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Exploring Stakeholder Attitudes Towards Tobacco 21

Implementation, Enforcement, and Outcomes

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Abstract

Objectives: This qualitative study seeks to assess the impact of the federal Tobacco 21 (T21) law by analyzing data collected from a nationwide sample of key tobacco control stakeholders towards the implementation, enforcement, and outcomes of the T21 law. **Methods:** A series of five focus groups were conducted in December 2021 with stakeholders (n=31) who were asked about T21 implementation and enforcement measures used in their own communities.

Participating stakeholders included tobacco policy experts, tobacco evaluation experts, subject matter experts, and implementation personnel. **Results:** We conducted a thematic analysis of the data resulting in eight themes found under four broad topics. Stakeholders are using a variety of strategies to implement T21 in their communities, however there are significant barriers towards T21 implementation. State and local enforcement of T21 varies depending on locality throughout the nation. Stakeholders believe that while T21 has the potential to reduce health disparities, they are also concerned that it may have unintended consequences which may exacerbate inequities. Stakeholders believe that changes in implementation and enforcement can increase T21's impact.

Conclusions: T21 implementation and enforcement policy varies based on locality. Policy changes to strengthen federal, state, and local efforts are needed to reduce barriers and unintended outcomes of the T21 law.

Key Words: Tobacco 21, implementation, enforcement, compliance, equity, focus group

The federal Tobacco 21 (T21) law which raised the minimum legal age of sale (MLSA) of any tobacco product from 18 to 21 years old was signed in December 2019. As a result of tireless efforts from an influential grassroots “T21 Movement”, localized T21 laws were adopted prior to the national law in 19 U.S. states, the District of Columbia, two U.S. territories, and over 540 localities. The National Academy of Sciences estimates that the federal T21 law will prevent 223,000 deaths by delaying youth tobacco use initiation (Bonnie et al., 2015; Campaign for Tobacco-Free Kids, 2019; Marynak et al., 2020; Reynolds et al., 2019).

Most existing scholarship on T21 implementation, enforcement, and outcomes have centered around state and locally based T21 implementation efforts (Ali et al., 2019; Friedman & Wu, 2019; Hudson et al., 2021; Macinko & Silver, 2018; Roberts et al., 2022; Silver et al., 2015; Zhang et al., 2018). Coming from this body of prior research, there is concern that the potential public health benefits of the T21 law are weakened due to deficiencies in enforcement measures such as no increase in identification checks after the law was enacted, unstandardized or unenforced penalties when retailers are found in noncompliance, and the need for local control to act as a supplement to federal enforcement efforts (Dobbs et al., 2021; Macinko & Silver, 2018; Winickoff, 2018). Additionally, there are concerns that federal T21 enforcement through the U.S. Food and Drug Administration (FDA) and the Substance Abuse and Mental Health Services Administration (SAMHSA) are insufficient. In a systematic review of validity efforts to improve tobacco retail compliance checks, Lee et al. (2016) have noted, “SYNAR implementation has been mixed and funding dedicated to program implementation lacking.” Established in each state, the SYNAR program conducts retail compliance checks and reports annual retail violation rates per state. Additionally, other research has shown that the FDA is “neither assessing penalties in a timely fashion nor escalating penalties to the fullest extent of the law” (Hemmerich

et al., 2021). Further research has found that MLSA restrictions are “not likely to be effective without significant age-verification requirements and increases in the number of and frequency of compliance checks that the FDA conducts” (Roeseler et al., 2019). Such critiques have given rise to policy and practice suggestions.

To improve the outcomes of T21, researchers have developed a growing body of literature on best practices, assessment tools, and model T21 policies. Best practices to minimize underage sales to minors cover a wide range of implementation and enforcement factors, including having a state-mandated enforcement plan, supervision from a state agency, funding from the state to complete enforcement measures, merchant education, and penalties for law violations (DiFranza, 2005). Suggestions for model T21 policy include the need to provide a comprehensive definition of tobacco products (a definition that includes e-cigarettes, individual components of tobacco products, and other derivatives from tobacco or nicotine), required signage that state that the MLSA is 21, create a tobacco retail licensing program (if applicable), mandate a minimum number of retail compliance checks, penalize the retailer rather than the clerk if found in noncompliance, penalize violations as a civil rather than criminal offense and allow localities to make stricter tobacco control policies (Dobbs et al., 2021; Tobacco 21, 2019). To begin assessing adherence to model policies across the nation, Dobbs et al. have created a T21 policy assessment tool to evaluate the language used in state T21 implementation and enforcement policies (Dobbs et al., 2019). As the federal law does not mandate specific enforcement measures, such as the number of times a retailer is checked, more research is needed to understand how to best strengthen the T21 law across the nation to reach T21’s maximum effect.

Along with the overall impact on underage tobacco use, T21's potential impact on health equity has also been the subject of an emerging body of research. While the "piecemeal passage of T21 laws at the local and state levels was cause for concern from a health equity perspective," researchers note that the national T21 law has the potential to reduce tobacco use disparities throughout the nation (Colston et al., 2020). Although the federal T21 law does not include provisions about Purchase, Use, and Possession (PUP) laws, which penalize minors for possession of a tobacco product, nor how states enforce T21 under civil or criminal law, both areas are causes for concern in terms of exacerbating inequities among communities that have been historically over-policed and have disproportionate levels of tobacco use (Tobacco 21, 2019). Additional research is needed to identify areas where T21 can reduce tobacco use disparities and minimize unintended consequences that may exacerbate inequities.

While great strides are being made in the attempt to strengthen T21, more research is needed to understand the barriers experienced by stakeholders to implement and enforce T21 in their localities. Voices of stakeholders are necessary for understanding the unique challenges faced in each locality. The purpose of this study is to add to the existing literature on T21 implementation, enforcement, and outcomes by exploring the attitudes of nationwide group of T21 stakeholders.

Methods

This qualitative study used focus groups to explore stakeholder attitudes and knowledge of T21 implementation, enforcement, and outcomes. This study was approved by the University of Nebraska Medical Center Institutional Review Board (IRB #0466-21-EX).

Sample Recruitment

To ensure that the sample included T21 stakeholders with knowledge of and experience with the federal T21 law, we used a purposive sampling strategy in this study. Individuals who identified as stakeholders in one or more of the following categories were invited to participate in the study: policy experts, evaluation experts, subject matter experts, and implementers (See Appendix 1). Participants were recruited through email and were invited to participate in a virtual focus group using video conferencing software. To identify stakeholders, our research team conducted an online search for prominent national tobacco control conferences and symposiums, collecting email contact information from individuals who had presented or attended. Our team sent 1,279 initial invitation emails, asking participants to first complete a survey on their opinions of various tobacco control policies. Participants were also asked to report demographic information, including the stakeholder category that they identified as. If there was no response, we sent one follow-up invitation to participate in the survey. At the end of each survey, participants were invited to participate in a follow-up focus group to discuss their attitudes on Tobacco 21 implementation, enforcement, and outcomes. Participants who indicated their interest in participating in a focus group were scheduled for a time to participate.

Focus Group Procedure

Five focus groups were held throughout the course of two weeks in December 2021, each lasting approximately one hour. Of the initial 34 individuals who signed up to participate in a focus group, 31 participants attended with a median focus group size of six. Participants represented a variety of Tobacco 21 stakeholder categories and geographic locations within the United States (See Table 1). Focus groups were conducted using virtual video conferencing software. Discussions were facilitated by two trained members of the research team (DC and SW) using a semi-structured interview protocol to guide discussion (See Appendix 2). Two to

three additional members of the research team were present during each focus group to take notes to ensure data collection quality and provide additional follow-up questions to participants. Signed informed consent was obtained from each participant prior to the focus group. To maintain the quality of the audio recording, participants were asked to speak one at a time. All study materials and focus group discussions were held in English. Participants received a \$40 Visa gift card for participation. After the five focus groups, members of the research team present during the focus groups (DC, DD, SW, KS) agreed that saturation had been met for each question and no further participants would be recruited for the study.

Analysis

All focus groups were recorded and transcribed by a professional third-party transcription service, *Transcribe Me*. To ensure the quality of the transcription, a research team member (SW) checked each transcription for accuracy, re-reading through each while watching recordings of each focus group. Minimal changes to correct spelling or instances of cross-speak were made. After transcription, two members of the research team (SW and KS) read through each transcript to develop an initial codebook for themes. Afterwards they independently coded all transcripts and returned to review each for agreement, resolve inconsistencies, and develop an updated codebook. A member of the research team (SW) completed another coding pass using the updated codebook to conduct a thematic analysis of the data. These themes were presented to other members of the research team (DD, DC, AR, KK) to discuss and prove or disprove evidence for each. To report the themes developed, as well as conflicting viewpoints, we employed the Consolidated Criteria for Reporting Qualitative Research (COREQ) framework (see Appendix 3) to develop a summary of the findings.

Results

A total of 31 stakeholders from across the nation participated in five online focus groups in December 2021. Participants represented a total of 16 different U.S. states (see Table 1) with the highest percentage of participant representation from Nebraska (32.3%) and Missouri (16%). Participants had the option to self-identify in more than one T21 stakeholder category. As a result, 17 participants identified as a subject matter expert, 12 as policy experts, five as evaluation experts, four as implementation staff, and four as “other”.

[Insert Table 1 here]

Analysis of themes found in each focus group resulted in a total of eight themes focused on four topical areas: (1) T21 implementation, (2) T21 enforcement, (3) T21 outcomes, and (4) recommended changes. Each theme is presented under the larger topic in a separate table (Appendix A).

Topic 1: Tobacco 21 Implementation

Table 2 shows two themes associated with T21 implementation with quotes that represent stakeholder attitudes.

