

# **The Role of Nature Engagement in the Satisfaction of Fundamental Psychological Needs across the Lifespan: A Thematic Analysis**

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## Abstract

Despite a broad array of research linking nature engagement to health and well-being, people seem to be spending less time in nature now relative to previous decades. The way in which nature engagement does or does not fulfill needs for individuals across the lifespan may impact their proclivity toward spending time in nature, but little is known about how people conceptualize the development of their attitudes and habits related to nature engagement. Using Self-Determination Theory as a guiding framework, this qualitative study relied on semi-structured interviews to examine the subjective experiences of twenty adults in Mississippi who were diverse in age and race to explore their nature engagement as a developmental phenomenon. Reflexive thematic analysis was used to construct themes from the data and to reveal rich insight into people's experiences in nature, and how their current engagement related to their experiences as a child, teenager, and adult. These perspectives were interpreted in relation to the ways in which satisfaction of the fundamental needs of relatedness, autonomy, and competence may have guided the developmental aspects of nature engagement. These findings may support efforts to encourage healthy nature engagement via nature-focused education and intervention practices.

Keywords: development, health, environment, nature engagement, self-determination theory

Time spent in nature has been linked to physical health, mental health, and connection to nature has been conceptualized as a basic psychological need (Adams & Savahl, 2017; Baxter & Pelletier, 2019; Coventry et al., 2021; Fretwell & Greig, 2019). Yet, there are concerns about reduced engagement in nature in recent decades (Larson et al., 2019; Pergams & Zaradic, 2008) driven by a variety of potential causes such as urbanization, lack of access, crime, prejudice, climate controlled indoor settings, and the growth of sedentary entertainment options (Hand et al., 2018; Frumkin et al., 2017; Robinson & Ridenour, 2012). Other factors may impact nature engagement either positively or negatively, such as family values around spending time in nature (Cheng & Monroe, 2012). These developmentally-relevant factors may be especially important, yet, little is known about the ways people personally conceptualize the developmental course of their relationship with nature and engagement in nature. This study examined the experiences and perspectives of a sample of participants in the Southern United States to begin to better understand the developmental course of nature engagement.

### **Nature and Health**

Nature engagement and nature exposure are associated with numerous mental and physical health outcomes, including diabetes, cancer, cardiovascular disease, respiratory diseases, mortality, relaxation, happiness, ADHD, depression, anxiety, and well-being (Kuo, 2015; Mygind et al., 2019; Rojas-Rueda et al., 2019; Shiota et al., 2007; Twohig-Bennett & Jones, 2018). The benefits of nature engagement may depend on a variety of biopsychosocial factors (Hartig et al., 2014; Mygind et al., 2019) including socioeconomic status, residential location, preferences, culture, and gender (Astell-Burt et al., 2013). Nature engagement has also been linked to other health related behaviors including physical activity, social interaction, and sleep (Authors, 2020; Hartig et al., 2014; Twohig-Bennett & Jones, 2018).

In light of well documented health disparities, nature engagement and its attending benefits may be especially important in areas like the southern United States because of the high rates of morbidity, mortality, disease, and lack of access to health care (Miller & Vasan, 2021). Reducing the disparities in southern United States may, in part, depend on increasing engagement in healthy nature-based activities. As such, more insight into what factors impact nature engagement across the lifespan, particularly among those who live in the South are needed.

### **Development and Nature Engagement**

Children are spending less time in nature than ever before (Soga et al., 2018), and a lack of positive experiences in nature may be detrimental to positive views of the environment (Gill, 2014) and nature engagement throughout the lifespan (White & Stoecklin, 2008). Regular experiences in nature during childhood are important for a myriad of reasons including overall well-being, the development of pro-environmental attitudes, and feeling comfortable in nature throughout the lifespan (Adams & Savahl, 2017; White & Stoecklin, 2008). There are many factors that may contribute to children's lack of experience in nature including a lack of opportunity due to access or time (Soga et al., 2018). Children's interest in nature may also be influenced by influential others (Cheng & Monroe, 2012; Hand et al., 2018). However, it's not clear how or why these childhood experience impact later nature engagement. In line with these possibilities, there have been recent calls for studies that explore peoples subjective understanding, perceptions, and meanings related to time spent in nature from a developmental perspective (Adams & Savahl, 2017). Qualitative approaches can be particularly helpful for this research as it provides potential for exploration of rich subjective perceptions, attitudes and experiences.

### **Frameworks for Understanding Nature and the Fulfillment of Basic Needs**

With reductions in contact with the natural environment, humans may not be having the necessary experiences that promote their health and well-being. Self Determination Theory argues that the psychological needs that are necessary for human flourishing are competence, autonomy, and relatedness (Ryan et al., 2019). One question of interest is the degree to which nature engagement supports the satisfaction of those fundamental psychological needs across the lifespan and whether the ways in which it fulfills those needs varies as people age.

The need for competence, which can be understood as experiencing one's behaviors as successful and effective (White, 1959), often involves "the exercise, expansion, and expression of one's capacities and talents." Not having these opportunities means that an individual's need for competence is not being met. Nature engagement may be able to support this need via educational experiences which improves understanding about the natural environment and the development of relevant practical skills (Roczen et al., 2014). Engaging with nature may promote the development of skills and abilities that lead to increased capacities at exerting an effect on one's environment (Legault, 2020).

Relatedness refers to feeling a sense of belonging and connection, which are important for human flourishing (Leary & Baumeister, 1995). SDT argues that due to the need to experience relatedness, people are likely to internalize and integrate social values and practices to ensure acceptance, thus satisfying the need for relatedness (Ryan, 2017). Based on previous research, there is some reason to expect nature engagement fosters social interaction and social connection (Hartig et al., 2014; University of Minnesota, 2016), potentially satisfying the need for relatedness.

Autonomy can be satisfied when people behave in ways that are fully self-endorsed and in alignment with their values (Legate & Ryan, 2014). Autonomy is not synonymous with

complete independence, as SDT argues that one can be compelled by external forces, yet still perceive that action as autonomous if it aligns with their goals and desires. Nature engagement might support autonomy by acting as an activity that supports personal expression, goal attainment, and self-endorsed, value-based activities (Ridder, 2005).

The meeting of these fundamental needs takes place within the context of individuals' proclivity towards internalizing cultural values, whereby leading people to act in culturally appropriate ways, thus enhancing their capacity for having their needs met. As such, the cultural values experienced in childhood and adolescence related to nature engagement may be particularly relevant to the degree to which individuals did, and continue to, engage with nature. While there is some evidence that that connection to nature is a basic psychological need and that nature engagement may support the satisfaction of the core needs of relatedness, autonomy and competence, no previous study has attempted to examine how these processes might play out in the lives of individual people from a developmental perspective.

### **Current Study**

The present qualitative study examined individuals' conceptualization of the developmental course of their nature engagement and connection with nature in a sample of adults in Mississippi. A qualitative approach best served the desire to understand participants rich and subjective perspectives and experiences (Braun & Clarke, 2021; Crowe et al., 2015; Sofaer, 1999). The hope was that the experiences and perspectives of these community members could help inform the development and provision of nature-focused interventions, thus simultaneously improving mental and physical health via connection to nature.

