Exploring the Attitudes and Experiences of Those Living Near a Multipurpose Recreation Trail in the Southern United States

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Objective: To encourage engagement in health behaviors, communities have developed outdoor physical activity facilities such as multipurpose trails, including trails that have been converted from unused railways. A recent review called for more qualitative investigations related to these trails, which may inform future development and management of these facilities by ensuring accessibility and usability among diverse community members.

Methods: Twenty adults in Mississippi who lived along a rail-to-trail participated in semi-structured interviews. Those interviews were transcribed and analyzed using thematic analysis to identify relevant themes.

Results: Three themes were constructed: The trail is an abundant resource, you need to take precaution on the trail, and the trail is a point of community pride. Subthemes for the first theme were that the trail is a place for healthy recreation, it provides an escape, and it supports social life. Subthemes for the second theme were that you must take the design of the trail into account when using it, women are targets on the trail, and road intersections are dangerous. No subthemes were apparent in the third theme.

Conclusion: This study identified important attitudes and concerns held by those who live near a multipurpose rail-to-trail. The trail, while seen as an important resource for recreation and healthy living, is also seen by many as risky to use, particularly when alone or at night. These findings can inform the work of those who design, develop, and maintain these facilities as well as clinicians and educators who encourage people to engage in healthy outdoor activities.

Key words: trail; physical activity; environment; nature engagement; safety; community health

Lifestyle factors and the nearby environment are vital contributors to physical health, mental health, and overall well-being. ([Authors, 2022]; Egger, 2018; Loef & Walach, 2012; Walsh, 2011). Despite the relatively extensive evidence about the benefits of a healthy lifestyle, many people still fail to engage in healthy behaviors at an optimal rate (e.g. Matthews et al., 2017), which is likely impacted by a variety of environmental factors (Dixon et al., 2021). For example, access to nearby health-promoting facilities can influence one's engagement in healthy lifestyle behaviors (Sallis et al., 2012). This study represents an effort to explore the personal experiences and attitudes toward a nearby multipurpose trail that was converted from an unused railway (rail-to-trail) in a sample of participants in the Southern United States.

Lifestyle and Health

Much effort has been spent on the promotion of physical activity, as it predicts both mental and physical health across the lifespan (Booth et al., 2012; Buecker et al., 2020; Kandola et al., 2019). Research has shown that the prevalence of physical inactivity is especially high in rural areas of the United States compared to urban areas (Matthews et al., 2017). It is likely that lower incomes and limited access to exercise facilities – including suitable *outdoor* facilities that are close to home and safe – are contributors to this disparity (Brownson et al., 2004; Reed et al., 2004; Robinson et al., 2014).

Along with physical activity, contact with natural environments can also promote important health outcomes ([Authors, 2022]; Bratman et al., 2019; Mygind et al., 2019; Twohig-Bennett & Jones, 2018). Nature is often defined as features of the environment that are of a non-human origin, such as flora and fauna, water features, and the open sky (Hartig et al., 2014). Baxter & Pelletier (2019) have argued that connection with nature should be seen as a basic psychological need, of the same category as having meaningful work and a sense of belonging.

Nature engagement may benefit human health via a variety of biopsychosocial factors ([Authors, 2022]) and when people spend time in nature, they also tend to engage in other healthy behaviors, such as social interaction and physical activity ([Authors, 2020]; Hartig et al., 2014).

Engagement with nature and physical activity may be particularly important for certain areas such as the Southern United States because of the substantial health disparities present there (Miller & Vasan, 2021). Rates of physical activity are low in the Southern United States (Buchowski et al., 2004) – for example, the state of Mississippi has a 30.0% rate of physical inactivity compared to the national average of 22.4% (El-sadek et al., 2015) and 67.9% of Mississippi residents are overweight, with a BMI of 25 or greater (Centers for Disease Control, 2012). While there is little evidence for state-by-state differences in nature engagement, there are racial differences, with Black individuals recreating outside much less than White individuals – likely stemming from a history of discrimination (Lee et al., 2022). That may have important implications for nature engagement in the Southern United States, which has a higher proportion of Black residents. In sum, past findings demonstrate significant problems with overall health and participation in physical activity in the Southern United States.

Nearby Outdoor Facilities and Health

Nearby exercise trails may be useful in promoting physical activity and engagement with nature. Access and nearness to attractive public spaces has been shown to be associated with higher levels of physical activity (Abildso et al., 2007; Brownson et al., 2004; Hartig et al., 2014). Park users are more likely to meet recommended levels of physical activity (Hooper et al., 2020) and trail usage and overall physical activity are positively correlated (Evenson et al., 2005). As such, nearby trails could promote physical activity, engagement in nature, and potentially other healthy behaviors such as social engagement (Brownson et al., 2000; Scherrer

et al., 2021). One specific form of trails are rail-to-trails, which are developed on old, unused railways and can be used for a wide variety of healthy, outdoor recreation activities. These trails "create usable mobility space, and are often characterized by gentle gradients, hard surfaces, and are in close proximity to nature" (Scherrer et al, 2021). Despite the evidence that access to community facilities and recreational trails promote health behaviors *on average*, there are few studies that have examined the personal experiences and perspectives of those that live next to these trails (Scherrer et al., 2021). These individuals, who presumably possess optimal access to nearby trails, may provide interesting insights related to why they do or do not utilize the trails, and how their lives and communities are impacted by the trails. Perceptions of those trails may play an important role in rates of use. For example, even when trails are nearby, low-income minority individuals are less likely to use greenways or urban trails (Reed et al., 2004; Coutts & Miles, 2011). If the goal of community leaders is to provide healthy recreation for all members of the community, more insight into perceptions about these trails may be important to design them for optimal usage (Grill et al., 2020).