Current T21 education and awareness strategies

Participants reported a variety of strategies used to raise awareness and educate about the passage of the federal T21 law. Stakeholders described using both passive and active strategies to reach this goal. We define passive strategies as strategies that require minimal to no contact (face-to-face or virtual) with retailers or the public, and active strategies are those that require direct or virtual contact with retailers or the public. Stakeholders discussed using passive strategies such as posting and distributing signage to tobacco retailers indicating that the age had been changed to 21 years old, disseminating toolkits developed for retailers with written

educational material, and sharing other types of printed materials, such as brochures. A participant gave an example of one such toolkit saying:

And it's called a Tobacco 21 toolkit...the kit is a way to remind the store clerk. Well, the store owner, to remind his clerks to check for IDs. It's got ID pins. It's got frequently asked questions about tobacco, and about Tobacco 21. If there are any misconceptions about the law. It's got some signage.

Active strategies described in the focus groups included retailer education efforts and attempts to directly reach out to tobacco retailers. Retailer education efforts were varied in terms of how education program were delivered, when they were offered, and by whom. Stakeholders named local health departments, local governmental offices, and local law enforcement agencies as the organizations responsible for retailer education in their respective communities. Stakeholders also reported that signage and other materials were given to retailers as a part of their educational efforts, supplementing their efforts with additional reminders. One participant reported retailer education efforts and collaboration in their community describing a retailer education program in their state that also uses supplemental material after the program:

So our department of revenue and department of public health and environment have collaborated for a fair amount of time, years actually, around merchant education. They send signs, they send age calculators, they have a how-to website. The department of revenue's tobacco website has all the laws.

There are significant barriers to T21 implementation

Funding and Resource Limitations.

While stakeholders are using a variety of strategies to implement T21 in their communities, they reported several barriers that impeded their progress. Stakeholders cited funding and resource limitations as a common barrier to implementation of T21 implementation in their communities for both the passive and active strategies mentioned above. One stakeholder explained the difficulties of getting resources to implement T21 in their own community saying:

I would love to see something that's coming down from either FDA, CDC, or state health department or state tobacco controls. Coming down to the communities, saying, "Hey, here's a nice little packet that you can take out. Here's how you have those conversations." And less of, "Yeah, it's your community, you figure out what they want to know." Because there's not enough resources down at the local level.

Lack of State Tobacco Retail Licenses.

Stakeholders also discussed the lack of a state-wide licensing system as a common barrier to T21 implementation as stakeholders were unable to access a comprehensive list of tobacco retailers in their area. This proved problematic to stakeholders as they then had to compile and rely on lists of retailers that were often incomplete or possibly outdated due to fluctuation in the market. One stakeholder described this challenge saying:

So the FDA kindly agreed to send a digital age-verification calendar to every outlet in the state. So I provided them with our best retail list. Again, it's imperfect because we don't have a license law.

Accessibility and Format of Retailer Trainings.

Challenges associated with tobacco retailer education efforts included accessibility and format of retailer training. Stakeholders described a need for virtual or digital options in addition to in-person training. Business owners were challenged with high employee turnover rates and ensuring adequate training for their staff. Virtual or digital options could be helpful. As one stakeholder put it:

So maybe there is a need to produce an education video or some kind of education that retailers can use with all the new clerks that they're constantly hiring that may work there two weeks and then go to another job, and they've got to replace that employee.

When online training was available, however, stakeholders also noted that retailers were facing issues with engagement and accountability, stating that it was difficult to tell if the employees were engaging with the material or simply clicking through each section. A final

challenge discussed in retailer training was a lack of business owners expressing the importance of tobacco retail training to their employees. One stakeholder described this challenge saying:

My takeaway on that is merchant education can be effective if the store owners make it part of their culture and stress that importance to their employees. That is the biggest challenge in my work is trying to create that spark on the owner to get them to make it part of their store policy. It unfortunately doesn't happen as much as I would like it to.

To address these barriers, stakeholders outlined suggested changes to retailer education policy, which is further described in Topic 4: Recommended Changes from Stakeholders.

Competing State and Local Laws.

Another significant barrier described by stakeholders as a barrier to T21 implementation were the complexities caused by competing state and local laws regarding MLSA. Several stakeholders lived in a state in which the state tobacco MLSA was under the age of 21, typically 18 years old, which created confusion for the public, tobacco retailers, and stakeholders themselves. One stakeholder gave an example of this stating:

And we did face a problem in that at first- and we still face it- where, by state law, we still have to hand out the 18 signs because our state law hasn't been updated yet. And so we did this—and by state law, technically, all the retailers still had to post those 18 signs. And that was a huge barrier for us.

In addition to issues with signage, competing state and local laws also created confusion as stakeholders described instances in which communities believed that state and local laws overruled the federal T21 law. As one stakeholder described:

And I felt like one of the things we noticed was there was a lot of that confusion because Nebraska felt very strongly that we were just going to-- state law superseded federal. So they said, "We had just moved it to 19. They can't tell us what to do, so we're going to stay at 19."

Lack of Awareness and Education Among the General Public.

A final implementation barrier described by stakeholders was a lack of awareness and

education of the T21 law among the general public. Stakeholders noted that there were limited efforts towards creating public-facing communications about T21. As one stakeholder noted about the federal T21 law:

And I'm just like, 'Oh, it's still in the works,' because I haven't heard anything just from a general public perspective the little bit of social media or TV that I do watch. I don't see any commercials, or advertisements, or anything that's like, "Hey, guys. This is the new thing. You have to be 21 to purchase a tobacco product." And so I don't feel like the message is out there.

Topic 2: Tobacco 21 Enforcement

Table 3 shows three themes associated with Tobacco 21 enforcement with example quotes from stakeholders.

Current enforcement measure protocols

Discussion around current enforcement protocols focused on retail compliance check protocols and penalties when a retailer was found to be in violation of the T21 law. As stakeholders represented a diverse array of communities, responses were varied in terms of compliance check protocols. The ages of cooperating individuals (also referred to as “decoys” by some stakeholders) to conduct retailer compliance checks varied greatly by community. Some stakeholders reported cooperating individuals as young as 15 years old were used to conduct compliance checks, while others reported having compliance check protocols that utilized individuals aged 18 to 20 years old.

The frequency and distribution of retail compliance checks differed by community as well. Stakeholders reported annual, biannual, and monthly compliance checks in their communities. Recurring visits for retailers found in non-compliance also depended on locality.

One stakeholder from Colorado outlined their retail compliance policy stating:

I think Colorado might do it twice a year, there's a handful of states that do twice a year, once a year minimum with a 24 to 36 month look-back period.”

At the same time, stakeholders from other localities reported not having a “look-back” policy, a policy in which an establishment that has had a prior violation is monitored for future violations and issued more severe penalties for repeat violations. Policy regarding frequency and distribution of checks included planned routes that reduced mileage for enforcement personnel, checking all retailers within a jurisdiction, or checking a sample of all retailers within an enforcement agency’s jurisdiction.

Agencies tasked with conducting retail compliance checks depended on locality as well. Agencies mentioned in our focus groups included local law enforcement agencies, local health departments, local anti-tobacco coalitions, FDA contracted partners, and Synar reporting agencies through SAMHSA. While each state had FDA contractors and Synar reporters, state and local agencies varied. An example from a Missouri stakeholder who explained:

In the state of Missouri, we do-- each prevention resource center does the Synar Compliance Survey to a [random] sample of businesses within our region. And then, we just submit the-- our findings and our compliance rate to the state. After that, there's supposed to be some follow-up with ATC to do actual compliance checks at that point where they can hand out fines or warnings. But we only have in the state of Missouri I think six agents to cover the entire state. We don't have a lot of funding for it. So more time-- more times than not, they don't really get done. So it's up to local law enforcement to do those compliance checks

Complications to current enforcement measures brought about by the COVID-19 pandemic were commonly mentioned by stakeholders as protocols were changed due to the pandemic. Stakeholders mentioned that due to COVID-19 complications, including lack of cooperating individuals, staffing, resources, and budget shortages, compliance checks were delayed or cancelled. As one stakeholder described:

But part of it was also that there had been no inspections on any of the retailers because of COVID, so there was no enforcement efforts. Retailers, for whatever reason, they got lax. And so when we started them up, boom.

Penalties for non-compliance or retail violations were also dependent upon locality. Current penalties reported included monetary penalties given to business owners and clerks, loss or temporary suspension of tobacco retail license, or diversion programs in lieu of a monetary penalty.

There are several emerging areas of enforcement that present major challenges

Stakeholders described two emerging issues as major challenges in T21 enforcement: vape and tobacco shops and online sale of tobacco products. Vape and tobacco shops are a concern for T21 stakeholders for several reasons, including differences in regulation of these shops. As one stakeholder explained:

But our Synar visits and our tobacco merchant education does not—if you took it to a vape shop that only sells electronic cigarettes, which we do not visit them as a tobacco merchant retailer, because in Missouri, electronic cigarettes are not regulated like other tobacco products.

One stakeholder explained another phenomenon in which some shops were evading FDA penalties by selling their businesses. The stakeholder explained this phenomenon saying:

So especially under the FDA thing, one thing we've noticed as a practical effect with the FDA penalties, they go up to like \$11,000. We've seen a lot of, unfortunately, our bad actors in Arizona are smoke shops or vape shops. And we've seen that if the penalties go so, so high like over 2,000, \$5,000, they, quote-unquote, "sell the business" to their cousin or their brother and change their LLC and completely avoid that financial liability.

While tobacco shops are not new, inconsistencies with how e-cigarette products are regulated in certain localities, along with new trends in evading penalties for non-compliance, are emerging concerns for T21 enforcement.

Online tobacco sales, including the use of social media, was another emerging concern that stakeholders believed to be an important issue in the enforcement of T21. Stakeholders commented on the relative ease and access of tobacco purchases for youth and reported limited

gate-keeping procedures in the online space, including both online retailers and on social media, to verify the purchaser's age. As one stakeholder explained:

Currently, in social media, they don't have age gatekeeping procedures. So the age gatekeeping procedures should be required and added to the promotion posts for those tobacco companies.