### **Methods**

#### **Sample**

Twenty adult participants were recruited from South-Central Mississippi using door to door recruitment, taking place over a seven-month period. The participants in this study all lived within .1 miles of the Long Leaf Trace, a 44-mile rail-to-trail multipurpose trail. This recruitment strategy was based on a desire to understand participants’ usage patterns of the nearby trail, but those results are reported elsewhere (Authors, n.d.). However, along with questions about participants’ use of the Trace, a large portion of the interview was spent exploring participants history of engaging with nature across the lifespan. Participants were eligible to participate in the study if they had lived in the area for at least a year and spoke English. The study was approved by the Institutional Review Board at [redacted]. Basic participant characteristics are reported in Table 1.

**Table 1.**  
*Participant Characteristics*

Pseudonym	Age Range	Gender	Race	Nature Connection
Dawn	18-24	F	White	E
Dylan	18-24	M	Black	G
Mia	18-24	F	Black and White	E
Ashley	25-34	F	Black	E
Christina	25-34	F	White	D
Nicholas	25-34	M	White	E
Wyatt	25-34	M	White	G
Adam	35-44	M	White	G
Caleb	35-44	M	Asian, Black and White	G
Derek	35-44	M	White	E
Deanna	35-44	F	Black	D
Heidi	35-44	F	Black	B
Tammy	45-54	F	Black	NA
Edward	55-69	M	Black	D
Lisa	55-69	F	White	E
Yolanda	55-69	F	Black	D
Billy	70+	M	Black	F
Harold	70+	M	White	NA
Stanley	70+	M	White	C
Sarah	70+	F	White	C

Note. The Nature Connection variable ranges from an A to a G, with G representing perfect overlap in the person and nature, while an A represents no overlap in the person and nature.

## **Measures**

Inclusion of Nature in Self was measured using the Illustrated Inclusion of Nature in Self Scale, comprised of one graphical question designed to measure beliefs and perceptions of being connected to nature (Kleespies et al., 2021). Participants were asked to choose the pair of circles that best describes their relationship to nature. The responses range from separate from nature (two separate circles, A), to one with nature (two overlapping circles, G), with image A being the least inclusive and image G being the most inclusive. The Illustrated Inclusion of Nature provides a brief, simple instrument appropriate for measuring connection to nature (Kleespies et al., 2021).

## **Procedures**

As part of the informed consent process, individuals were given the option to participate after being provided with detailed information about the study. Those who agreed to participate, engaged in semi-structured interviews, typically lasting thirty to forty-five minutes, with questions developed by the authors. The interviews were audio recorded; some took place in person, while others were conducted via Zoom video conferencing software ([www.zoom.us](http://www.zoom.us)). Example questions include, “Thinking back to your childhood, can you tell me about your experiences in nature/outdoor settings?” “From your personal experiences, how, if at all, has spending time in nature harmed you? You might consider the areas of physical, mental, emotional, social, or spiritual harm.”, “Thinking back on your life, were there certain people that played an important role in the development of your thoughts, feelings, and habits related to spending time in nature?”

## **Analysis**



The audio files were initially transcribed using Microsoft's Speech-to-Text service (Microsoft, 2022; Shadiev et al., 2014). An audit of the transcriptions occurred, where accuracy of transcriptions was reviewed by at least two undergraduate or graduate student research team members under the supervision of the second author who also reviewed a large majority of transcripts and provided feedback to the team members on the auditing process.

Outlined by Braun & Clark (2006), the thematic analysis for this study was comprised of six phases. Phase one consisted of familiarization of the data, where the data is transcribed, read, and re-read. Phase two consisted of generating initial codes. Braun and Clarke (2021) indicate that the approach to coding can range from being more "top-down" and theoretically driven with pre-determined code labels, to a "bottom-up" data driven approach with new code labels based on the transcript itself. This study implemented a hybrid approach where, eight codes were identified before the coding process, stemming from Self Determination Theory (Ryan & Deci, 2000) and criteria proposed by Baxter and Pelletier (2019). During the coding process, the authors also used other codes to allow for concepts that were relevant to the development of nature-related attitudes and habits, but were not captured in those other conceptualizations. The authors applied codes to the transcripts by using the comment feature in Microsoft Word. An initial subset of transcripts were coded, following which, the authors met to determine that the coding process was being approached in a relatively consistent way. The codes and relevant text selections were then exported to a Microsoft Excel file for organization and analysis. Phase three consisted of constructing relevant themes, or organizing concepts, from the codes. During this phase the authors reviewed the codes and existing theories independently and created initial lists of potential themes. The authors met to describe their initial findings and worked towards a consensus over a series of meetings, with additional reviews of the codes occurring between

those meetings. The fourth phase consisted of re-checking the quality of themes by referencing the transcripts. The fifth phase consisted of the authors meeting to refine specifics of each theme and to determine names for each theme that accurately and effectively captured the content within the theme. The final phase consisted of selecting transcript extracts, and writing the manuscript.

## **Results**

### **Theme 1: Engagement with Nature Enables Connection**

Participants commonly discussed how nature encourages connection and relatedness throughout the lifespan, but not just with other people. Participants reported that in nature they were able to connect to nature itself, to God, and to others.

#### ***Subtheme 1A: One can relate to nature itself.***

Interesting patterns revealed themselves in comparing participant interviews with their responses to the Inclusion of Nature in the Self Scale. Some participants (Dylan, Wyatt, Adam, Caleb) reported perfect overlap with themselves and nature (G) indicating a high level of connection to nature. In relation to their interview responses, all of these participants expressed spending substantial time in nature as a child, teenager, and adult. For example, Dylan described the interdependence with nature, as “Without it I would not be here, so I guess I need it to survive. I would be connected to it you know? And [I] definitely do anything I can to make sure the environment is ok.” Wyatt explains that when he is out in nature he tries “to appreciate what’s there and how it serves us as human beings and allows us to continue living.” Similarly, Caleb expresses that being outside allows him to “experience life.”

Other participants (Billy, Dawn, Mia, Ashely, Nicholas, Derek, Lisa) reported high overlap (E, F) between self and nature and also reported spending time in nature throughout the

lifespan. Dawn who spent time in nature as a child and teenager said that “I have felt connected to nature even when I was little. Like it was just easier for me to be outside – I was more at peace.” Mia also explained that “being in touch with nature helps you appreciate it.” Nicholas’ preparations for the hunting season resulted in seeing on camera “how much [the animals] benefited from the things that we’ve planted or their bed cover that we cleared for ‘em so it was kind of cool seeing that – you know? So, the decisions you made and the things that you grew or the pastures you created – how it kind of just not only affected you, but it affected the rest of nature...” And while Harold didn’t complete the inclusion of nature in the self-item, he did say that “We’re connected to nature cause we depend on the nature for survival – for life, and we’re all connected together.”

Stanley, Sarah, and Christina reported moderate levels of connection with nature (C, D). Sarah reported spending meaningful time in nature as an adult but explained that it became harder to get outside after her husband became terminally ill. Christina, who has fond memories of spending time in nature as a child and teenager, lost some ability to spend time in nature as an adult due to her “inability to justify spending time outside” in light of her other responsibilities. Stanley actually reported an extensive history of nature engagement, including at the time of the interview, other than a period during his young adult years. He said that after a stint in large urban areas during his young adult years, “you kind of come back to your first love of seeing nature.... And that’s only deepened as I’ve gotten older... I probably have taken it beyond the observation, power, and appreciation that I had even as a kid.”