Frameworks for Understanding Trail Usage

The Outcome-focused management (OFM) framework can help conceptualize management of recreational facilities within the context of the diverse benefits they can provide (Stein & Anderson, 2002). These benefits can include those obtained by individuals, groups, communities, or the environment itself and can be both short-term (i.e. occurring during the recreation experience) and long-term (lasting beyond the experience). Managers of facilities are not necessarily aiming to directly provide all of these benefits during the actual experience (e.g. reduced mortality), but rather, they intentionally manage the facility such that it provides opportunities for individuals and the community to attain their desired benefits (Stein &

Anderson, 2002; Kil et al., 2021). Recent research suggests that people are motivated to participate in outdoor recreation activities in order to achieve desired recreation experiences that stem from activity choice, setting characteristics, personal experiences, and perceived benefits (Kil et al., 2021). Another aspect of the OFM framework is that it makes space for potential negative outcomes that stem from recreation experiences (Morse et al., 2022). Overall, the OFM Framework supports the idea of achieving perceived benefits through a combination of recreation activities and settings.

Research also indicates that the theory of place attachment influences an individual's desire and need to interact with outdoor recreational facilities (Buta, 2014). Place attachment is understood as an individual's sense of connection with a specific environment which stems from past experiences with that place and the various meanings the place can take for that person based on those experiences (Kil, et al., 2012; Kil et al., 2014; Williams, et al., 1992). The meanings can include thoughts and feelings about the place's role as a contributor to individual identity, family identity, community identity, the economy, and the local ecology (Kil et al., 2014). Also included within place attachment is the level of dependence that a person has on a given place as a resource which can provide for their needs and goals. For example, place dependence may relate to a facility's capacity to support an individual's personal goal for engaging in physical exercise (Kil, et al., 2012; Williams, et al., 1992). Examining factors that might impact place attachment could be helpful for trail management. Further, the various components of place attachment, including the meanings of the place and perceptions of its ability to meet needs can be seen as outcomes within the OFM framework (Kil et al., 2014), linking these two frameworks together.

Current study

The present qualitative study examined the perceptions, attitudes, and experiences of individuals who live next to a nearby multipurpose trail in the southern United States. Perceptions are understood as the result of recognizing and then organizing and interpreting a stimulus relative to past experience (Pickens, 2005). Related to perceptions, attitudes involve an overall evaluation of something that includes attributions such as good or bad, or likeable or dislikable (Ajzen, 2001). In this study, experiences were understood as people's actual previous engagement with a rail-to-trail. This study assessed the benefits and drawbacks of living next to a multi-purpose trail, what role (if any) the nearby trail plays in daily life, and the ways in which a multi-purpose trail impacts the nearby community and city. By studying those who live close the trail, we could highlight the personal perspectives of those who might have the most personal experience with the trail. Further, by recruiting a sample that lives close to the trail, we were purposefully attempted to reduce distance and access as potential barriers to trail usage to examine what other barriers and facilitators might be present. Due to the nature of the questions and a desire to comprehend the personal and subjective interpretations and experiences of the participants, a qualitative approach was deemed necessary (Braun & Clarke, 2020; Sofaer, 1999). In response to ongoing efforts and funding spent on the construction of these trails for the promotion of healthy outdoor recreation, the hope was that the experiences of these community members could help inform the trail design, management, and promotion.

Methods

Sample

Twenty adult participants were recruited from twelve geographic sections along the paved, 44-mile Longleaf Trace (the Trace) rail-to-trail in South-Central Mississippi (see Setting for more information). Each recruitment section extended $1/10^{th}$ of a mile distance away from the

trail on each side. Seven of the areas were contiguous urban neighborhoods within Hattiesburg, MS, while the other five areas were non-contiguous rural areas in Lamar County, MS. Door-to-door recruitment, which took place over a seven-month period, resulted in at least one individual from each of these 12 areas. Any English-speaking adult that had lived in that location for at least a year was eligible to participate in this study. Individual participant and whole-sample characteristics are reported in Tables 1 and 2. The targeted sample size was set a priori to be twenty, relying on empirical investigations of sample sizes needed for saturation (e.g. Hennink & Kaiser, 2022) and characteristics of information power (Malterud et al., 2016). We deemed that the relatively narrow study aim, specific sample, and the potential for rich dialogue suggested that a moderate sized sample would be adequate.

Table 1.

Sample characteristics

Variable	Count	Percentage
Age		
18-24	3	15%
25-35	4	20%
35-44	5	25%
45-54	1	5%
55-69	3	15%
70+	4	20%
Gender		
Female	10	50%
Male	10	50%
Race		
White	10	50%
Black	8	40%
Multi-racial	2	10%
Employment status		
Student	2	10%
Working part-time	2	10%
Working full-time	8	40%
Other	2	10%
Retired	6	30%
Current Trace usage		
Never	2	10%
Rare	6	30%
Occasional	3	15%
Frequent	9	45%

Current Trace usage categories. Frequent = weekly or more. Occasional = weekly to monthly. Rare = less than monthly. Never = has not used the trace.