Another concern associated with the online sale of tobacco was the complexity introduced by the online space in terms of who is responsible for enforcing MLSA and how such measures should be enforced. As one stakeholder explained:

The online space begins to transcend municipal boundaries and begins to undermine and skirt any sort of regulatory prohibitions on sales, and I think that's a regulatory challenge because for the retailer that is in a jurisdiction that has some sort of age or flavor ban, to make sure that their online sales are happening, but also how do you control retailers or sale of prohibited products from an outside vendor? And I think that is a regulatory issue that's hard to wrap our minds around until you have – especially if you have subnational laws, and then even to deal with the whole question of international sales. So I think those are the kinds of issues that my colleagues have been looking at that I don't know that we have good answers for at this point.

Current FDA and SYNAR compliance efforts are insufficient to enforce T21

When discussing federal efforts to enforce T21, stakeholders believed that current efforts through the FDA and the SAMHSA Synar program were insufficient as their efforts were largely siloed in communities and the frequency, pattern, and penalties associated with their compliance check policy were inadequate. Stakeholders reported a disconnect between the FDA's enforcement efforts with other agencies involved in T21 enforcement. As one stakeholder explained:

We have some coalitions, again that have tried to dedicate grant funding to doing their own because there's such a problem with the lack of compliance checks that happen. But, again, in the last couple of years with the FDA conducting them, there have been more. But that is really separated from the rest of the prevention and enforcement world with the coalition world.

Stakeholders believed that frequency, pattern, and penalties associated with the FDA and Synar retail compliance checks were not adequate to enforce T21. When asked about current FDA efforts to conduct retail compliance checks, one stakeholder explained that the system did not match the current needs of their community saying:

If you have a system setup like the FDA, where it's so rigid, and then like, "Okay, and you must have follow ups on this one within this time." And then if you've inspected this once in the past year you must not go to them again. They have all these very rigid protocols and I think that doesn't allow for addressing the reality of what's actually happening in the field.

Stakeholders believed that penalties were rarely issued by the FDA, and if issued, punitive efforts were not sufficient to deter future violations. One stakeholder stated that because of this, the onus of enforcement was placed upon state organizations saying:

Yeah, the FDA checks, in my opinion, nobody gets in trouble by the FDA when it comes to tobacco sales. I mean, it's really weak. It's really on the states to actually enforce it and protect their communities.

Topic 3: Tobacco 21 Outcomes

Table four shows one major theme centered on health equity emerging from discussions around the outcomes of the T21 law.

Stakeholders are concerned about the potential implications of T21 on health equity

While some stakeholders believed that T21 had the potential to reduce health disparities among groups that have been disproportionately affected by tobacco use by reducing youth tobacco initiation, other stakeholders expressed concern that T21 may have an unintended consequence of exacerbating discriminatory profiling of historically over-policed and systematically marginalized groups. While the federal T21 law does not have provisions for Purchase, Use, and Possession (PUP) laws, which penalize under-age buyers of tobacco products, stakeholders were concerned that localities that do have state and local PUP laws

would see an exacerbation of enforcement-based profiling in the wake of the T21 law. As one stakeholder explained:

I will say the thing that I'm most concerned about with enforcement is it seems like some policymakers when they were writing up this legislation thought it would make the law more impactful to include purchase, use, and possession provisions in tobacco 21 laws. And that essentially puts the onus on at least partially on the user, under 18 individuals that are using tobacco products. If there's any type of fine or punishment or police presence in terms of enforcing that, I think that could have considerable health equity implications considering the police state in America where police disproportionately are likely to pull over Black and Brown individuals or individuals of lower socioeconomic status.

In addition to this concern, stakeholders stated that the way penalties are enforced could also have considerable impacts on equity, stating that T21 penalties should be enforced as a civil issue, rather than criminal. In response to whether T21 could help reduce health equity, one stakeholder explained:

I'd say yes if the law is designed to be a civil issue and not a criminal issue. And again, I know I keep harping on it. I think if the penalty is on the retailer and not on the purchaser, it can help, but if it's designed to penalize kids who make attempts or have possession, then it's going to cause issues between the police and kids in marginalized communities that will have another reason to be targeted.

Topic 4: Recommended Changes from Stakeholders

Table 5 displays two themes under the larger theme of recommended policy and procedural changes from stakeholders.

Stakeholders believe that changes in implementation and enforcement protocol are needed

When asked about what changes are needed to improve T21 implementation and enforcement, stakeholders gave several suggestions pertaining to retail compliance check protocols, retailer education efforts, and public engagement with T21. Stakeholders had mixed opinions on the frequency of retailer compliance checks, however, the majority cited that two or three times a year would be sufficient. Training and presentation of cooperating individuals were

also discussed as stakeholders believed that the individuals completing the checks needed to change from year to year and carry fake IDs. Stakeholders were also split on the pattern of compliance checks as some advocated for random checks, while others advocated for propensity-based checks or more frequent checks for retailers near youth-serving institutions, such as schools. When asked who they thought should complete retail compliance checks, several stakeholders reported that local health departments would be the ideal, however, in order for this to be effective, they would need to have authority to issue penalties.

Concerning retail education efforts, stakeholders believed that current efforts are not tailored to the retailer and in order to be more effective, retail education must meet the needs of individual retailers based on the type of store and location. A stakeholder explained this need stating:

... having more understanding of individual needs of different retailers. We see that also in our area with vape retailers versus traditional tobacco retailers, but also with our varying needs, whether they're a QuikTrip or a mom-and-pop shop, or if they're rural versus our urban areas. It's very, very different what they're needs are, and we have rural areas that are begging for information on how to check for fake IDs, they're dealing with fakes in an amazing amount.

A final change that stakeholders mentioned was the need to engage and increase enforcement agency and community buy-in for the T21 law. Stakeholders believed that efforts to engage and educate enforcement agencies and communities about the importance of the T21 law was important.

Stakeholders believe that penalties for retail violations should be effective

Throughout each focus group, stakeholders expressed that penalties for retail violations needed to be effective deterrents and provided suggestions of what they believed would be the most effective. In areas where tobacco retail licenses are issued, stakeholders believed that an effective policy would be to suspend the license in first offense and then revoking the license in

the case of repeat offenses. In terms of monetary penalties, stakeholders believed that the fines needed to be large enough to act as a deterrent. As one stakeholder explained:

If the fine is not large enough, then it a lot of the retailers can just look at it as a cost of doing business if they're making more money off underage sales than they will paying any fines.

Stakeholders strongly advocated that in the case of a retail violation, any monetary penalties should be charged to the owner of the business, rather than the clerk who sold the tobacco product. It was also suggested that if a retail violation was made, rather than a monetary penalty, the clerk should be offered to complete a retailer education diversion program.

Discussion

The findings of this study provide an emic view of the strategies and challenges of T21 implementation, enforcement, and outcomes from a diverse body of T21 stakeholders. To our knowledge, this is the first study examining stakeholder attitudes towards T21 implementation and enforcement. While the majority of suggestions for change from stakeholders are consistent with model policies proposed in current tobacco control literature, results from this study also add new considerations for additional study and exploration into policy changes at the national, state, and local level in order to strengthen T21's impact (Dobbs et al., 2021, Tobacco 21, 2019). By using a focus group design, stakeholders had the opportunity to report their own experiences as well as compare and reflect on policies in other localities. While participants had the option to mask their identity during the focus groups, some elected to share contact information with each other to share implementation and enforcement resources and ideas developed in their own communities.

Since the federal law was passed in 2019, stakeholders have used both passive and active strategies to implement T21 in their communities. Commonly used strategies include signage,

pamphlets, retailer education initiatives, and toolkits tailored to tobacco retailers. While stakeholders reported these strategies to be effective at raising awareness and education of T21, the majority of methods used by stakeholders were passive strategies, which may signify the need to incorporate more active education strategies that can be supplemented with current educational material. Additional study into the evaluation of different retailer education strategies, including how to improve current education programs, such as the inclusion of adult learning principles or tailored retailer education offered in several modalities (e.g., in-person, videos, e-modules) is needed. Stakeholders also identified a lack of funding and the need for increased public awareness as barriers towards their education and awareness goals. While some stakeholders reported using the FDA's "This Is Our Watch" materials, other stakeholders reported the need to make their own educational materials tailored to the needs of their community (FDA, 2021). This disconnect may signal the need for additional support from the federal level, including funding for items such as custom signage as well as national efforts to raise public awareness of the T21 law.

Barriers to implementation also included state and local laws that competed with the federal law and a lack of statewide retail licenses, both of which need to be addressed at the policy level. The results of this study showed that competing laws resulted in confusion as retailers were required to post signage that had conflicting information and local communities were unsure of which law was in fact, the superseding law. As the federal law supersedes state and local laws, state and local laws should have updated MLSAs to reflect the national minimum of 21 years old to eliminate any confusion caused by competing laws. Similarly, in order to effectively regulate T21 enforcement, comprehensive lists of tobacco retailers must be readily available, which, stakeholders identified as a key resource needed in order to properly implement

T21 in their communities. While prior studies have been conducted to successfully determine the total number of tobacco retailers within a state that did not have a tobacco licensing law, statewide tobacco retail licensing laws would ensure each state would have a standardized list of all retailers as well as facilitate further regulation of retail violations when necessary (D'Angelo, 2014). Currently, 29 U.S. states have instituted mandatory tobacco retailer licenses, which have been shown to reduce youth tobacco use and youth e-cigarette initiation (County Health Rankings and Roadmaps, n.d.).