Heidi reported little overlap between self and connection with nature (B) and expressed spending little time in nature as an adult, potentially due to the limited access to outdoor spaces and stated that when she gets home from work “we don’t sit on the porch on the front” because

of the noise in her front yard. Tammy didn't complete the online survey, but based on her interview, she likely had the smallest amount of engagement recently and across the lifespan, reporting "I've never been an outside person, period."

***Subtheme 1B: Nature can support spiritual connection***

Nature was regularly described as a space that enables spiritual connection, and was especially mentioned as an environment that supports connecting and communicating with God. While most did not refer to this aspect of nature engagement in childhood, Nicholas, said that during his youth "my dad used to always tell me that – you know, growing up as a kid it didn't make sense to me, but it does now – that spiritually, your conversations with God don't necessarily have to happen in church." That sentiment was mirrored in Billy's perspective that "it's like going to church when I'm in nature. My soul is being fed..." and in connection with the previous theme, Billy said that "nature is part of God and you know that nature is God. This planet is alive." Others describe being able to openly communicate with God when in nature as "there are no barriers, because you're free outside" (Heidi). Lisa described that "[I can] talk to the good Lord when I'm just moseying around outside, on the walking trail, or if I'm out fishing I'll just walk around and talk to the good Lord and thank him for everything." Furthermore, participants describe their time outside as spiritual in part because nature can provide space to be alone and "the best time to talk to God is when you are alone" (Deanna).

The connection to God is also manifested for those who view nature as a gift given by God. Harold identifies nature with "life", and "of course, nobody can tell you what life is. Of course, I think it's a gift of God. Some called it many things... but I think it's a gift of God as far as I'm concerned." Thus, for these participants, God gave nature as a gift, and Adam likes "to meditate and just look at God's creation, to be honest. To look at the skies, the trees, and just try

to appreciate what's there and how it serves us human beings to continue living." Of note, receiving that gift, can involve responsibility as Stanley explained that part of his religious beliefs are to be "a good steward of things" and stated "it is a spiritual experience" to be in nature because "the creator put all these things together in some form or fashion, and can be a form of worship to really immerse yourself in what God has made."

In relation to connecting to spirituality more generally and not just to Judeo-Christian conceptions of God, participants also expressed spending time in nature inspires positive emotions of gratitude and appreciation and closeness to "whatever higher level that you believe in" (Adam). For Sarah, who used to go to the beach weekly with her husband found that doing this was "sometimes spiritual – it just makes you feel – more alert and just more thankful for how beautiful everything is." Deanna also reported that the spiritual aspects of nature supported her grieving process related to her father who was murdered in the previous year "I kind of – and this you know is kind of off-script, but I do kind of talk to him – my Dad" when at a local lake. Thus, the spiritual connection and relatedness provided by nature engagement was varied, yet very impactful for many of the participants.

***Subtheme 1C: Nature engagement promotes and for some, depends on relatedness with family and friends.***

Along with connection to nature itself and to the spiritual realm, it was clear that spending time in nature was seen as supporting personal relationships as it "creates intimacy by getting you away from other people" and it creates a "peaceful place that makes it easier to talk and bond with the people you are around" (Deanna). Participants reported meaningful memories of spending time in nature with neighborhood friends as a child. For example, Lisa remembers her time in nature involving yard games like kickball and badminton. Heidi reported helping in

her grandmother's garden and that she "had aunts and they would come over and cousins and so we would just all sit out there and gather together and it was just a good experience." Christina, who reported a troubled childhood generally, indicated that during an outdoor summer camp she developed close relationships with counselors and friends which helped meet her needs for connection. And Sarah's nature involvement at the time of the interview was connected to the way her needs were met as a child:

"Just because I was used to being outdoors and it was pleasant, and I think that probably just carried through my life because – you know just experiences being out on the water or being out in the yard playing, it's just it was not negative feelings at all about it was social and it was just fun. So, I guess I still feel like it's fun now."

Wyatt explained that spending time in nature as an adult supports his relationship with his wife by providing them with "the chance to catch up with each other and have conversations about life." Derek sees nature as a "good thing for everybody" because it is "important for all people to take time either by themselves or with friends or family, to get out and be alone and listen to birds and see squirrels and deer every now and then." The reduction in access to technology was reported as one way in which nature engagement enhanced social connection. Adam commented that when "you're in the house, kids have their iPads, TV's, and iPhones and everyone is just doing their thing. But when you're outside and you don't have those..... you communicate with your family."

In a sort of bi-directional effect, others described their engagement and connection to nature as dependent on having close others to go into nature with (Lisa, Sarah). For example, Sarah, who spent three years living in an RV with her husband explained that "not having my husband will make it harder to get outside and the fact he won't be doing these things with me is

probably going to make me do them a little less.” Additionally, Christina expressed that her friends have been really influential in her experiences with nature and stated “I don’t do a lot of things by myself, so it was always nice that it felt like there was always someone within reach that if I wanted to go on a hike, someone was always down.” Lastly, Lisa (P30;4;8) stated “if I had somebody to go with me, I would love to go down some of these nature trails off the highway on 49 down there where you see a lot of cars pulled off with families.”

## **Theme 2 Nature engagement and autonomy are interdependent**

This theme coalesces around the comments made by the participants explaining how nature engagement, autonomy, and independence are interrelated. Interestingly, it appeared that there was a reciprocal relationship among the factors, with autonomy and independence (or a lack thereof) impacting nature engagement (subtheme 2.A), while nature engagement can support autonomy and independence (subtheme 2.B).

### ***Subtheme 2.A: Nature engagement is impacted by responsibilities and circumstances across the lifespan***

Childhood nature engagement was the norm in this sample and interestingly, this engagement was sometimes forced upon them. For Mia, her “mom was the one that told us we couldn’t sit inside all day...that’s how she grew up.” Similarly, for Dawn, “My mom would just leave us outside and be like, have fun. Don’t come in unless you’re gonna stay in.” In other words, “it was like we were forced outside.” In these ways, the participants described limited decision making in terms of whether or not they would engage in natural environments – it was required. However, as SDT indicates, even externally enforced behaviors can be autonomous as long as the person fully endorses that behavior. And the activities outside were seemingly enjoyed and endorsed by the participants.

Other participants reported that due to circumstances or responsibilities, they were not able to engage in nature during their youth. For example, Ashley stated: “Life circumstances dictate[d] my time outside. I was going through stuff when I was a kid, so I never really got a chance to go outside. I was the one that was standing house, and had to watch my brother and sister...” Deanna said that her mom, who “wasn’t a nature person...was really strict on what we did and the things – the activities that we got into. She really didn’t let us do much. We were always in the house.” Her mother’s parenting preferences limited her ability to go outside.

Thus, the limited independence during childhood played itself out in multiple ways – some were required to spend substantial time outside in nature, while others were strictly limited in these activities. Deanna reported an increase in her ability to have her autonomy need fulfilled after she moved out, became a mother, and “started swimming and kind of doing my own thing.” While she didn’t know exactly what improved her attitude toward being in nature, it was “just feeling that freedom, the fresh air” that was associated with making her own decisions in a more autonomous way. Ashley (P11) also similarly engages in nature more autonomously now that she can make those decisions.