Setting

The Trace extends from downtown Hattiesburg and passes to the West and North through rural towns including Sumrall, Bassfield, Carson, and ends in Prentiss (See Figure 1). The three main counties that the Trace passes through are Forrest, Lamar, and Jefferson Davis Counties. The median household income for these counties was estimated across 2017 to 2021 to be $45,780, $63,925 and $34,771 respectively, with poverty rates of 20.1%, 11.8%, and 25.2%, and

the proportion of residents who are Black or African American being 37.4%, 22.2%, and 59.6% (United States Census Bureau, n.d.). Rates of physical inactivity are 30%, 25%, and 33%, with rates of adult obesity being 39%, 37%, and 46% (University of Wisconsin Population Health Institute, 2023). The trail was converted from abandoned rail lines as a conservancy project in 2010 and is governed by the Pearl & Leaf Rivers Rails to Trails Recreational District. The majority of the Trace is a wide paved path that cuts through a mix of tree-lined areas and buildings within Hattiesburg and rural forested areas in the county land. Within limited portions of Hattiesburg city limits, the Trace is essentially a wider sidewalk, with a substantial road verge along a two-lane road.

Table 2.

Participant Characteristics

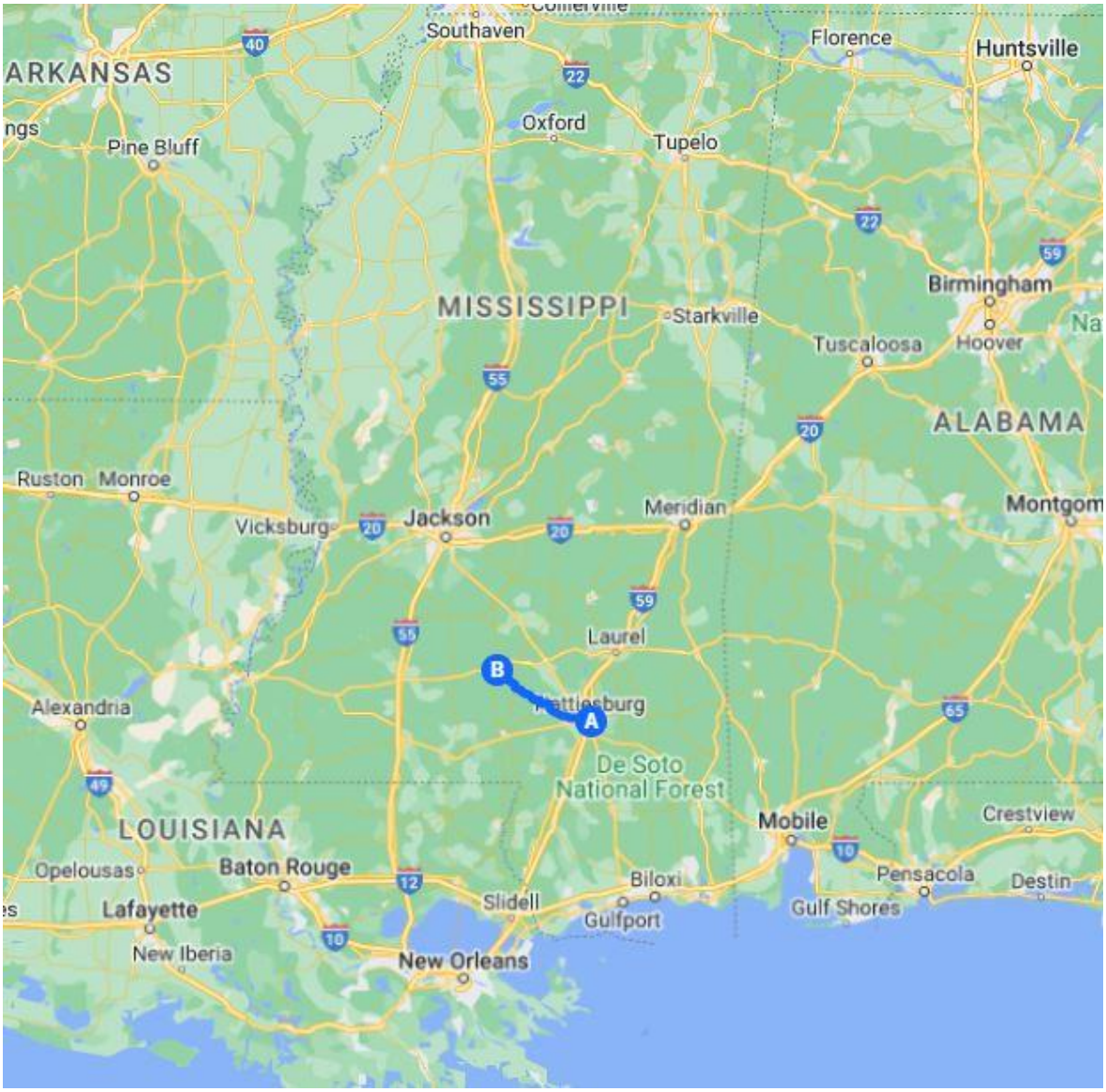
Pseudonym	Age Range	Gender	Race	Employment Status	Current Trace Usage
Danielle	18-24	F	White	Working part-time	Rare
David	18-24	M	Black	Working full-time	Frequent
Morgan	18-24	F	Black and White	Student	Occasional
Andrea	25-34	F	Black	Working full-time	Occasional
Courtney	25-34	F	White	Student	Occasional
Nathan	25-34	M	White	Working full-time	Frequent
Wesley	25-34	M	White	Working full-time	Frequent
Anton	35-44	M	White	Working full-time	Frequent
Charles	35-44	M	Asian, Black, and White	Other	Frequent
Darren	35-44	M	White	Working full-time	Frequent
Dominique	35-44	F	Black	Working part-time	Rare
Holly	35-44	F	Black	Working full-time	Rare
Tanya	45-54	F	Black	Other	Never
Ernie	55-69	M	Black	Retired	Rare
Laurie	55-69	F	White	Retired	Rare
Yvonne	55-69	F	Black	Retired	Frequent
Bernard	70+	M	Black	Retired	Never
Herbert	70+	M	White	Retired	Frequent
Scott	70+	M	White	Working full-time	Frequent
Suzanne	70+	F	White	Retired	Rare