Similar to T21's implementation, results of this study found that T21 enforcement varies upon locality. At the federal level, participants believed that efforts through the FDA and the SAMHSA Synar program were currently not sufficient to enforce T21. Depending on their location, stakeholders reported variability in the frequency and distribution of retail compliance checks, age of cooperating individuals attempting to buy tobacco products during retail compliance checks, penalties for retail violations, and agencies responsible for completing retail compliance checks. When asked how to improve T21 enforcement policies in their communities, stakeholders reported that more frequent checks were needed, citing at least two to three checks per year with "look-back" periods for retailers that have compliance violations. Opinions varied on the patterns that retail compliance checks should have, with some participants stating that the most effective policy would be a random sample taken of retailers each year, all retailers in a jurisdiction at random times throughout the year, some based on propensity and prior violations, and some based on proximity to youth-serving institutions, such as schools. While there has been a growing body of literature on promising new methods, such as propensity-based modelling for retail violations, more testing on such methods is needed (Dai et al., 2021). There was consensus among participants in the study that the ages of cooperating individuals completing compliance

checks should range between 18 to 20 years old. As some localities reported having individuals as young as 15 complete retail compliance checks, having individuals under the age of 18 is counter-intuitive to the federal law as the target was to raise the MLSA from 18 to 21 years old, further delaying the age of tobacco use initiation. Stakeholders also discussed the importance of not only having new cooperating individuals complete retail compliance checks as less-populated areas would undoubtedly know which individuals were working as retail compliance staff, but also the importance of having cooperating individuals act as naturally as possible, including carrying a fake ID, mannerisms, and dress. These suggestions are consistent with recommendations from other studies evaluating tobacco retail compliance check protocols for cooperating individuals (Lee et al., 2016; Levinson et al., 2020).

Stakeholders expressed both vape and tobacco shops as well as online sales as areas of particular concern for T21 enforcement for several reasons, including e-cigarettes not being regulated similar to other tobacco products and evasion of penalties through technicalities. The online space was also mentioned as a major concern for enforcement. As youth under the age of 21 use e-cigarettes more than any other tobacco product and are most likely to purchase their e-cigarette devices either in vape shops or online, further study and policy development responding to the challenges in regulation for such retailers is important towards meeting the goals of the T21 law of reduced youth tobacco initiation (Cwalina et al., 2021; Gentzke et al., 2022).

While stakeholders supported T21 and believed that the law had the potential to reduce health disparities known to exist in tobacco initiation and use among historically and systematically marginalized racial and socio-economic groups, they were concerned about unintended outcomes of T21 on health equity, particularly in localities that have current PUP laws. Stakeholders described two instances in which PUP laws could exacerbate inequities

including 1) increased profiling of non-white youth and 2) youth being charged with criminal offenses if charged under the PUP law. Changes suggested by stakeholders to mitigate such outcomes included repealing PUP laws and having youth complete educational or cessation programs if found in possession of a tobacco product. Such suggestions are consistent with other model T21 policies that have been recommended by several public health organizations throughout the nation, such as the Public Health Law Center and the Campaign for Tobacco Free Kids (Public Health Law Center, 2019).

While not explicitly framed as an issue of equity by stakeholders, equity concerns were raised around penalties incurred by the clerk or retailer in businesses where a retail violation took place. Stakeholders believed that similar to youth, clerks should not be monetarily penalized nor fired in the case of a retail violation, rather they should have the option to complete an educational diversion program. The majority of stakeholders were in support of any monetary fine for the business, rather than the clerk. From an equity perspective, while monetary fines would need to be enough to disincentivize future retail violations, the size of the business in question may also need to be taken into consideration as a single locally owned business may not have similar resources as larger chain retailers. The appropriateness of T21 penalties and their effect on health equity requires more study and evaluation.

Limitations and Strengths

There were several limitations to note. First, participants in these focus groups identified as T21 stakeholders. Even though names and identities were masked during the focus groups, participants were aware that they were speaking with other stakeholders, which due to social desirability bias, may have affected answers given during focus groups. To minimize this bias, participants had the option to use a pseudonym to maintain their privacy, all responses were kept

confidential and only accessed by the research team, participants were asked to keep the contents of the focus group confidential, and participants were notified that they were free to withdraw at any time. Second, participants of these focus groups represented 16 U.S. states, which given the variability of T21 implementation and enforcement based on locality, may have influenced the results of this study. There was a higher representation of stakeholders from the Midwest, which again, may have influenced results and may not be generalizable to other U.S. states. To minimize this bias, participants from differing states were encouraged to provide their unique perspectives. Third, to the best of our knowledge, only one participant worked directly with the FDA. Other participants were involved in other organizational efforts with T21, but most did not have an intimate knowledge of the FDA's enforcement efforts. Fourth, as focus groups will naturally have participants who will be more vocal than others, some participants may have contributed more to the discussion. To minimize this, facilitators encouraged participation from all participants during the focus groups. Finally, we did not analyze results based on participant characteristics, such as their location or stakeholder category; however, this should be considered for future studies.

As this is the first study to our knowledge that has evaluated stakeholder attitudes towards the federal T21 law, a key strength of this study was the collection of insider data from a geographically and professionally diverse group of individuals to provide nation-wide insight on T21's implementation, enforcement, and outcomes in their communities. Such data will allow for additional research and policy development to strengthen and improve T21's impact on public health.

Implications

Healthy People 2030 named reducing tobacco use in adolescents as a leading health indicator for the next decade, however, at this time, current tobacco use rates have increased (Healthy People 2030, n.d.). In this study, we assessed stakeholder's attitudes towards current strategies and barriers to the T21 law, a population-level intervention aimed at reducing youth tobacco initiation rates. While T21 will not be a panacea to reduce youth tobacco use, reducing barriers to its implementation and enforcement will strengthen its impact. To do this, we recommend the following actions:

- We encourage the FDA and SAMHSA to partner with state and local tobacco control organizations to provide additional funding and resources for T21 implementation and enforcement.
- Policymakers should repeal all Purchase Use and Possession (PUP) Laws and align state and local laws with the federal MLSA of 21 years old.
- Policymakers should align current tobacco control laws with established model T21 policies.
- Policymakers should address the online sale of tobacco, including social media, ensuring that age restriction measures are in place.
- Researchers should conduct further evaluation and policy analyses on the impacts of T21 and other tobacco control laws on health equity.
- Researchers should conduct impact and evaluation studies on current retailer education programs.
- We encourage further coalition building and collaboration among stakeholders from across the nation to share ideas and innovations in T21 implementation and enforcement.

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Human Subjects Approval Statement

This study was approved by the University of Nebraska Medical Center Institutional Review Board Office (IRB #0466-21-EX).

Conflicts of Interest Disclosure Statement

The authors have no conflicts of interest to disclose.

References

- Ali, F. R., Rice, K., Fang, X., & Xu, X. (2019). Tobacco 21 policies in California and Hawaii and sales of Cigarette Packs: A Difference-in-differences analysis. *Tobacco Control*. <https://doi.org/10.1136/tobaccocontrol-2019-055031>
- Bonnie, R. J., Stratton, K., & Kwan, L. Y. (2015). *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*. The National Academies Press.
- Campaign for Tobacco-free Kids. States and localities that have raised the minimum legal sale age for tobacco products to 21. Washington, DC: Campaign for Tobacco-free Kids; 2019. https://www.tobaccofreekids.org/assets/content/what_we_do/state_local_issues/sales_21/states_localities_MLSA_21.pdf
- Centers for Disease Control and Prevention. (2021, June 2). *Data and Statistics*. Centers for Disease Control and Prevention. Retrieved March 12, 2022, from https://www.cdc.gov/tobacco/data_statistics/index.htm
- Colston, D. C., Titus, A. R., Thrasher, J. F., Elliott, M. R., & Fleischer, N. L. (2021). Area-level predictors of tobacco 21 coverage in the U.S. before the national law: Exploring potential disparities. *American Journal of Preventive Medicine*, *60*(1), 29–37. <https://doi.org/10.1016/j.amepre.2020.06.026>
- County Health Rankings & Roadmaps. (n.d.). *Tobacco retailer licensing*. Retrieved July 17, 2022, from <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/tobacco-retailer-licensing>
- Cwalina, S. N., Braymiller, J. L., Leventhal, A. M., Unger, J. B., McConnell, R., & Barrington-Trimis, J. L. (2020). Prevalence of young adult vaping, substance vaped, and purchase location across five categories of vaping devices. *Nicotine & Tobacco Research*, *23*(5), 829–835. <https://doi.org/10.1093/ntr/ntaa232>
- D'Angelo, H., Fleischhacker, S., Rose, S. W., & Ribisl, K. M. (2014). Field validation of secondary data sources for enumerating retail tobacco outlets in a state without tobacco outlet licensing. *Health & Place*, *28*, 38–44. <https://doi.org/10.1016/j.healthplace.2014.03.006>
- Dai, H., Henriksen, L., Xu, Z., & Rathnayake, N. (2021). Using place-based characteristics to inform FDA tobacco sales inspections: Results from a multilevel propensity score model. *Tobacco Control*. <https://doi.org/10.1136/tobaccocontrol-2021-056742>
- DiFranza, J. R. (2005). Best practices for enforcing state laws prohibiting the sale of tobacco to minors. *Journal of Public Health Management and Practice*, *11*(6), 559–565. <https://doi.org/10.1097/00124784-200511000-00014>