Others described the ways in which technology may be a factor that influences engagement in nature, especially for young people who “have all the electronic gadgets” (Lisa). Dawn, who was a young adult at the time of the interview, indicated “...we were in that age where it's not like full technology yet, like iPads and like iPhones, but we did have a taste of it.” Her impression was that having less access to technology enhanced her ability to engage more fully in other activities, especially nature engagement. Yolanda’s interaction with her great niece provides a humorous anecdote where, the niece “was highly upset that I did not have an iPad growing up – like she was just offended. She’s six years old and she said ‘TT (auntie), you didn’t



have an iPad?' And I said 'no.' She said, 'Did you have paper and pencil?' and I said 'yes.' She said, 'well, you could have drawn you one and you would have had [one].'" Yolanda's impression was that technological dependence may be reducing nature engagement for youth today. Nicholas said that by going outside and leaving technology behind, you have "a sense of patience and ability to just be able to think in your own mind when you're not connected to something electronic or have something else grabbing your attention all the time."

While the transition to adulthood meant more autonomy and hence more nature engagement, others reported a pattern of decreasing engagement over time, often in conjunction with added responsibilities. For example, Adam stated "I don't have that much time. I work, which is a big factor, but I wish I could plant more vegetable or fruit trees. But I haven't had time to do so." This struggle for Christina can be seen, where she says "It is hard when you have a lot of work that you need to do on your computer inside... it sucks." And further, for Dawn, her time outside has "changed a lot because I started getting really busy.... I didn't really have as much time to be free and do what I wanted." This is mirrored in the statement by Derek where, "through my middle-aged years I didn't do as much as I did as a young person and as an older person because I got busy with school and getting a good job." You can hear the interrelation between autonomy and nature engagement in Tammy's response about her mentor who is inviting her to do outdoor activities.

"With me being temporarily disabled, it put me in a different mindset and I don't... I don't want to be in that mindset and I'm slowly bringing myself out of it, so [I] want to start back and join with her because she's an older lady and I want to enjoy those things with her, because she love's being out. She will say, 'let's

have lunch in the park. Let's do things like that,' and I always just kindly decline for the moment. Those are some of the things I want to start doing with her.”

It's clear that circumstances, obligations, and a lack of autonomy in making decisions creates difficulties for people in their ability to enjoy the natural environment. The participants' need for autonomy is highlighted here along with their attempts to deal with conflicting values and commitments. Within these circumstances, some participants describe making decisions within their constraints that could still grant them access to nature. Lisa, who had been in the hospital for many months due to COVID indicated that,

“I had sliding glass doors. You weren't supposed to open them, but my family would come – they even had one chair out on the little patio. They would come and sit around and talk to me and try to cheer me up, and I'd go ‘shhh’ ... and just slide it back when I could – just to breathe in fresh air.”

### ***Subtheme 2.B: Engaging with nature enhances autonomy and independence***

Participants commonly discussed how engaging in nature supported a sense of personal independence and the satisfaction of the need for autonomy throughout the lifespan. Dawn explained how spending time in nature as a child encouraged these developments:

“We had to make our own fun, which played a lot into who I am, although sometimes it's difficult because I am a poor college student. But having the experience of not being inside and on technology, and being forced to make your own fun outside with people I love, was a good experience for me.”

Additionally, Sarah explained how nature engagement built independence and decision making as a child because “we just entertained ourselves. We didn't have all the computers and technology, we just went outside and played games.”

The developmental transition in the role that nature played in supporting autonomy was described by Wyatt, where “as a kid you go outside to play and exercise and get away from the house, and now it's more, like we said, an emotional, mental reprieve from everyday life.” Many participants mentioned feeling free in their adult lives when able to get out and enjoy nature on their own volition. Billy made a telling metaphor about nature as an environment which can support autonomy:

“Ok, you never been in jail, I’m quite sure? Ok, if you ever go to jail and spend a little time there, when you get out then you would know what I’m talking about. It’s like being in jail and uh... when you go out, it’s just freedom... I get pleasure, I get enjoyment, and I get relief.”

Heidi also expressed that

“you want to be free, and you just feel like if you're outdoors for some reason to me that's just freeing... I guess just free from maybe people or, just maybe stress... It’s like you can just – you know you’re not bumping up, you’re not in any kind of confined space. You’re just open.”

Nicholas’s engagement with nature appears to support autonomous decision making as it often involves

“disconnect[ing] from your phone” and “anytime stress or anxiety hits, I find myself outside, whether it be financial, or work, or...any other stressful thing that comes with day to day life, I try to find myself answering a lot these questions in my head outside... it’s just a way for me to clear my head.”

While not all automatic behaviors lack autonomy (Ryan, 2017), they do carry the tendency to be less autonomous (Ryan & Deci, 2017). As such, Nicholas' use of nature to clear his mind and deliberate on his challenges likely supports his ability to engage with them more intentionally and autonomously. Dawn actually had a similar experience "right when COVID hit when I was home, that's when I was like forced to slow down, forced to take that time that I needed and make myself or like figure out what made me happier in a sense, like what activities I like to do, like, what made me feel better like being outside so I would do like class outside." Derek used the outdoors similarly where, "I try to make a point every now and then to just go walk on the trail and kind of take time to reflect ... and kind of plan for the future and things like that." From multiple perspectives, nature engagement appears to be an activity that can be an act of autonomy, and can be an activity that, due to its ability to support self-reflection, can enhance autonomous choices in one's life.

The autonomy enhancement of nature is further expressed by the choices that individuals make that allow them to engage in nature. When talking about why she attends school away from home, Mia said, "That's why I kind of chose to come South because I can be outside a lot more..." than her home state in the mid-west. Within the demands of a busy day at work, Heidi indicates that "if I am having maybe a busy day at work – just to walk outside when I go to lunch or something that feels really good. ... Sometimes before I come back to work I may even just sit in my car for a few minutes. Just to, you know, be outside."

On the other hand, deprivation from nature engagement and the impact it has on a sense of autonomy was described by Lisa who had a life-threatening case of COVID and Pneumonia. At the time of the interview, she was recovering, but generally homebound: "I get sad, you know, and I do a lot of looking out these windows all the time. I've always got my...blinds open, my curtains open, so I can see outside, and the light can come in, and you know. I don't like being closed up, but I am, for a while. We'll get back there. I talked about that with my

doctor this morning, so..." Nicholas also languishes when deprived of chances to get outside: "so to me, and I think my wife would vouch for this... if you coop me up inside too long, it drastically affects my attitude. I feel stressed. I feel anxious...sometimes I get a little aggravated." Nature was seen as a facilitator of autonomy, which is required for a flourishing life.

### **Theme 3: Nature engagement can build competence (especially for those with relevant lifestyles)**

Along with the autonomy- and relatedness-promoting capacity of nature engagement, participants, especially for those with relevant lifestyle, indicated that the need for competence was also satisfied in nature engagement. This competence took the form of learning and mastering knowledge, abilities, and skills. For some, this process included experiences in childhood, such as Harold, who grew up during the great depression in rural Mississippi explained:

"We had to rely and depend on nature to survive. We had to depend on so many things – including soil and had to raise everything we ate because there wasn't any money. Nature benefited us and kept me going, but we had to work real hard."