Procedures

Participants for this study were recruited via door-to-door canvasing over a 7-month period. Upon first contact, individuals received an initial description of the study and were invited to receive more information if they were interested. Interested individuals were provided detailed information about the study including information about risks and benefits as part of an informed consent process. Once participants agreed to participate in the study, they were given the choice to have semi-structured interviews conducted either in-person or via Zoom video conferencing software (www.zoom.us). These interviews were administered by the first and second author, and were usually, but not exclusively, scheduled for a later date. The interviews typically lasted a total of thirty to forty-five minutes and were audio recorded. Example questions included, “Can you tell me what you think about the Longleaf Trace?”, “Can you tell me about why you do or do not use the Trace?”, and “Can you tell me what role, if any, you think the Trace plays in the community?” Participants were also asked about the perceived benefits and drawbacks of living next to the trail as well as their sense of safety. A total of 40 participants initially expressed interest in the study, but half of these participants did not participate for a variety of reasons such as a lack of time to do the interview or simply not responding to follow-up calls and emails.

Figure 1

Location of the Long Leaf Trace



Google Maps. Retrieved May 12, 2023 from https://www.google.com/maps/d/u/1/edit?mid=10hFZYnBLrzLFg_jSUw_u1vJBY4EZdoc&usp=sharing. A map of the Longleaf Trace stations is currently available at https://www.longleaftrace.org.

Analysis

Microsoft's Speech-to-Text service was initially used to transcribe the audio files (Microsoft, 2022; Shadiev et al., 2014). At least two research team members audited these transcriptions while listening to the audio, making edits to ensure that the transcription was accurate.

This study utilized thematic analysis following the principles identified by Braun & Clarke (2006; 2021). Thematic analysis typically occurs in a series of six phases: familiarization with the data, generating initial codes, reviewing the codes and constructing initial themes, reviewing the themes, naming the themes, and writing the report (Braun & Clarke, 2006; 2021). In line with these phases, the first two authors first read the transcripts and listened to the audio files while recording initial ideas. The transcripts were then independently coded by the first two authors using the comment feature in Microsoft Word, by labeling sections of the text with meaningful phrases or descriptions. After coding an initial subset of transcripts, the first two authors met to ensure that a generally consistent approach to coding was being applied. The codes and related selections of text were exported using DocTools ExtractData software (Fredborg, 2021) to a Microsoft Excel file for further analysis. After coding was finalized, the first two authors initially met to discuss the codes and to identify initial themes and subthemes. After deciding on an initial set of themes and subthemes, the third author was invited to familiarize themselves with the codes and to provide feedback on their perceptions of the themes. Over a period of multiple meetings, the authors came to a consensus on the strongest and most relevant themes based on the codes. Names were created for the themes and the final phase consisted of selecting participant quotes and producing the final report.

Results

Overall Experience with the Trace

The participants in this study were all generally familiar with the Long Leaf Trace. All participants knew where the Trace was, relative to where they lived, but had distinctly different patterns of usage of the Trace, ranging from regular use of about 5 times a week, to having never used it. Of note, while all the individuals lived within 1/10th of a mile (.16 km), accessing the Trace was not especially convenient for a minority of participants as it involved crossing a relatively busy two-lane road, usually without crosswalks. This was mentioned by some participants and noticed by the research team when walking around the various neighborhoods.

While patterns identified in this small sample cannot be generalized in the same way a larger quantitative sample could, some patterns of use existed among the participants, with older adults, particularly women, using the Trace less often. Common reasons included physical impairments that affect mobility and, particularly for the women, concerns about personal safety. The two people that never used the Trace were Black, and two of eight Black participants were frequent users while six of ten White participants were frequent users.

Theme 1: An abundant resource

This theme coalesces around the comments made by participants emphasizing their feelings and perceptions that the Trace can be viewed as a resource. Despite differences in the ways in which the Trace was used and perceived by community members that live close to it, universally, they saw it as a useful feature of the environment. Three subthemes were constructed focusing on 1.A) the trail as a place for healthy recreation, 1.B) the trail as an escape, and 1.C) the trail's role in promoting social engagement.

Subtheme 1.A: A place for healthy recreation

Participants described the trail as a place that supports various types of outdoor recreation including running, biking, walking and skating. Courtney, who utilizes the trail recreationally for walking and previously used it to commute by bike stated:

> "I think the trail plays an important role in providing an area for people to walk, bike, or run. The trail is also nice because there are mile markers so people can know how many miles they have gone when they exercise which is easier when compared to just running on the street."

Darren also spoke to the variety of ways it can be used as "it's actually good for walking and jogging and, you know, any kind of exercise really." Many participants described the trail as contributing to their participation in outdoor physical activity because of the convenience, affordability, and practicality of the trail. Andrea said that she feels like the free cost to use the trail supports her exercise habit because "some people don't have the money to go to the gym everyday." Anton reported that people looking for jobs or higher education in the area see the Trace as a major draw because they look forward to walking, running, or biking on it. The notion that the trail is utilized and appreciated in the community is summed up by Yvonne's comments on the trail:

> "I think it provides opportunity that a whole lot of other cities wish they had, for physical exercise and getting out and enjoying the sunshine and the fresh air."