- Dobbs, P. D., Chadwick, G., Dunlap, C. M., White, K. A., & Cheney, M. K. (2021). Tobacco 21 policies in the U.S.: The importance of local control with federal policy. *American Journal of Preventive Medicine*, 60(5), 639–647. <https://doi.org/10.1016/j.amepre.2020.12.009>
- Dobbs, P. D., Chadwick, G., Ungar, K., Dunlap, C., White, K. A., Kelly, M. C. T., & K Cheney, M. (2019). Development of a tobacco 21 policy assessment tool and state-level analysis in the USA, 2015–2019. *Tobacco Control*. <https://doi.org/10.1136/tobaccocontrol-2019-055102>
- FDA. (2021). *This is Our Watch*. U.S. Food and Drug Administration. Retrieved July 5, 2022, from <https://www.fda.gov/tobacco-products/retail-sales-tobacco-products/our-watch>
- FDA. (n.d.). *Tobacco 21*. U.S. Food and Drug Administration. Retrieved March 12, 2022, from <https://www.fda.gov/tobacco-products/retail-sales-tobacco-products/tobacco-21>
- Friedman, A. S., & Wu, R. J. (2019). Do local tobacco-21 laws reduce smoking among 18- to 20-year-olds? *Nicotine & Tobacco Research*, 22(7), 1195–1201. <https://doi.org/10.1093/ntr/ntz123>
- Gentzke, A. S., Wang, T. W., Cornelius, M., Park-Lee, E., Ren, C., Sawdey, M. D., Cullen, K. A., Loretan, C., Jamal, A., & Homa, D. M. (2022). Tobacco product use and associated factors among middle and high school students — National Youth Tobacco Survey, United States, 2021. *MMWR. Surveillance Summaries*, 71(5), 1–29. <https://doi.org/10.15585/mmwr.ss7105a1>
- Healthy People 2030. (n.d.). *Reduce current tobacco use in adolescents*. Retrieved July 5, 2022, from <https://health.gov/healthypeople/objectives-and-data/browse-objectives/tobacco-use/reduce-current-tobacco-use-adolescents-tu-04>
- Hemmerich, N., Jenson, D., Bowrey, B. L., & Lee, J. G. (2021). Underutilization of no-tobacco-sale orders against retailers that repeatedly sell to minors, 2015–2019, USA. *Tobacco Control*. <https://doi.org/10.1136/tobaccocontrol-2020-056379>
- Hudson, S. V., Kurti, M., Howard, J., Sanabria, B., Schroth, K. R., Hrywna, M., & Delnevo, C. D. (2021). Adoption of tobacco 21: A cross-case analysis of ten US states. *International Journal of Environmental Research and Public Health*, 18(11), 6096. <https://doi.org/10.3390/ijerph18116096>
- Levinson, A. H., Lee, J. G. L., Jason, L. A., & DiFranza, J. R. (2020). Asking for identification and retail tobacco sales to minors. *Pediatrics*, 145(5). <https://doi.org/10.1542/peds.2019-3253>
- Lee, J. G., Gregory, K. R., Baker, H. M., Ranney, L. M., & Goldstein, A. O. (2016). "May I buy a pack of Marlboros, Please?" A systematic review of evidence to improve the validity and impact of Youth Undercover Buy Inspections. *PLOS ONE*, 11(4). <https://doi.org/10.1371/journal.pone.0153152>

- Macinko, J., & Silver, D. (2018). Impact of New York City's 2014 increased minimum legal purchase age on Youth Tobacco use. *American Journal of Public Health, 108*(5), 669–675. <https://doi.org/10.2105/ajph.2018.304340>
- Marynak K, Mahoney M, Williams KS, Tynan MA, Reimels E, King BA. *State and Territorial Laws Prohibiting Sales of Tobacco Products to Persons Aged <21 Years — United States, December 20, 2019*. *MMWR Morb Mortal Wkly Rep* 2020;69:189–192. DOI: <http://dx.doi.org/10.15585/mmwr.mm6907a3>
- Public Health Law Center. *Tobacco 21: Model Policy*. (2019, July 23) Retrieved July 6, 2022, from <https://www.publichealthlawcenter.org/sites/default/files/resources/tobacco21-model-policy-08-06-2019.pdf>
- Roberts, M. E., Keller-Hamilton, B., & Teferra, A. A. (2022). Tobacco 21's impact amid the e-cigarette surge. *Public Health Reports, 003335492110617*. <https://doi.org/10.1177/00333549211061772>
- Roeseler, A., Vuong, T. D., Henriksen, L., & Zhang, X. (2019). Assessment of underage sales violations in tobacco stores and Vape Shops. *JAMA Pediatrics, 173*(8), 795. <https://doi.org/10.1001/jamapediatrics.2019.1571>
- SAMHSA. (2014). (publication). *FFY 2014 Annual Synar Reports Tobacco Sales to Youth*. Retrieved March 13, 2022 from <https://store.samhsa.gov/sites/default/files/d7/priv/synar-15.pdf>
- SAMHSA. (n.d.). *Synar program annual reports: Youth Tobacco Sales*. Retrieved March 22, 2022, from <https://www.samhsa.gov/synar/annual-reports>
- Silver, D., Macinko, J., Giorgio, M., Bae, J. Y., & Jimenez, G. (2015). Retailer compliance with tobacco control laws in New York City before and after raising the minimum legal purchase age to 21. *Tobacco Control, 25*(6), 624–627. <https://doi.org/10.1136/tobaccocontrol-2015-052547>
- Tobacco 21. (2019, July 30). *Model policy*. Retrieved March 14, 2022, from <https://tobacco21.org/tobacco-21-model-policy/>
- Winickoff, J. P. (2018). Maximizing the impact of tobacco 21 laws across the United States. *American Journal of Public Health, 108*(5), 594–595. <https://doi.org/10.2105/ajph.2018.304376>
- Zhang, X., Vuong, T. D., Andersen-Rodgers, E., & Roeseler, A. (2018). Evaluation of California's 'tobacco 21' law. *Tobacco Control, 27*(6), 656–662. <https://doi.org/10.1136/tobaccocontrol-2017-054088>

Table 1*Focus Group Participant Characteristics*

Stakeholder Category	N
Policy Expert	12
Evaluation Expert	5
Subject Matter Expert	17
Implementation Staff	4
Other	4
State	N (%)
AR	1 (3%)
AZ	1 (3%)
CA	1 (3%)
CO	1 (3%)
DC	1 (3%)
FL	1 (3%)
GA	1 (3%)
KS	1 (3%)
KY	2 (6.5%)
MD	1 (3%)
MO	5 (16%)
NC	1 (3%)
NE	10 (32.3%)
NY	1 (3%)
OH	1 (3%)
Other	1 (3%)
SC	1 (3%)

Table 2

Themes for Tobacco 21 Implementation

Theme	Code	Example Focus Group Quotes
<p>Current T21 Education and Awareness Strategies</p>	<p>Passive Strategies</p>	<p>Signage:</p> <ul style="list-style-type: none"> • <i>“Well, they had signs posted at the cash registers. I don't remember if they did at their doors, but they did have signage at the cash registers.” (F.G. 4)</i> • <i>“I did notice most of the signage was company-created. So if they were a small mom-and-pop, they printed it out on their computer. If they were QuikTrip or Casey's, something came down from their corporate level.” (F.G. 4)</i> • <i>“I've noticed quite a few more signs, signs outside of these retailers, a gas kiosk. Places are now sporting signs indicating age requirements, and that there will be asking for ID and that sort of thing.” (F.G. 3)</i> <p>Toolkits and other Educational Material:</p> <ul style="list-style-type: none"> • <i>“And it's called a Tobacco 21 toolkit...the kit is a way to remind the store clerk. Well, the store owner, to remind his clerks to check for IDs. It's got ID pins. It's got frequently asked questions about tobacco, and about Tobacco 21. If there are any misconceptions about the law. It's got some signage. Which is actually required by Kentucky law, but I'm not seeing much of it up.” (F.G. 2)</i> • <i>“[A community-based youth group] did develop these basically printed business cards, and it was when you go into a gas station or a retailer, pretty much a gas station or a grocery store, that you could hand it to the retailer and say, "I care about Tobacco 21. I care about kids in our community. And just thank you for upholding this.” (F.G. 5)</i>
	<p>Active Strategies</p>	<p>Personal Letters to Retailers:</p> <ul style="list-style-type: none"> • <i>“... We sent out personal letters to all of the license holders, letting them know of the law change and what to expect, and offered resources if they needed anything for their store signage or anything like that. Specifically, we also have on hand that we have handed out that this is our watch materials that we could obtain for free from that program.” (F.G. 1)</i> <p>Retailer Training:</p> <ul style="list-style-type: none"> • <i>“So our department of revenue and department of public health and environment have collaborated for a fair amount of time, years actually, around merchant education. They send signs, they send age calculators, they have a how-to website. The department of revenue's tobacco website has all the laws.” (F.G. 3)</i>

There are significant barriers to T21 implementation

	<ul style="list-style-type: none">• <i>“It was first education by the legal resource center to our health departments. And then our health departments, who are the ones that have direct contact with our retailers, were the ones who were doing a lot of retailer education, both in person and electronically.” (F.G. 4)</i>• <i>“...[B]y city ordinance, the police department conducts retailer training - they do that on a monthly basis, I believe - where all of the retailers within city limits are required by city ordinance to participate in their retailer training which focuses on checking IDs and being able to tell when somebody is using a false ID.” (F.G. 4)</i>
Funding and resource limitations	<ul style="list-style-type: none">• <i>“I would love to see is something that's coming down from either FDA, CDC, or state health department or state tobacco control. Coming down to the communities, saying, "Hey, here's a nice little packet that you can take out. Here's how you have those conversations." And less of, "Yeah, it's your community, you figure out what they want to know." Because there's not enough resources down at the local level.” (F.G. 4)</i>• <i>“I know a lot of communities wouldn't be able to afford that, even providing one sign at \$10 to 200 people-- or 200 stores.” (F.G. 4)</i>
Lack of state-wide tobacco retail licenses	<ul style="list-style-type: none">• <i>“So the FDA kindly agreed to send a digital age-verification calendar to every outlet in the state. So I provided them with our best retail list. Again, it's imperfect because we don't have a license law.” (F.G. 2)</i>• <i>“We deliver materials to every tobacco retailer that we're aware of because we don't have a state list of tobacco retailers either. But all the retailers that we can find and be made aware of from other different state lists from-- it's kind of a mess how they put it together” (F.G. 1)</i>• <i>“I would say that when it came time for implementation in our community, we realized how much it hurt us that we did not have a statewide Tobacco retailer license, and how much that licensing process helps with implementation.” (F.G. 5)</i>
Challenges in retailer training	<ul style="list-style-type: none">• <i>“I just think more accessible training, so the state of Missouri doesn't really have a virtual option, or videos, or anything like that, even since COVID or anything, it just hasn't caught up yet.” (F.G. 1)</i>• <i>“So maybe there is a need to produce an education video or some kind of education that retailers can use with all the new clerks that they're constantly hiring that may work there two weeks and then go to another job, and they've got to replace that employee.” (F.G. 1)</i>• <i>“My takeaway on that is merchant education can be effective if the store owners make it part of their culture and stress that importance to their employees. That is the biggest challenge in my work is trying to create that spark on the owner to get them to make it part of their store policy. It unfortunately doesn't happen as much as I would like it to.” (F.G. 2)</i>