Similarly, Stanley, who also grew up in rural Mississippi, stated that "life to a certain extent revolved around nature, being related to nature and knowing when to plant and when you could rest and socialize. Nature has always been a big player, and I think even as a kid I could pick up on that." For these individuals who grew up in rural environments, the culture and community norms were internalized because nature-related knowledge and skills were necessary to survive physically and to thrive within the social environment.

The skill building aspects of nature engagement was not limited to the individuals who grew up engaging with nature out of such necessity. Billy described that during his youth he

picked and sold Blackberries and did yard work in the neighborhood for pay with his friends.

The competence was seen as a more pressing matter by Dylan who said, exercises outside are “for like survival of the fittest... You know what I mean? If you want to survive, you might want to be fit for your environment you know what I’m saying Dylan found that chores like mowing the lawn can bring about a sense of “accomplishment – completion. The knowing that your work made something happen that you can take pride in... Some people like to do makeup, and hair and stuff like that. I like to see a good cut lawn.”

Some of the skills and knowledge learned in nature were directly related to nature-based leisure activities. For example, Deanna said that “my dad was the first person that ever took me to target practice” and that from those early days she learned enough such that “even though he’s passed away, we have a ritual where we do target practicing a lot.” At a summer camp that Christina attended and eventually became a counselor at, “They had zip lining and canoeing and kayaking and that's where I, you know, learned to do that whenever I was a kid and that's why I like it now.” Christina, who was studying to be an ecologist stated

“My love for nature settled when I was in my undergrad...I've taken a lot of like insect classes. I know it sounds weird, so I know a lot about like insects and like I teach a zoology lab right now. So, I just know a lot about like animals in general and so it's kind of cool having an academic background on stuff and then actually seeing it, you know, live in nature.”

A number of other abilities, skills, and areas of knowledge related to nature-based recreation were described by participants such as swimming (7 participants), running (5), walking (16), cycling (9), fishing (8), firearm shooting (3), camping (5), hiking (6), paintball (1), water rafting (1), hunting (3), gardening (9), and cookouts (4).

The impact of nature engagement on competence was also seen in the way that spending time in nature could enhance performance in other domains. For example, participants expressed a greater ability to take care of themselves, make decisions, and have a clear mind. Adam explained that “when you're planting – you're watering the plants, it gives you kind of some kind of clarity in mind. So, if ... you're studying and you're stressed out, you just go out and water the plants – just it just gives you some kind of clarity and just clears your mind. Then you go back fresh.” The need for competence can be met via learning knowledge and skills that are applied to nature activities themselves, and also by using nature experience as a way to perform better in other areas of life.

#### **Theme 4: Nature Engagement is Internalized**

Participants in this study commonly discussed how the development of their own views, attitudes, and beliefs regarding nature engagement were impacted by important others during childhood, which impacted their nature engagement as an adult. In Billy's words, “[My father and my uncle] nurtured my feelings about the outdoors” and Nicholas has childhood memories of spending “a lot of time outside, hunting or walking around the land, or creek. We would make trails through the woods..... and hunt together, and that is what sticks out to me.” The intergenerational aspect of nature engagement is highlighted by Mia describing that her mother encouraged her to be outside because “that's how she grew up.” Adam, who spends a lot of time outside as an adult, stated that his father was “always teaching, teaching, teaching about different kinds of fruit trees and vegetables and stuff like that. So, I would be able to identify those trees just, you know, when they're sprouting out.” Adam's experience highlights the interrelatedness of needs being met via internalization as the competence he mentioned was also connected to relatedness: “I think it gave me a close relationship with my father, I guess because he was very

interested in agriculture. He loved plants.” Stanley further highlighted this in his reflection of growing up in a rural area and remembering “needing to know [about farming and the natural environment] in order to socialize, you know. If you’re ignorant about all those things, you’re not gonna have buddies...to talk with.” In other words, internalization of norms and values in a supportive environment can help the satisfaction of multiple needs.

Christina also remembers “two or three camp counselors” that were influential during her teenage years in her development of appreciation for nature and some of her decisions about becoming an ecologist. She did her thesis on “septic ditches in Louisiana and mosquitos... and that's very hot... gross nature field work. But it's still interesting and important.” So, for her, even something that may not be intrinsically enjoyable, was still engaged in a fully self-endorsed way because she internalized norms about the importance of the natural environment for its own sake and for the sake of human health. The depth of the internalization was described by various participants, such as Lisa who identified as “a fisher gal, not a fisherman” and sees nature “in my DNA or my bloodstream” because of way she was brought up. For others who were also raised in particularly rural areas, “it's just part of who we are,” (Stanley), “that was just our way of life,” (Sarah), “it’s very difficult to get away from that kind of life,” (Harold), and “I think I’ve just always been a little connected and I think a lot of people in my life are too” (Dawn).

Interestingly, the opposite was true in that restrictive, negative, or even neutral attitudes toward nature from important others also had an impact on nature engagement. Tammy expressed,

“As a kid my mom was very strict and she wouldn’t let me or my brother go outside to play, she kept us inside... I don't know if that played a part in the way I



am today because I just don't. I don't go out much and when I go out it's quick trips and then I'm ready to come back home...”

The impact of others' views of nature were not immutable, however. Deanna indicated that while she grew up in a home that was restrictive of her time and activities, she later realized her enjoyment of outdoor activities: “I went to a backyard barbecue, and I was like okay..... I gotta start doing this more often. This is cool.”

Various participants described the internalization process from the perspective of the one encouraging the internalization, manifested as attempting to pass on nature-related values and habits to close others, especially their children. Derek indicated “I try to stress to my kids ... about how important is spend time in nature” and as he considered his experiences in nature he said “you know it's something I definitely want to pass along to them. And you know, take them to places that I got to see and in the meantime get to see them again myself.” Lisa reminisced about her encouragement of outdoor time with her children

“But when they were little, and I would take them even out in the backyard – [we] had an acre. And the little yellow flowers that pop up – watching them pick them and be excited and bring them to me. You know, [I] miss all of that. Everything we did outside.... I have a lot of memories of my childhood outside and with my children as they grew up outside.”

Moving beyond one's own children, part of what Christina most enjoyed about being a camp counselor was “being able to exist in the nature and then also ... showing kids that kind of stuff too.”

## **Discussion**

This qualitative study examined participants' perceptions of the course of their engagement with nature across their lives. It brought to light personal perspectives about how aspects of internalization, relatedness, autonomy, and competence were related to nature engagement. The satisfaction of the need for relatedness was enhanced by nature in multiple ways – nature was a physical environment that encouraged deeper connection, particularly via reduction of media use; shared interests in nature-related activities promoted collaborative action; and people perceived nature engagement as a means of encouraging increased responsiveness to the needs of others. The results linking time spent in nature with the satisfaction of relatedness as a basic psychological need are consistent with research findings connecting time spent in nature and increased social interaction (Authors, 2020; Hartig et al., 2014). Time spent in nature not only increases social interaction but increases prosocial behavior – intent to benefit others, and awareness of the needs of others (Goldy & Piff, 2020).