Overall participants regularly described the trail as a place that provides opportunity for various types of outdoor recreation and encourages engagement in physical activity.

Subtheme 1.B: An escape

The trail was described as a way to escape by many participants – a space where one could engage with nature and have mental and physical separation from different aspects of daily life. Ernie said that the trail is great when "you just want to get out and go walking." Trees line most of the Trace, which provides shade and exposure to a variety of different plant and animal species. Participants mentioned that the Trace allows them to enjoy the "sunshine and fresh air" (Yvonne) and "just feel the breeze and be out in nature" (Holly). Furthermore, the trail was described by many as a place to "clear your mind" (Andrea), and Herbert said, "when you are out there, you feel more relaxed you just can let things go" speaking not only to the way the Trace can provide an escape physically, but also mentally from daily stressors. Many participants mentioned how being on the trail led them to feel more connected to nature and to appreciate the environment around them especially during the summer and spring months. Scott stated:

> "I just love the sky, the trees, just everything about nature is quite attractive to me and again the Longleaf Trace… is a wonderful place to do that, because you do get out of the city quite quickly and you can observe things that you would not typically observe in the city."

Courtney also added that "I think observing nature is good too. That's a positive of having the Trace – it gives you a place to walk and be able to look at that." However, Herbert commented on how others seem to fail to fully escape on the Trace as they are "supposed to be out for enjoyment" but they "have those cell phones – looking down that they almost run into you." He suggested putting away headphones because while there "might have been beautiful music they were listening too," he said "the birds were tweetin' beautiful music and you get the outdoor sounds." Lastly, connecting both this and the previous subtheme, Morgan said, "Me personally, I don't really like to be inside in a gym, like I'd rather run on a trail."

Subtheme 1.C: The Trace supports social life

Participants mentioned that the trail can promote social engagement, ranging from connecting with family and friends, meeting new people, and bringing community members together. Wesley, who used the trail to go on walks with his spouse said the Trace:

> "gives us the chance to kind of catch up with each other and have a conversation about life and where we're both kind of at. So, you know, from an individual standpoint, and from a relation standpoint it's good for us."

Others describe the Trace as providing them a place to have bonding time with their children or grandchildren while engaging in recreation together. Darren, who has children, said "It's been great for the kids and me and the community I think" and Anton described his families use by saying, "We go walk, have fun, tell jokes and stuff like that." Further, Nathan, who was raised in the area said, "my Dad and I – we ride bikes a lot together, so we used [the Trace] when I was growing up as a kid."

The trail was also perceived as a place where you could meet up with others, including seeing people they already know or new people while on the trail. For example, Danielle said it was nice when they used the trail that she saw "a good amount of people that we knew that would stop and say 'Hey!' – they'd honk or something." Some participants mentioned that they enjoyed having unexpected chances to meet people out on the Trace, including the opportunity to meet tourists from out of state.

Many participants discussed the local group activities that take place on the trail which can promote social engagement. Darren discussed a bike shop that organizes group bike rides of 10 to 20 people from the nearby communities. In addition to community group bike rides multiple participants mentioned that the Trace supports running and biking races, which seem

popular. Tanya, who, due to physical limitations, can't use the Trace but enjoys watching people use it, appreciated that "a lot of kids from Southern, they jog on it and there's a lot of running groups." Overall, the trail was described as a promoter of social life by providing a place to engage in joint activities with personal relations or with community members.

Theme 2: Take precaution on the trail

Participants in this study commonly discussed the need to be careful on the trail for various reasons. Many of the concerns participants had about safety on the Trace stemmed from one or more previous criminal incidents that the participants were aware of or had heard rumors of. Dominique, who rarely used the trail, said that "a few things happened in the past that kind of steered me away from really wanting to walk in it" and "[I'm] not going up there. Not going to risk myself." Holly, who had transitioned into using the trail less over the recent years indicated that she "did hear some instances about an attack maybe," which represented the common sentiment that no specific incidents were known by many of the participants, yet the rumors were still having an impact. In connection with these concerns, three subthemes were constructed that align with this overarching theme: 2.A) there is a need to take the design of the trail into account, 2.B) women are targets on the trail, and 2.C) intersections can be dangerous.

Subtheme 2.A: Take the design of the Trace into account

There was a perception among many, that the design of the trail is part of what was encouraged the past criminal actions, and a general lack of safety. Outside of the most central parts of the cities, the trail has a dense tree line within about 10-15 feet of the pavement, running along one or both sides of the trail. In Andrea's words, "there is no telling who is there and there's a lot of hiding spots." When using the Trace, multiple participants reported seeing individuals who were assumed to be homeless just beyond the tree line. Looking down from the

trail, Morgan reported seeing people “just kind of moving around in the trees” and that “I’ll see movement or hear movement, and it’ll freak me out.” Danielle, who had gone on a run with friends around sunset, indicated that they tried to “hurry up to make sure we were in visible sight” which is more feasible on the more urban portions of the trail. Similarly, Suzanne, who chose to use other walking locations in the area despite the Trace’s proximity, stated it was because at these other community trails, she can “see other people and other people can see me.” This contrasts to parts of the Trace that have “more trees and are isolated…areas that the public cannot see what’s going on.” Along with the tree line creating hiding spots, the “long stretches” (Scott) of the trail without entrances or exits also make some people concerned. All these factors combined, are summed up by Anton who, along with his family members regularly use the Trace, but not at night:

> “I don't think it's safe [at night]. I mean, you can find homeless people or anything like that come out and it's very secluded, so I mean nobody would hear you if you try to scream or try to get away. So, it'll be out of a horror movie to be honest, if somebody came out of the dark.”