- *“And she said they went online that it was difficult to tell if people were taking them because you don't know if they're just turning them on and it's on their screen. So I think there were some other challenges with making sure there was the training for implementation.” (F.G. 4)*

Complexities from competing state and local laws

- *“And I felt like one of the things we noticed was there was a lot of that confusion because Nebraska felt very strongly that we were just going to-- state law superseded federal. So they said, “We had just moved it to 19. They can't tell us what to do, so we're going to stay at 19.” (F.G. 4)*
- *“And we did face a problem in that at first-- and we still face it - where, by state law, we still have to hand out the 18 signs because our state law hasn't been updated yet. And so what we did is-- and by state law, technically, all the retailers still had to post those 18 signs. And that was a huge barrier for us.” (F.G. 1)*
- *“But at the same time, we're instructed to-- while we're handing out stickers that say 21 and under like WE Card materials, FDA our watch materials, like the calendars and everything, we have to hand out the state law sign that says 18 and under. So it's very, very confusing.” (F.G. 3)*

Current public awareness and education of T21

- *“But I haven't since seen a whole lot of educational campaigns that are public facing about, “This is the state of Tobacco 21 in the state or America.” And I definitely think that's a need.” (F.G. 3)*
- *“And I'm just like, ‘Oh, it's still in the works,’ because I haven't heard anything just from a general public perspective the little bit of social media or TV that I do watch. I don't see any commercials, or advertisements, or anything that's like, “Hey, guys. This is the new thing. You have to be 21 to purchase a tobacco product.” And so I don't feel like the message is out there”. (F.G. 3)*
- *“I know that there was some education to retailers on the new policies when T21 passed. But to the general public, there was not a very robust communications plan.” (F.G. 5).*

Table 3

Themes for Tobacco 21 Enforcement

Theme	Code	Example Focus Group Quotes
	Age of cooperating individuals for compliance checks vary by locality	<ul style="list-style-type: none">• <i>“I wanted to mention in South Carolina the age for the youth is still-- they have to be 15 to 17, but for this past year, there is a note saying they had trouble recruiting people because of the pandemic, and it's not really clarified.” (F.G. 1)</i>• <i>“We complete compliance checks... And our officer used a 15-year-old. They're still using lower-age individuals in our area.” (F.G. 1)</i>• <i>“So we just started using the 18 to 20-year-olds two years ago when Tobacco 21 went into effect.” (F.G. 2)</i>• <i>“So some people are still using under 18-- or I mean, some jurisdictions are still using under 18, but some did choose to go a little bit higher once T21 became effective.” (F.G. 4)</i>
	Compliance check complications due to the COVID-19 pandemic	<ul style="list-style-type: none">• <i>“And in the past, it was done annually. But it's kind of sketchy out here. It depends on budget cuts. And I also COVID had an impact on it.” (F.G. 1)</i>• <i>“But things here run out of our Department of Health, which obviously in this time of COVID has been a little bit overstretched.” (F.G. 3)</i>• <i>“I know that our students have an opportunity about every three months from our school to do a ride along, and I know that they try to get out every month. But I can tell you that with COVID, I know that didn't happen for 18 or 20 months” (F.G. 5)</i>• <i>“But part of it was also that there had been no inspections on any of the retailers because of COVID, so there was no enforcement efforts. Retailers, for whatever reason, they got lax. And so when we started them up, boom.” (F.G. 2)</i>

**Current
Enforcement
Measure
Protocols**

Penalties for
retail
violations
vary

- *“The only time the owner can get fined in our state law, if they do not maintain this thing called-- it's called a tobacco retailer compliance acknowledgment form, basically, and every clerk has to sign this piece of paper that the ABC generates.” (F.G. 2)*
- *“We're working in Alaska right now, and it's interesting even though they're not 21, I mentioned earlier that the first penalty is a 20-day suspension of the license. And when that happened, they saw a significant change because retailers don't want to lose their right to sell tobacco products.” (F.G. 2)*
- *“If a retailer does sell, they often will be recommended to do a education program funded through the local health department before they get any sort of major fines or anything like that.” (F.G. 4)*

A variety of
entities
complete
retail
compliance
checks

- *“In the state of Missouri, we do-- each prevention resource center does the Synar Compliance Survey to a [random] sample of businesses within our region. And then, we just submit the-- our findings and our compliance rate to the state. After that, there's supposed to be some follow-up with ATC to do actual compliance checks at that point where they can hand out fines or warnings. But we only have in the state of Missouri I think six agents to cover the entire state. We don't have a lot of funding for it. So more time-- more times than not, they don't really get done. So it's up to local law enforcement to do those compliance checks” (F.G. 3)*
- *“I can talk a little bit about Arizona...we have a joint [inspection] program with the FDA” (F.G. 2)*

Frequency
and
distribution
of
compliance
checks vary

- *“I believe they actually plan a route. But like I said, it's once a year or less, and it is a planned route to keep the mileage down to the least amount.” (F.G. 1)*
- *“I think Colorado might do it twice a year, there's a handful of states that do twice a year, once a year minimum with a 24 to 36 month look-back period.” (F.G. 2)*
- *“...we just get a small sample-size. And I serve one of the most populated areas, and I can tell you it's like 168 businesses each year, and it's for just one check.” (F.G. 3)*
- *“They do [compliance checks] on a monthly basis, I believe - where all of the retailers within city limits are required by city ordinance to participate in their retailer training which focuses on checking IDs (F.G. 4)*

<p><i>There are several emerging areas of enforcement that present major challenges</i></p>	<p>Difference in tobacco versus vape shops</p>	<ul style="list-style-type: none"> • <i>“When I go and visit tobacco shops and vape shops in my local area, they're very different in terms of their attitudes toward minimum age requirements. Certainly vape shops are like-- in trying to stand out and distinguish vapes from cigarettes, they're like, "Oh, no. We're a completely above- board shop. We're not the tobacco industry and so we absolutely adhere to minimum purchase laws.” (F.G. 1)</i> • <i>“But our Synar visits and our tobacco merchant education does not- - if you took it to a vape shop that only sells electronic cigarettes, we do not visit them as a tobacco merchant retailer, because in Missouri, electronic cigarettes are not regulated like other tobacco products” (F.G. 1)</i> • <i>“So especially under the FDA thing, one thing we've noticed as a practical effect with the FDA penalties, they go up to like \$11,000. We've seen a lot of, unfortunately, our bad actors in Arizona are smoke shops or vape shops. And we've seen that if the penalties go so, so high like over 2,000, \$5,000, they, quote-unquote, "sell the business" to their cousin or their brother and change their LLC and completely avoid that financial liability” (F.G. 2)</i>
	<p>Online sale of tobacco products</p>	<ul style="list-style-type: none"> • <i>“The online space begins to transcend municipal boundaries and begins to undermine and skirt any sort of regulatory prohibitions on sales, and I think that's a regulatory challenge because for the retailer that is in a jurisdiction that has some sort of age or flavor ban, to make sure that their online sales are happening, but also how do you control retailers or sale of prohibited products from an outside vendor? And I think that is a regulatory issue that's hard to wrap our minds around until you have- - especially if you have subnational laws, and then not even to deal with the whole question of international sales. So I think those are the kinds of issues that my colleagues have been looking at that I don't know that we have good answers to at this point.” (F.G. 1)</i> • <i>“Currently, in social media, they don't have age gatekeeping procedures. So the age gatekeeping procedures should be required and added to the promotion posts for those tobacco companies.” (F.G. 3)</i>
<p><i>Current FDA and SYNAR compliance efforts are insufficient to enforce T21</i></p>	<p>Siloed efforts in communities</p>	<ul style="list-style-type: none"> • <i>“We have some coalitions, again, that have tried to dedicate grant funding to doing their own because there's such a problem with the lack of compliance checks that happen. But, again, in the last couple of years with FDA conducting them, there have been more. But that is really separated from the rest of the prevention and enforcement world with the coalition world.” (F.G. 1)</i> • <i>“But the failure rate is 1.4% and it's been below 4% for the past couple of years. But one of the things that we think is mainly because we have been able to do those local compliance checks and pretty much every retailer gets a visited a couple of times per year. But that has changed. We're no longer be able to do at the local level compliance checks. And now the FDA is going to be doing them, so I'm kind of wondering that might look like for the following year, what that rate might look like.” (F.G. 2)</i>

- *“And if it's a Synar inspection, that's state, so it's a state law. If it's an FDA, then it's a federal, and then you have a whole different system, a different age thing to deal with.” (F.G. 2)*

FDA and
SYNAR
compliance
check
frequency,
pattern, and
penalties are
inadequate

- *“If you have a system setup like the FDA, where it's so rigid, and then like, "Okay, and you must have follow ups on this one within this time." And then if you've inspected this once in the past year you must not go to them again. They have all these very rigid protocols and I think that doesn't allow for addressing the reality of what's actually happening in the field.” (F.G. 2)*
- *“...we don't have anything that happens to anybody for Synar. For the FDA compliance checks, that's different. But for Synar, it's just like fact-finding I feel like is what it is.” (F.G. 1)*
- *“Yeah, the FDA checks, in my opinion, nobody gets in trouble by the FDA when it comes to tobacco sales. I mean, it's really weak. It's really on the states to actually enforce it and protect their communities” (F.G. 2)*