Interestingly, following a bidirectional relationship, the ability to spend time in nature was, for some, dependent on their level of relatedness, or at least their ability to have someone to spend time in nature with. Lacking relationships with other available or interested individuals deterred some participants from spending much time in nature, thus depriving them of an environment that could act as a resource for satisfying basic psychological needs. Part of what is troubling with these findings, is that if natural environments can help facilitate social interaction and meeting the relatedness need, then those that are isolated to begin with are unable to access the relationship-building or enhancing features of nature. In some ways this may act to create an ever-widening disparity in relatedness satisfaction, as older adults (Bøen et al., 2012), the disabled (Tough et al., 2017), or other marginalized groups (Hassan et al., 2020; Pedersen et al., 2012) may not as able to fulfill that need because they lack the baseline connections to make use

of the environment. Nonetheless, a few studies have shown that even passive involvement in nature, such as simply observing it can bring increasing well-being for those with mobility impairments and who are disabled (Zhang et al., 2017). Structured group-based interventions may help alleviate these concerns – for example, indoor gardening and horticulture programs increased psychological well-being, and social interaction in older adults, in part because these interventions were expected to promote autonomy and skill development (Yeo et al., 2020).

Participants reported that it may be vital to put ourselves in spaces removed from technology, to increase connection with others (c.f. Ryan et al., 2019). It was common for participants to express increased connection with their family, friends, and God, partly due to the temporary separation from technology. From a child development perspective, it may be important for parents and educational systems to consider the impact of the increases in screen time and the potential benefits of promoting time spent in nature (WHO, 2023).

The study findings demonstrate a relationship between nature engagement and personal autonomy across the lifespan. Nature engagement can enhance people's ability to engage in self-endorsed behaviors. These findings are consistent with quantitative findings showing that willfully engaging with nature can help satisfy the need for autonomy (Lee et al., 2022). One potential mechanism at play may be that spending time in nature seemed to enhance the participants focus on the present – the birds, trees, breeze and other natural features. This attention to the present moment can be conceptualized as mindfulness, which previous empirical research has indicated as being associated with nature engagement (Schutte & Malouff, 2018), and according to (Ryan & Deci, 2011), is a foundational component to enhancing self-regulation and autonomy. Participants discussed the rejuvenation they received by engaging in nature,

which aligns with Attention Restoration Theory (Ohly et al., 2016), and with renewed attentional reserves, the participants may be able to act more intentionally in their daily lives.

While not precisely addressing autonomy from the SDT framework (i.e. self-endorsed behavior), the degree of independence from external constraints seemed to impact people's ability to engage with nature. Nature engagement was impacted by responsibilities and circumstance across the lifespan and it often decreased with age. People spoke of commitments to work and education most commonly as the reasons why they reduced their engagement in nature, although others were mentioned as well. From the SDT perspective, some of these reductions in nature engagement may have been fully endorsed decisions, with the participant recognizing the need to sacrifice one value (nature engagement) for others (family responsibilities, work and school responsibilities). However, even if the decision to reduce nature engagement for some or all of these participants was carried out autonomously, it does raise questions about the kind of social and cultural environment that requires the sacrifice of such a meaningful, helpful and need-fulfilling activity as a developmental norm. Efforts to integrate nature into the built environment of neighborhoods, schools, and places of work may be one way to combat this unfortunate consequence (Richardson et al., 2020).

Nature seemed to promote competence for the participants, particularly in healthy leisure or exercise-based activities. Leisure is an essential part of a good life (Adesoys & Ajibua, 2015), and leisure that can promote the development of new skills or knowledge may help satisfy the need for competence. Further, nature activities, which often involve or are focused on physical activity, may improve self-esteem and self-efficacy that stem from higher levels of fitness (King et al., 2020; Netz et al., 2005). As urbanization increases and fewer people live in rural areas, competence in certain nature activities (i.e. hunting, fishing, farming) may decrease because the

communities that emphasize those skills will shrink. Nonetheless, even those in urban areas discuss enjoying various nature activities (Duvernoy & Gambino, 2022), so while if some specific skills and knowledge related to nature engagement may be deemphasized, the natural environment can nonetheless provide a broad array of activities that will remain viable as means of enhancing competence.

Providers and educators may be able to enhance intrinsic motivation to spend time in nature by providing education, interventions, and positive activities in nature. Environmental knowledge has shown to be effective in promoting a person's overall ecological behavior (Roczen et al., 2014) and desire to feel connected to nature (DeVillie et al., 2021), so the fostering of environmental knowledge, especially at a young age, may encourage healthy nature engagement throughout the lifespan. However, people of color, women, and individuals with physical impairments, may have reduced levels of personal autonomy in natural environments due to prejudice, discrimination, and a perceived lack of safety (Côté-Lussier et al., 2015; Lee et al., 2022) and thus may be less likely to benefit from nature focused education and interventions. As such, it may be important for providers to consider the barriers for underserved individuals when promoting healthy nature engagement.

As outlined by SDT, internalization and adoption of cultural values often leads to satisfaction of one's basic needs including relatedness, autonomy, and competence which can explain how various values and cultural components become infused in an individual's identity (Ryan, 2017). Interestingly, while many participants expressed adopting and internalizing the values of the culture around them, others eventually had to resist and overcome certain beliefs of their close relations when those close others perceived nature engagement as dangerous, unimportant, or otherwise undesirable. For these participants, the lack of nature engagement in

their youth, despite being a value of their family, was a value that inhibited their ability to have their needs of autonomy, competence, and relatedness satisfied. When finally given the opportunity to spend time in nature, some of these participants reported great benefits and changes in their attitudes and habits related to nature engagement. Public schools or other community organizations may have a clear impact by providing healthy and enjoyable nature experiences to those who might not otherwise have them (Kuo et al., 2019). Nature engagement at a young age provides a potential pathway for higher rates of nature engagement and environmental stewardship as an adult (Hahn, 2021).

There are some potential limitations in this study, one of which is the recruitment process by which the sample was attained. This group of individuals all lived within 1/10<sup>th</sup> of a mile of a walking and biking trail, which may have left us with a sample that had more positive attitudes toward nature. As with most qualitative research, which emphasizes rich perspectives over quantitative comparisons or relationships, this study's findings are not necessarily generalizable to other populations. This research team focuses on the potential beneficial impacts of nature engagement on mental health, so, despite efforts to be unbiased and informed on some of the equivocal findings in this research, there is the potential that the research team was biased in interpreting participant responses. Further, while the researchers attempted to dissuade the participants from engaging in desirability bias through the wording of the research questions (asking about both harms and benefits of nature engagement; indicating that people vary widely in their attitudes about the natural environment), the participants may have been reporting things out of a desire to please the researchers.

It may be helpful for future research to implement a more thorough mixed methods approach to extend the present research and broaden the range of recruitment methods used to

help prevent some of the potential limitations related to recruitment. Future research may also benefit from further exploration of whether differences in socioeconomic and other demographic characteristics shape nature engagement in specific ways and how time in nature may impact environmental attitudes and behaviors. Lastly, future research might consider whether the findings from the present study and the SDT framework could be used to develop or enhance interventions that can be delivered with the aim of satisfying autonomy, relatedness, and competence via nature engagement.

