuals with OUD exists, leading to diminished effectiveness of policies and strategies aimed at treating and preventing OUD. Stigma is significantly lower in those who believe that OUD is a chronic illness, suggesting a possible avenue to stigma reduction through effective education. Further study is needed to determine whether educational strategies can effectively increase the proper perception of OUD.

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