Most people who use the Trace engage in out-and-back type runs or bike rides, as the trail does not form a loop. Some expressed the sentiment that one needs to conserve energy for the trip back, both to avoid dehydration, being at risk physically in other ways (i.e. Courtney: “if you get hurt and nobody knows”), but also out of concern of being the victim of a crime without energy to get away.

Complaints around lighting were common and using the Trace during the night was seen as unsafe, especially if alone: “Maybe don’t just go out jogging or walking by yourself at night because sometimes people may do things they shouldn’t do” (Holly). Andrea said that at night

"It's like you can't see on that trail at all" and if "it is getting close to dark…I know I can't be on the trail that long." In general, people recommend using the trail with others and during the day as ways to deal with the design of the trail. For example, as Yvonne stated,

> "I've never been alone because I'm smart enough. … If I go then I bring my husband and we go walking together or me and my granddaughters, and we go together or me and a friend. I've done all of the above whenever I go…so I do not feel like it's unsafe."

Overall, the design of the trail was said to elicit fear because of the perceived seclusion of the trail and the surrounding trees.

Subtheme 2.B: Women are Targets on the Trail

Many participants, irrespective of gender, reported that women were particularly vulnerable on the Trace and thus needed to take extra precaution. Many females and some males reported hearing about various assaults toward women on the Trace ranging from "a couple of rapes" (Laurie), to "a couple of incidents" (Suzanne), to "some harassments" (Bernard), to "a woman being attacked" (Danielle). The participants did not usually have the details of the incidents in mind, recognizing "I just heard that one story…and I can't even relate to how long ago or when" (Yvonne), and the information usually comes "just by hearing word of mouth" (Dominique). Of note, not all of the reported assaults had female victims, yet in general, women were seen as at higher risk.

Along with the secondhand experiences, Morgan retold a frightening experience that left her "running for [her] life":

> "It was like in the daytime, just like any afternoon. I went on a run, and I ran like a good amount… and I was on my way back, so I was already tired. A homeless man was riding by me on a bike and he was like, "Hi, how are you?" And like, I usually have earbuds in

> when I run. And then he was following me, trying to make conversation because I won't run the whole time, I'll walk. So, at that point I was walking. So, then he kind of slowed down like rode by me and was asking for a hug – said I look like so-and-so celebrities or something. And then I ended up starting running again and he kind of turned around. And started going behind me. I was running for my life – I didn't walk anymore."

Despite not referencing any assaults on women specifically, other male participants expressed concern for women's safety on the Trace. Anton indicated, "As long as I'm with [my family], I feel that we're safe. But if my wife was alone, I'd always have that concern." Scott, who regularly used the Trace also indicated his concern: "When I see – not to be overly gender specific about this – but when I see a young woman out in the long stretches of this trail by herself, that does concern me a little bit right there."

In light of all of this, the participants indicated women should not travel alone. For example, Suzanne reported "I would not go on it as a woman by myself because I feel like it's a little bit dangerous to do that." Danielle noted that the perceived higher risk for women is not unexpected: "I think that just comes with… always having your guard up as a woman, being anywhere by yourself or with just one other person you know. You always have your guard up with that." The design features of the trail and the perceived natural vulnerability of women were seen as making the trail a place where women have to take extra precautions.

Subtheme 2.C: Road Intersections are Dangerous

Although participants lived in various areas along the trail, ranging from areas where the trail is essentially a wider sidewalk alongside a major city road, to areas where the trail runs through forests and road intersections are up to 2.5 miles apart, many reported the danger around the trail-road intersections. Bernard, who lived in the city spoke to the need to be careful of the

intersection at the end of his street: “When I go to the corner, I stop before I get to the stop sign because the trail is before the stop sign” and “I’ve seen some people just go right through it.” He indicated that as the intersection is currently set up, drivers do not inherently know to expect cross-traffic on the trail, but “once you live in the area” you learn to approach it more safely. The signage in some areas was deemed as lacking as “some people don’t see the flashing lights. Bikers and runners are over there and [the drivers] don’t think about that” (Andrea), while Suzanne said she is “real careful when I drive by…and when I’m passing it.” This mirrors Anton’s comment that “you have to be very careful while you’re driving past there because somebody must might surprise you with a bike or anything like that.”

Despite the precaution needed at the intersections, participants, including Courtney still recognized the trail as a way to “hopefully more safely” get around as “cars can’t be on the Trace.” This compares to the other main streets in town which are “not really safe to ride your bike on” (Morgan). Furthermore, Wesley stated that because of the lack of sidewalks in the area he and his spouse “try to use the Trace just because I don’t have to worry about traffic. Cars speeding through the neighborhood [is] definitely a problem around here, so not having to look over my shoulder to see if there’s a car coming up behind me is kind of nice.”

Theme 3: A Point of Community Pride

Many participants described the Longleaf Trace in ways that designate it as a source of community pride. For example, some participants described the characteristics of the Trace that set it – and by extension, the community – apart. The Trace was seen by some, including Bernard, as a big city amenity as “all of the major cities have walking trails,” making the Trace something that a community of its size would be expected to have. Further elaborated by Yvonne, “I think it provides opportunities that a whole lot of other cities wish they had,” likely

due to perceptions that there are "not a lot of places have that direct, biking, walking path that people can take throughout the city" (Courtney). Herbert explained that "I think it's one of the best that I have seen and it's very good. It's served us well." By use of metaphor, David's description highlights the special status of the Trace with the city: "It's in the middle of the city almost… a good comparison would be the Nile River of the city. Essentially, the trail is a beacon of civilization, those around it are aware of its presence." Yvonne further elaborated, "I think it has given us a notoriety in a lot of ways" in part because it's development "put us out there in front of a lot of things that a lot of other cities have not done."