### **Conclusion**

Individuals' perceptions about the developmental course of their attitudes and habits related to nature engagement throughout the lifespan may be an important factor to consider when attempting to encourage nature engagement. This study identified how nature engagement and the satisfaction of fundamental psychological needs (relatedness, autonomy, and competence) are related across the lifespan. Further, it appears that those who lack fulfillment in these needs, particularly relatedness and autonomy, may be less able to regularly engage with nature and benefit from those healthy activities. From a Self Determination Theory perspective, the internalization of norms and values about nature engagement was widely present in this Southern U.S. sample, and may be a key factor in encouraging healthy nature engagement for future generations. These findings may inform efforts to encourage healthy nature engagement via nature-focused education and intervention practices, which can result in improved health and well-being via the satisfaction of basic psychological needs.

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**Table 1**  
Participant Characteristics

Pseudonym (ID)	Age Range	Gender	Race
Dawn (18)	18-24	F	White
Dylan (20)	18-24	M	Black
Mia (39)	18-24	F	Black and White
Ashley (11)	25-34	F	Black
Christina (05)	25-34	F	White
Nicholas (32)	25-34	M	White
Wyatt (10)	25-34	M	White
Adam (38)	35-44	M	White
Caleb (23)	35-44	M	Asian, Black and White
Derek (25)	35-44	M	White
Deanna (02)	35-44	F	Black
Heidi (04)	35-44	F	Black
Tammy (07)	45-54	F	Black
Edward (28)	55-69	M	Black
Lisa (30)	55-69	F	White
Yolanda (16)	55-69	F	Black
Billy (03)	70+	M	Black
Harold (34)	70+	M	White
Stanley (35)	70+	M	White
Sarah (24)	70+	F	White

**Table 2.**

*Participant Quotes*

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**Theme 1: Engagement with Nature Enables Connection**

	Quote	Pseudonym
<b>Subtheme 1A:</b> <b>One can relate to nature itself.</b>	Without it I would not be here, so I guess I need it to survive. I would be connected to it you know? And [I] definitely do anything I can to make sure the environment is ok.	Dylan
	Wyatt explains that when he is out in nature he tries “to appreciate what’s there and how it serves us as human beings and allows us to continue living.”	Wyatt
	I have felt connected to nature even when I was little. Like it was just easier for me to be outside – I was more at peace.	Dawn
	Nicholas’ preparations for the hunting season resulted in seeing on camera “how much [the animals] benefited from the things that we’ve planted or their bed cover that we cleared for ‘em so it was kind of cool seeing that – you know? So, the decisions you made and the things that you grew or the pastures you created – how it kind of just not only affected you, but it affected the rest of nature...”	Nicholas
	We’re connected to nature cause we depend on the nature for survival – for life, and we’re all connected together.”	Harold
	You kind of come back to your first love of seeing nature.... And that’s only deepened as I’ve gotten older... I probably have taken it beyond the observation, power, and appreciation that I had even as a kid.	Stanley
	Quote	Pseudonym
<b>Subtheme 1B:</b> <b>Nature can support spiritual connection</b>	My dad used to always tell me that – you know, growing up as a kid it didn’t make sense to me, but it does now – that spiritually, your conversations with God don’t necessarily have to happen in church.	Nicholas
	It’s like going to church when I’m in nature. My soul is being fed...	Billy
	Nature is part of God and you know that nature is God. This planet is alive.	Billy

There are no barriers, because you're free outside. Heidi

[I can] talk to the good Lord when I'm just moseying around outside, on the walking trail, or if I'm out fishing I'll just walk around and talk to the good Lord and thank him for everything. Lisa

Harold identifies nature with "life", and "of course, nobody can tell you what life is. Of course, I think it's a gift of God. Some called it many things... but I think it's a gift of God as far as I'm concerned." Harold

Adam likes "to meditate and just look at God's creation, to be honest. To look at the skies, the trees, and just try to appreciate what's there and how it serves us human beings to continue living. Adam

The creator put all these things together in some form or fashion, and can be a form of worship to really immerse yourself in what God has made. Stanley

For Sarah, who used to go to the beach weekly with her husband found that doing this was "sometimes spiritual – it just makes you feel – more alert and just more thankful for how beautiful everything is." Sarah

I kind of – and this you know is kind of off-script, but I do kind of talk to him – my Dad. Deanna

Quote Pseudonym

***Subtheme 1C:  
Nature  
engagement  
promotes and for  
some, depends on  
relatedness with  
family and  
friends.***

Spending time in nature "creates intimacy by getting you away from other people" and it creates a "peaceful place that makes it easier to talk and bond with the people you are around." Deanna

Heidi reported helping in her grandmother's garden and that she "had aunts and they would come over and cousins and so we would just all sit out there and gather together, and it was just a good experience." Heidi

Just because I was used to being outdoors and it was pleasant, and I think that probably just carried through my life because – you know just experiences being out on the water or being out in the yard playing, it's just it was not negative feelings at all about it was social and it was just fun. So, I guess I still feel like it's fun now. Sarah

Derek sees nature as a “good thing for everybody” because it is “important for all people to take time either by themselves or with friends or family, to get out and be alone and listen to birds and see squirrels and deer every now and then.”

Derek

Adam commented that when “you’re in the house, kids have their iPads, TV’s, and iPhones and everyone is just doing their thing. But when you’re outside and you don’t have those…… you communicate with your family.”

Adam

Not having my husband will make it harder to get outside and the fact he won’t be doing these things with me is probably going to make me do them a little less.

Sarah

I don’t do a lot of things by myself, so it was always nice that it felt like there was always someone within reach that if I wanted to go on a hike, someone was always down.

Christina

If I had somebody to go with me, I would love to go down some of these nature trails off the highway on 49 down there where you see a lot of cars pulled off with families.

Lisa

## Theme 2 Nature engagement and autonomy are interdependent

	Quote	Pseudonym
<b>Subtheme 2.A:</b> <i>Nature engagement is impacted by responsibilities and circumstances across the lifespan</i>	For Mia, her “mom was the one that told us we couldn’t sit inside all day…that’s how she grew up.”	Mia
	My mom would just leave us outside and be like, have fun. Don’t come in unless you’re gonna stay in.	Dawn
	Life circumstances dictate[d] my time outside. I was going through stuff when I was a kid, so I never really got a chance to go outside. I was the one that was standing house, and had to watch my brother and sister…	Ashley
	Deanna said that her mom, who “wasn’t a nature person…was really strict on what we did and the things – the activities that we got into. She really didn’t let us do much. We were always in the house.”	Deanna
	I started swimming and kind of doing my own thing……. Just feeling that freedom, the fresh air	Deanna
	“…we were in that age where it’s not like full technology yet, like iPads and like iPhones, but we did have a taste of it.	Dawn

Yolanda’s interaction with her great niece provides a humorous anecdote where, the niece “was highly upset that I did not have an iPad growing up – like she was just offended. She’s six years old and she said ‘TT (auntie), you didn’t have an iPad?’ And I said ‘no.’ She said, ‘Did you have paper and pencil?’ and I said ‘yes.’ She said, ‘well, you could have drawn you one and you would have had [one].’”