Table 4

Themes for Tobacco 21 Outcomes

Theme	Code	Example Quotes (F.G. – Focus Group)
<i>Stakeholders are concerned about potential implications of T21 on health equity</i>	Unintended consequence of exacerbating police profiling of marginalized communities	<ul style="list-style-type: none">• <i>“I will say the thing that I'm most concerned about with enforcement is it seems like some policymakers when they were writing up this legislation thought it would make the law more impactful to include purchase, use, and possession provisions in tobacco 21 laws. And that essentially puts the onus on at least partially on the user, under 18 individuals that are using tobacco products. If there's any type of fine or punishment or police presence in terms of enforcing that, I think that could have considerable health equity implications considering the police state in America where police disproportionately are likely to pull over Black and Brown individuals or individuals of lower socioeconomic status.” (F.G. 3)</i>• <i>In response to if T21 can help reduce health inequities: “I'd say yes if the law is designed to be a civil issue and not a criminal issue. And again, I know I keep harping on it. I think if the penalty is on the retailer and not on the purchaser, it can help, but if it's designed to penalize kids who make attempts or have possession, then it's going to cause issues between the police and kids in marginalized communities that will have another reason to be targeted.” (F.G. 2)</i>• <i>“I mean, in theory, right, we're saying that if we prevent minority populations from having access to these products or using these products, that theoretically, over the years, their health outcomes will improve because we have less people using these products. What it will look like as we actually roll it out, I think it will be dependent on each community and whether or not they want to use it for profiling.” (F.G. 4)</i>• <i>“My concerns are with the purchase use and possession laws, and that those could be used-- particularly in this time during a Black Lives Matters movement, that it could be used to stereotype. It could be used to profile youth.” (F.G. 4)</i>

Table 5

Recommended Changes from Stakeholders

Theme	Code	Example Quotes (F.G. – Focus Group)
	Frequency of compliance checks	<ul style="list-style-type: none">• <i>“I think three checks a year sounds fantastic to me for each retailer. We're lucky if they get one, and within two years, I mean, and that has been even better, like I said before, in the last two years, three years we've seen way more enforcement that we did before, probably because of the issues around vapes as well, when Juuls and all that hit the market, it became a huge issue” (F.G. 1)</i>• <i>“Ideally, we say twice a year, and one of these checks would include looking at signage and placement.” (F.G. 2)</i>
	Retailer education	<ul style="list-style-type: none">• <i>“...having some more understanding of individual needs of different retailers. We see that also in our area with vape retailers versus traditional tobacco retailers, but also with our varying needs, whether they're a QuikTrip or a mom-and-pop shop, or if they're rural versus our urban areas. It's very, very different what their needs are, and we have rural areas that are begging for information on how to check for fake IDs, they're dealing with fakes in an amazing amount.” (F.G. 1)</i>• <i>“I think tobacco shops and most people are well trained in those locations, but convenience stores is where there seems to be more turnover. And she said they went online that it was difficult to tell if people were taking them because you don't know if they're just turning them on and it's on their screen.” (F.G. 4)</i>

Stakeholders believe that changes in implementation and enforcement protocol are needed

Cooperating individual training and presentation during compliance checks

- *“But they keep the same decoys year after year. And so [laughter] I was like, “Well, I mean, I’m from a small town in Arkansas of 5,000 people. And if I was hired to do that, as soon as I walked in a gas station, everybody would know like, ‘Don’t you dare sell it to that--’” everybody knows who they are.” (F.G. 4)*
- *“It seems clear that without allowing the decoys to carry IDs, genuine IDs with real age, there’s too great a chance, at least in Colorado, we’ve seen this nationally I think as well, that the merchants will rely on the, “I don’t have it,” as a cue that this person shouldn’t be sold to.” (F.G. 3)*

Pattern of compliance checks

- *Random: “It needs to be unpredictable so they’re not expecting it. And actually, I have known of retailers that called the business a few miles down the road and said, “Oh, by the way, I just had my inspection.” A lot of times they forewarn each other. Which really- - you’re losing your purpose.” (F.G. 1)*
- *Propensity: “...also more frequent checks for those who have been found in non-compliance. They should get more follow-ups.” (F.G. 5)*

Enforcement agency and community buy-in

- *“But enforcement officers are hesitant to enforce things that would be too burdensome, even when they’re appropriate.” (F.G. 1)*
- *“Depending on the hearing officers, they have a different outcome. So sometimes, they’re getting fined. Sometimes they are getting closed down for a period of time. And sometimes, a lot of times, nothing happens at all. And I’ve heard anecdotally that that also then kind of makes the health departments not really interested, either not interested in performing their compliance checks beyond whatever the minimum is that they’re required to do, or when they do have a violation, they don’t bother reporting that violation because they feel like it’s just going to be more work than it’s worth if the Alcohol and Tobacco Commission isn’t going to do anything to the retailer.” (F.G. 4)*
- *“And so as a community level, I don’t see the support for the compliance checks anymore. They’re saying, “Yeah, just leave those up to the FDA,” even, yeah, within our own tobacco control as a state, I’m not seeing the support from compliance checks anymore” (F.G.4)*

Who should enforce T21?

- *“We spend a lot of time thinking about who enforces. Is it law enforcement or is it local public health? And we in our community advocated for it to be local public health, that this is not something that law enforcement necessarily needs to spend their precious time and resources doing and that generally, I think that that was if you have the supportive local public health agency that that message, “We're not putting an additional burden on law enforcement,” is very well received in the community.”* (F.G. 5)
- *As a cost-saving measure: “I'm just-- we almost always try to get the inspections done by the health department.”* (F.G. 5)

Loss of retail license

- *“I think one of the key things besides just having a monetary penalty, which to them, they may look at as just the cost of doing business, is to have the suspension or revocation looming over them. Not being able to sell for a week or two weeks, that's going to hit them in the pocketbook much more than any fine will.”* (F.G. 5)
- *“We take away their license, threaten to take away their ability to sell, really that's how you're going to see change. It's a privilege to sell this deadly, toxic product, but that's how you'll see change.”* (F.G. 2)

Monetary penalties

- *“I do think that fines have the teeth that are needed. It's just when it can be paired with multiple checks, I think a warning letter's great, then a fine. But if you're looking at one check a year, I think you have to consider fines for the business itself, for the business owner, right off the jump just because you don't have the time to come back in three weeks and check again to see if they have changed.”* (F.G. 1)
- *“If the fine is not large enough, then a lot of the retailers can just look at it as a cost of doing business if they're making more money off underage sales than they will paying any fines.”* (F.G. 1)

Stakeholders believe that penalties for retail violations should be effective

Penalty to business owner, rather than the clerk

- *“I’d say on a perspective of the one thing that we do not agree with in our state is it is the worker, the individual that get s cited a ticket instead of having it go against the business, the company. So it’s that hourly-rate employee that’s getting a ticket and needing to go to court or whatever for doing that instead of holding the business accountable.” (F.G. 1)*
- *“I feel that if they have multiple failures, then that means we have to address that. We have to talk to the store owners. I do agree that it has to be the owners and the managers and not so much the employees or the checkers.” (F.G. 2)*
- *“They may get up on the pulpit there and say, Well, we’re very rigid, and we’ll fire anybody that sells. Well, they know they can-- it’s pretty much a revolving door on clerk turnover anyway. So that’s just kind of empty words with them.” (F.G. 5)*

Clerk education if a retail violation is made

- *“What I’ve observed is that, usually, if the clerk is attending the class to resolve a citation that they received, that they are not paid, but it’s in lieu of a \$300 fine, so usually winds up being a good deal for the clerk” (F.G. 2)*

Appendix 1: Stakeholder Categories

- Policy Experts
 - National/state/local/territorial/tribal legislators and staff
 - National/state/local/territorial/tribal tobacco prevention and control program staff
 - Relevant enforcement agency staff (e.g., Department of Health, Attorney General's Office, alcohol and tobacco boards, state enforcement agencies)
 - State/national/local nonprofit organizations (e.g., American Cancer Society, American Heart Association, American Lung Association, Campaign for Tobacco-Free Kids, Public Health Law Center)
- Evaluation Experts
 - State, federal, academic, or contract evaluation research partners
 - Agency evaluation staff
- Subject Matter Experts
 - State/local/territorial/tribal department of health and tobacco prevention and control program staff
 - SAMHSA-funded (Synar compliance) staff
 - Legal support partners (e.g., legal technical assistance centers)
 - State/national nonprofit organizations (e.g., Campaign for Tobacco-Free Kids, American Cancer Society, American Heart Association, American Lung Association, American Academy of Pediatrics, youth organizations)
 - Local substance abuse agencies, local arms of the state alcohol and tobacco agency
 - University research partners
 - National Network representatives (e.g., National LGBT Cancer Network, National African American Tobacco Prevention Network)
 - State and local partners of National Networks
- Implementers
 - Inspection or enforcement agency staff (e.g., Department of Health, SAMHSA-funded staff such as Synar compliance staff, Alcohol and Tobacco boards/agencies, local law enforcement)
 - Local enforcement agency staff (Department of Finance, Office of Consumer Affairs)
 - City/county boards/workgroups responsible for enforcing laws
 - Local advocates, coalition members, mobilized stakeholders
 - Mayor's staff responsible for implementing new laws
 - Attorney General's Office
 - Military stakeholders
 - Tribal stakeholders
 - Business associations, retailers selling tobacco (engaged only in the context of implementation-related outcomes and only as appropriate)
- Other. Please specify _____

Appendix 2: Interview Protocol

Introduction (Warm-up Questions)	<p>What is your current position? What is your role in TOBACCO 21 adoption and implementation?</p>
Tobacco 21 implementation	<p>What approach or strategies have been used to implement Tobacco 21? Describe any resources offered or educational efforts made to inform stakeholders (including retailers, youth/young adults, and the general public)?</p> <ul style="list-style-type: none"> • Probes if needed: • Do you have an allocated budget for Tobacco 21 implementation? • Did tobacco retailers receive new age-of-sale warning signs? • Were materials developed and disseminated to educate retailers about the age of sale? • Was there any training for tobacco retailer employees? • Was there any educational effort to raise the awareness of Tobacco 21 among youth and young adults? • Were there any advertisements/media campaigns notifying the public about the new Tobacco 21 laws?
Tobacco 21 enforcement	<p>Describe any Tobacco 21 enforcement and compliance efforts.</p> <ul style="list-style-type: none"> • Probes if needed: • Have decoys aged 18-20 years old been included in compliance inspection? • Have enforcement-related compliance checks been conducted for tobacco sales to minors under 21? • What are the penalties for the first violation and repeated violations? • Any changes in the penalty for violations? • Were new age-of-sale warning signs posted at tobacco retailers?
Retailer compliance	<p>How can we improve retail compliance in preventing sales of tobacco products to people under 21?</p> <ul style="list-style-type: none"> • Probes if needed: • What is the most effective way to prevent tobacco retailer sale of tobacco products to people under 21?