The special status of the Trace is further supported by participants' desire to share the Trace with visitors as a special attraction. Various participants described the Trace as something to share with visitors such as family or friends who are not from the area. Laurie said this includes during holidays, where "families have family in from out of town and they can actually go and rent bikes…and they can have family outings." Dominique showed the Trace to some visitors and said, "that was kind of cool to be able to show that off as part of Hattiesburg." Darren explained that when preparing his rental home, which is "right down the road from the rail trail," he "put[s] brochures and stuff from the Longleaf Trace on the counter so they can see that it's a block away." The community's efforts to promote usage of the Trace may be having a positive impact as prospective graduate students purportedly "all know about the Trace" and "want to get there with [their] bikes and/or want to run or walk…" (Anton).

The way the Trace is maintained and cared for was seen as both a representation of and a contributor to the Trace as a point of community pride. Bernard had particularly fond feelings and simply stated, "It's just beautiful the way they have it." Scott elaborated:

> …it's so well maintained and people I know come in from areas way outside of the Hattiesburg area and Prentice area and the Sumrall area and so forth to use it. And I think I've talked with many of them – just chit chat on the trail and they were very impressed with it."

And along with regular maintenance, the participants' perspectives on the local government's responses to the community's concerns further illustrate how proud the community is of the Trace. This has included the addition of more lights on the trail and emergency call stations. Laurie indicated that, "we had trouble with it to start – with things happening on it, but now I think they pretty well got that fixed" referencing the addition of lighting on the trail. Herbert said that "I like [the trail] because it's convenient and it's safe. There're police buttons all around the trail, in case something happens." In sum, across various perspectives the Trace is something the community is proud of and poignantly summarized by Bernard, "I think that it's one of the greatest things that has happened to this area."

Discussion

This qualitative investigation involving individuals living close to a rail-trail (the Trace) in south central Mississippi brought to light a variety of attitudes and perspectives about the Trace. The Trace's clear role as a rich resource for facilitating physical activity, nature engagement, and social well-being is contrasted with perceptions of risk and the necessity of precaution when using it. These concerns about safety were significant enough that certain individuals reported not using the Trace, sometimes preferring other environments with different characteristics. Most people had not described personally experiencing any threats on the Trace, but nonetheless it was common for people to perceive that characteristics of the Trace might make it unsafe, especially for specific groups, when alone, or at night. Macaulay and colleagues

(2022) found that characteristics of the environment greatly impact how nature activities are experienced and interpreted. Similarly, research has shown individuals' perceived safety is a prerequisite to engaging with natural environments (Hartig et al., 2014). Furthermore, the perception of safety has also been shown to be an important predictor for physical activity levels (Rees-Punia, 2018), and is more strongly predictive of Body Mass Index than objective measures of crime (Richardson et al., 2017). Regarding the Trace specifically, the dense vegetation and lack of entrances/exits led to a sense of isolation and were characteristics that increased perceptions of fear. Yet, at the same time, it was the ability to "escape" into this more natural environment that was deemed as one of the Trace's central benefits. The OFM framework recognizes the possibility both of benefits and detriments when making design decisions (Morse et al., 2022). Thus, the degree of wildness and remoteness of rail-trails will require a weighing of these potential benefits and drawbacks.

In making considerations about design features of natural environments, it may be helpful to recognize that certain groups may be disproportionately benefitted or harmed. Many individuals indicated that utilizing the Trace with others decreased their perceptions of risk. If stakeholders err on the side of a wild, densely vegetated trail, those who have weaker or smaller social networks (e.g. older adults; Nicholson, 2012) may have fewer people to use the Trace with as a means to reducing risk. These more isolated individuals may not benefit from a nearby trail as they won't feel safe using it alone. Further, individuals with physical impairments, obesity, or mental health problems tend to have a heightened fear of crime (Cossman et al., 2016; Malambo et al., 2018; Rader et al., 2012) and thus may also be less likely to use a trail due to concerns about their safety. Black individuals in one study expressed preferences for a more built-up outdoor facility relative to White participants (Grill et al., 2020) and were more interested in the

social benefits of trail engagement in another study (Keith et al., 2018). As such, demographic shifts along rail-trails might necessitate an OFM perspective that includes preferences of the individuals who live most close to the trail. One of the benefits of the Trace's design is that there *are* sections with less vegetation and more exits, which although not always be convenient to access, at least provide the potential for visiting varied trail sections based on personal preferences. Overall, if one of the aims of these facilities is to promote healthy lifestyle among the traditionally underserved, special efforts may be required to design the facility with the perceptions and preferences of that population in mind.

The need to take precaution was especially relevant for women, largely because of past assaults that were reported to have occurred on the trail. Women often mentioned feeling at risk when using the trail or were more limited in their ability to use the trail. These concerns may be enhanced by feminine and masculine gender norms (Sánchez–López et al., 2012), including the ways in which males and females "should" engage in nature. In media, women are often depicted as playing less central roles in natural settings, and engaging in less rugged environments with a dependence on men (Henderson, 2000; Godtman et al., 2020). These cultural factors and the perceived lack of safety on the Trace may impact women's sense of place attachment with the Trace. The Trace may not be seen as providing a sense of personal or community identity for women and may not support their place dependence as it may not help them accomplish their goals. These factors may help explain why previous research has shown that nearby greenspaces tend to benefit men more than women (Crouse et al., 2017; Richardson & Mitchell., 2010) – women may not be able to engage with nearby greenspace as regularly or receive the same benefits as men, potentially due to impairments to place attachment.