Yolanda

Quote

Pseudonym

Nicholas said that by going outside and leaving technology behind, you have “a sense of patience and ability to just be able to think in your own mind when you're not connected to something electronic or have something else grabbing your attention all the time.”

Nicholas

I don’t have that much time. I work, which is a big factor, but I wish I could plant more vegetable or fruit trees. But I haven’t had time to do so.

Adam

It is hard when you have a lot of work that you need to do on your computer inside... it sucks.

Christina

For Dawn, her time outside has “changed a lot because I started getting really busy.... I didn’t really have as much time to be free and do what I wanted.”

Dawn

Through my middle-aged years I didn’t do as much as I did as a young person and as an older person because I got busy with school and getting a good job.

Derek

With me being temporarily disabled, it put me in a different mindset and I don’t... I don’t want to be in that mindset and I’m slowly bringing myself out of it, so [I] want to start back and join with her because she’s an older lady and I want to enjoy those things with her, because she love’s being out. She will say, ‘let’s have lunch in the park. Let’s do things like that,’ and I always just kindly decline for the moment. Those are some of the things I want to start doing with her.

Tammy

I had sliding glass doors. You weren’t supposed to open them, but my family would come – they even had one chair out on the little patio. They would come and sit around and talk to me and try to cheer me up, and I’d go ‘shhh’ ... and just slide it back when I could – just to breathe in fresh air.

Lisa

Quote

Pseudonym

***Subtheme 2.B:  
Engaging with  
nature enhances  
autonomy and  
independence***

We had to make our own fun, which played a lot into who I am, although sometimes it's difficult because I am a poor college student. But having the experience of not being inside and on technology, and being forced to make your own fun outside with people I love, was a good experience for me. Dawn

We just entertained ourselves. We didn't have all the computers and technology, we just went outside and played games. Sarah

As a kid you go outside to play and exercise and get away from the house, and now it's more, like we said, an emotional, mental reprieve from everyday life Wyatt

Ok, you never been in jail, I'm quite sure? Ok, if you ever go to jail and spend a little time there, when you get out then you would know what I'm talking about. It's like being in jail and uh... when you go out, it's just freedom... I get pleasure, I get enjoyment, and I get relief. Billy

You want to be free, and you just feel like if you're outdoors for some reason to me that's just freeing... I guess just free from maybe people or, just maybe stress... It's like you can just – you know you're not bumping up, you're not in any kind of confined space. You're just open. Heidi

Disconnect[ing] from your phone” and “anytime stress or anxiety hits, I find myself outside, whether it be financial, or work, or...any other stressful thing that comes with day to day life, I try to find myself answering a lot these questions in my head outside... it's just a way for me to clear my head.” Nicholas

Right when COVID hit when I was home, that's when I was like forced to slow down, forced to take that time that I needed and make myself or like figure out what made me happier in a sense, like what activities I like to do, like, what made me feel better like being outside so I would do like class outside.” Dawn

I try to make a point every now and then to just go walk on the trail and kind of take time to reflect ... and kind of plan for the future and things like that. Derek

That's why I kind of chose to come South because I can be outside a lot more... Mia

Heidi indicates that “if I am having maybe a busy day at work – just to walk outside when I go to lunch or something that feels really Heidi

good. ... Sometimes before I come back to work I may even just sit in my car for a few minutes. Just to, you know, be outside.”

I get sad, you know, and I do a lot of looking out these windows all the time. I've always got my...blinds open, my curtains open, so I can see outside, and the light can come in, and you know. I don't like being closed up, but I am, for a while. We'll get back there. I talked about that with my doctor this morning, so...

Lisa

So to me, and I think my wife would vouch for this... if you coop me up inside too long, it drastically affects my attitude. I feel stressed. I feel anxious...sometimes I get a little aggravated.

Nicholas

Quote

Pseudonym

**Theme 3:  
Nature  
engagement can  
build  
competence  
(especially for  
those with  
relevant  
lifestyles)**

We had to rely and depend on nature to survive. We had to depend on so many things – including soil and had to raise everything we ate because there wasn't any money. Nature benefited us and kept me going, but we had to work real hard.

Harold

Life to a certain extent revolved around nature, being related to nature and knowing when to plant and when you could rest and socialize. Nature has always been a big player, and I think even as a kid I could pick up on that.

Stanley

Exercises outside are for like survival of the fittest... You know what I mean? If you want to survive, you might want to be fit for your environment you know what I'm saying?

Dylan

Dylan found that chores like mowing the lawn can bring about a sense of “accomplishment – completion. The knowing that your work made something happen that you can take pride in... Some people like to do makeup, and hair and stuff like that. I like to see a good cut lawn.”

Dylan

My dad was the first person that ever took me to target practice.....even though he's passed away, we have a ritual where we do target practicing a lot.

Deanna

They had zip lining and canoeing and kayaking and that's where I, you know, learned to do that whenever I was a kid and that's why I like it now.

Christina

My love for nature settled when I was in my undergrad...I've taken a lot of like insect classes. I know it sounds weird, so I know a lot about like insects and like I teach a zoology lab right now. So, I just

Christina,

know a lot about like animals in general and so it's kind of cool having an academic background on stuff and then actually seeing it, you know, live in nature.

When you're planting – you're watering the plants, it gives you kind of some kind of clarity in mind. So, if ... you're studying and you're stressed out, you just go out and water the plants – just it just gives you some kind of clarity and just clears your mind. Then you go back fresh.

Adam

#### Theme 4: Nature Engagement is Internalized

Quote

Pseudonym

[My father and my uncle] nurtured my feelings about the outdoors. Nicholas has childhood memories of spending “a lot of time outside, hunting or walking around the land, or creek. We would make trails through the woods..... and hunt together, and that is what sticks out to me.”

Billy  
Nicholas

Always teaching, teaching, teaching about different kinds of fruit trees and vegetables and stuff like that. So, I would be able to identify those trees just, you know, when they're sprouting out.

Adam

I think it gave me a close relationship with my father, I guess because he was very interested in agriculture. He loved plants.

Adam

Needing to know [about farming and the natural environment] in order to socialize, you know. If you're ignorant about all those things, you're not gonna have buddies...to talk with.

Stanley

Septic ditches in Louisiana and mosquitos... and that's very hot... gross nature field work. But it's still interesting and important.

Christina

Lisa who identified as “a fisher gal, not a fisherman” and sees nature “in my DNA or my bloodstream.”

Lisa

As a kid my mom was very strict and she wouldn't let me or my brother go outside to play, she kept us inside... I don't know if that played a part in the way I am today because I just don't. I don't go out much and when I go out it's quick trips and then I'm ready to come back home...”

Tammy

I went to a backyard barbecue, and I was like okay..... I gotta start doing this more often. This is cool.

Deanna



I try to stress to my kids ... about how important is spend time in nature..... You know it's something I definitely want to pass along to them. And you know, take them to places that I got to see and in the meantime get to see them again myself.

Derek

But when they were little, and I would take them even out in the backyard – [we] had an acre. And the little yellow flowers that pop up – watching them pick them and be excited and bring them to me. You know, [I] miss all of that. Everything we did outside.... I have a lot of memories of my childhood outside and with my children as they grew up outside.

Lisa

Being able to exist in the nature and then also ...showing kids that kind of stuff too.

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Christina