	<ul style="list-style-type: none"> • How about the online sale of tobacco products to people under 21? • How frequently should we conduct retailer training? • How frequently should we conduct retailer inspections? • Should we conduct training and inspections at random or with more focus on the high-risk neighborhood?
Tobacco 21 Impacts	<ul style="list-style-type: none"> • Do you think Tobacco 21 can promote health equity and reduce health disparity in your community? Why or Why not? • What, if any, barriers exist in implementing Tobacco 21 to reduce health disparity? • What resources are needed to implement Tobacco 21 and reduce health disparities? • How do we best implement T21 in communities with a high prevalence of tobacco use or neighborhoods with underserved or minority populations? • Do you see an increase of retailers in minority neighborhoods? • Are there local or state rules about proximity of tobacco retailers to schools? • To improve the effectiveness of Tobacco 21, what additional actions need to be taken in your region? • Do you see flavored tobacco products contributing to the increase in tobacco use? • What are your thoughts about a comprehensive flavor ban, including menthol?

Appendix 3: Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No. Item	Guide Questions/Description	Comments
Domain 1: Research Team and Reflexivity		
<i>Personal Characteristics</i>		
1. Interviewer/Facilitator	Which author/s conducted the focus group?	D.C. and S.W. conducted focus groups.
2. Credentials	What were the researcher's credentials?	Summer Woolsey, BA, TTS, Kaeli Samson, MA, MPH, Athena Ramos, PhD, MBA, MS, CPM, Keyonna King, DrPH, MA, Delwyn Catley, PhD, Hongying (Daisy) Dai PhD
3. Occupation	What was their occupation at the time of the study?	Summer Woolsey (Graduate Student), Kaeli Samson (Biostatistician), Athena Ramos (Associate Professor), Keyonna King (Assistant Professor), Delwyn Catley (Professor), Hongying Dai (Professor)
4. Gender	Was the researcher male or female?	Summer Woolsey (Female), Kaeli Samson (Female), Athena Ramos (Female), Keyonna King (Female), Delwyn Catley (Male), Hongying Dai (Female)
5. Experience and Training	What experience or training did the researcher have?	Summer Woolsey (tobacco treatment specialist), Kaeli Samson (biostatistics), Athena Ramos (qualitative research, health disparities, tobacco control research), Keyonna King (community based participatory research, qualitative research, and health disparities research), Delwyn Catley (qualitative research and tobacco control research), Hongying Dai (tobacco research and vaping prevention)

<i>Relationship with Participants</i>		
6. Relationship established	Was a relationship established prior to study commencement?	There was no prior relationship between participants and investigators.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? E.g., personal goals, reasons for doing the research	Participants were provided with an information sheet and consent form, which outlined the aim of the study.
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g., Bias, assumptions, reasons, and interests in the research topic	Participants knew the investigators were researchers with expertise on tobacco control and community engagement.
Domain 2: Study Design		
<i>Theoretical Framework</i>		
9. Methodological orientation and theory	What methodological orientation was stated to underpin the study? e.g., grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Thematic Analysis
<i>Participant Selection</i>		
10. Sampling	How were participants selected? e.g., purposive, convenience, consecutive, snowball	Purposive
11. Method of approach	How were participants approached? e.g., face-to-face, telephone, mail, email	Participants were contacted via email to complete an initial survey and asked to report if they would like to participate in a focus group.
12. Sample Size	How many participants were in the study?	There were 31 participants.
13. Non-participation	How many refused to participate or dropped out? Reasons?	Three participants signed up for a focus group but did not show. No other participants dropped-out.
<i>Setting</i>		
14. Setting of data collection	Where was the data collected? e.g., home, clinic, workplace	Focus groups were conducted online through a private virtual meeting call

15. Presence on non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of the sample	What are the important characteristics of the sample? e.g., demographic data, date	Stakeholder category and state
<i>Data Collection</i>		
17. Interview Guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	A moderator elicited discussions using open-ended questions and clarification probes on issues related to the key constructs of interest described in Table 2. The questions were refined by a third-party reviewer who is a tobacco control expert.
18. Repeat Interviews	Were repeat interviews carried out? If yes, how many?	None
19. Audio/Visual recording	Did the research use audio or visual recording to collect the data?	Yes, both audio and video were recorded for each focus group
20. Field Notes	Were field notes made during and/or after the interview or focus group?	Yes, a researcher took notes as an observer
21. Duration	What was the duration of the interviews or focus group?	Approximately 60 to 75 minutes
22. Data Saturation	Was data saturation discussed?	Yes. After conducting focus groups with each available participant, the research team present during the focus groups agreed that saturation had been met for each question and no further recruitment of participants should take place.
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No
Domain 3: Analysis and Findings		
<i>Data Analysis</i>		
24. Number of coders	How many coders coded the data?	2
25. Description of the coding tree	Did authors provide a description of the coding tree?	Coding under each theme is provided.

26. Derivation of themes	Were themes identified in advance or derived from the data?	Thematic analysis was performed using a hybrid approach of inductive and deductive coding and theme development.
27. Software	What software, if applicable, was used to manage the data?	None
28. Participant checking	Did participants provide feedback on the findings?	No
<i>Reporting</i>		
29. Quotations Presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g., participant number	Yes, participant quotations are provided in Tables 2-5. Each quotation was identified using a focus group number.
30. Data findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of Major Themes	Were major themes clearly presented in the findings?	Yes, major themes are presented in the results section
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes	No sub-themes were generated

Biography

Summer Woolsey is an August 2022 Master of Public Health (MPH) candidate at the University of Nebraska Medical Center (UNMC). She is pursuing her MPH with an emphasis in health promotion. She received her Bachelor of Arts degree in History and Anthropology from the University of Texas at Austin. Summer's public health interests include health communication, community-engaged research, tobacco control, health behavior, and mixed-methods research methodology.

While completing her MPH, Summer served as a Research Coordinator for Dr. Daisy Dai in the Department of Biostatistics, facilitating several tobacco control research projects as well as developing and implementing a tobacco use prevention intervention for youth. She also served as a Teaching Assistant for Dr. Shireen Rajaram, assisting with the *Foundations in Public Health* course in the spring of 2021. Summer was chosen as a recipient of the 2021 Alice Friedlander scholarship from the Nebraska Medicine Guild and was named the 2021 Volunteer of the Year from the Metro Omaha Tobacco Action Coalition (MOTAC). She was one of two students selected from the College of Public Health to serve as a cohort member for the 2021-2022 Leadership Education in Neurodevelopmental Disabilities (LEND) Fellowship through the Munroe-Meyer Institute. Additionally, she was one of six students chosen from across the nation for the American Journal of Public Health's (AJPH) Student Think Tank Fellowship, serving as an advisor to the AJPH editor-in-Chief, Dr. Alfredo Morabia.

Curriculum Vitae

Summer Woolsey

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EDUCATION

- 2022 MPH University of Nebraska Medical Center (UNMC), Health Promotion
Omaha, NE
Capstone: *Exploring Stakeholder Attitudes Towards Tobacco 21 Implementation, Enforcement, and Outcomes.*
Committee: Dr. Athena K. Ramos (chair), Dr. Daisy Dai, Dr. Keyonna M. King
- 2014 BA University of Texas at Austin, Anthropology & History

PROFESSIONAL EXPERIENCE

- 2021-2022 American Journal of Public Health Student Think Tank Fellowship, Washington D.C.
- 2021-2022 Leadership Education in Neurodevelopmental Disabilities (LEND) Fellow, Munroe Meyer Institute, Omaha, NE
- Spring 2021 Teaching Assistant, *Foundations in Public Health*, Dr. Shireen Rajaram, University of Nebraska Medical Center

RESEARCH EXPERIENCE

- 2021-2022 Research Coordinator for Dr. Daisy Dai researching tobacco control and prevention interventions

POSTERS

2022. Woolsey, S., Samson, K., Ramos, A., King, K., Catley, D., Dai, H. "Exploring Stakeholder Attitudes Towards Tobacco 21 Implementation, Enforcement, and Outcomes." 2022 College of Public Health Student Research Conference. Omaha, NE

HONORS / AWARDS

- 2022 UNMC College of Public Health Student Research Conference Winner
2020 Volunteer of the Year, Metro Omaha Tobacco Action Coalition
2021 Alice Friedlander Memorial Scholarship, Nebraska Medicine Guild

MEMBERSHIPS / AFFILIATIONS

American Public Health Association
Public Health Association of Nebraska
Metro Omaha Tobacco Action Coalition
Society for Health Communication