Some strategies might help mitigate perceptions of risk. Structured changes could be made to the design of the rail-trail itself or by community partners (e.g. police), to make the environment equally safe for all individuals. Trail managers may be able to help facilitate social connections via walking groups to help mitigate risk (Morris et al., 2019)[1]. There is some evidence that accurate information about crime rates, mailed directly to citizens, can impact misperceptions of risk (Vinaes & Olsen, 2020). Further, ongoing assessment of community preferences could be used to help to address barriers to access (Smith et al., 2012). When viewing trail management with an eye toward resolving longstanding disparities (e.g. related to gender or race) it may help to allocate resources in a way that is aimed at alleviating those disparities, by designing the trails with those populations in mind.

With clear health benefits identified by the participants, facilities like the Trace may be especially important in areas like the southern United States because of the significant health disparities present there. The OFM perspective on managing these resources would emphasize that nearby trails have been shown to promote physical activity, and engagement with nature, which may in turn improve physical and mental health outcomes of individuals, families, and communities (Scherrer et al., 2021). Place attachment is also related to the proximity of trails to individuals' place of residence (Kil, et al., 2012; Moore & Graefe, 1994). This place attachment may only be enhanced by the Trace's capacity as an alternative means to transportation, with active travel being associated with positive health outcomes (Saunders et al., 2013). Additionally, it was common for participants to describe how the trail can be used as place to escape, both physically and mentally. The natural characteristics of the trail – the trees, the birds, the animals – were identified as important contributors to their ability to escape. The natural

[1] For example, the Longleaf Trace website links information about the Pine Belt Pacers, which provides opportunities for walking and running in groups on the Trace.

elements were seen as promoting a clearing of one's mind, enjoyment of sunshine and fresh air, and seeing interesting and/or beautiful sights. Place dependence on the Trace seemed very strong for many of the participants, as it met the needs of the participants in these ways.

The Trace was also seen as a promoter of social well-being, ranging from supporting personal relationships via shared activities to community engagement through races or local group activities. This aligns with Hartig and colleagues' (2014) description of social engagement as one of the mediators between nature engagement and health. Further, aspects of place attachment such as family or community identity appeared to be present for participants as the Trace provided a place for them to strengthen their family or friendship identities via meaningful joint experiences on the Trace (Kil et al., 2014). And, as apparent in the final theme, the Trace was viewed as a point of community pride as it was perceived as promoting community health and bringing positive attention to the community. From the place attachment perspective, the Trace was seen as a source of positive community identity, which can contribute to place attachment (see Davenport et al., 2010). This community pride and identity may translate to other positive outcomes such as life satisfaction, health, and safety (Yamada et al., 2011). Perceptions of the government's response to crime via increased lighting, police presence, and call buttons was seen positively. This response from stakeholders may have acted as a signal to the community of the status of the Trace, further enhancing feelings of community pride.

There are some potential limitations in this study, one of which is the role that the researchers' personal biases may have played in the study. The researchers are part of a team that investigates the benefits of nature engagement and as such, may not have seen the negative aspects of the Trace as clearly. The inclusion of the second theme and attending subthemes are some evidence against this bias, but further bias cannot be ruled out. Also, although a diverse

sample was attained, it may be that door-to-door recruitment during daytime and evening hours missed recruitment of certain individuals such as those working night shifts or those who have greater risk perceptions and were not willing to come to the door or engage in the study.

Future research may seek to implement a broader range of recruitment methods to counteract some of those potential limitations in recruitment. Further, mixed-methods approaches which combines the rich subjective perspectives of qualitative research with increased generalizability from quantitative research may extend the present research. For example, it may be helpful to begin to explain how personal opinions on nearby trails might cluster together based on quantifiable characteristics such as mental health symptoms, body mass index, or social connection. Ideally, future research might also integrate interviews with stakeholders and facility managers to supplement the information provided by community members. Lastly, all of this research could be enhanced with methods such as the "walk-along" interview, which can examine the in-the-moment experiences of participants (Carpiano, 2009).

Conclusion

The development of free, nature-based, publicly available community recreation and exercise facilities may be a central factor in building individual and community health. However, individual perceptions and experiences with those facilities are important factors to consider when attempting to encourage their use. This study identified important perceptions, attitudes, and concerns of individuals who live near a multipurpose rail-to-trail. From an outcomes focused management perspective the trail, generally seen as an important resource for individual and community health and well-being with benefits extending beyond the trail experience itself, was also described as a potentially risky environment. The findings from this study might inform the practice of those who are encouraging others to engage in healthy outdoor behaviors, as well as

those who design and develop these facilities to ensure they are maximally appealing and usable to diverse community members, especially if the goal is to reduce disparities.

Management implications: The development, promotion, and maintenance of community trails must rely on an understanding of local contexts and related safety issues as these may directly impact the usage of these trails. Design features of the trail (visibility, safe exits, isolation) are highly relevant to certain trail users' perceptions of the desirability of the trail, and as such should be highly relevant to trail management, especially as various underserved individuals may be disproportionately negatively impacted by certain features. The high levels of community pride in these trails should be leveraged by stakeholders to further promote them as important local/regional attractions, which can support health via physical activity, escaping into natural environments, and social engagement. Perceptions that local governments are engaging in ongoing management of the trail and being responsive to community member requests are an important factor in positive attitudes toward the trail.

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author, ARA. The data are not publicly available due to information that could compromise the privacy of research participants.