The Hidden Impact of Sociocultural Determinants in Adolescence

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The Hidden Impact of Sociocultural Determinants in Adolescence
Lauren B. Robins (*Old Dominion University*), Nicholas Schmoyer (*Philadelphia College of Osteopathic Medicine*), Atiya Smith (*Hood College*), Krystal L. Clemons (*Denver Seminary*), Jill Kivikoski (*Old Dominion University*)

Abstract
This study, guided by the Social Determinants of Health framework and Social Ecological Model, examined how SDOH impact the presence of anxiety during adolescence. This study set out to understand what sociocultural determinants predict anxiety, using the 2018 National Survey of Children’s Health dataset. The analysis included a logistic regression to determine the predictability of SDOH on anxiety in adolescence. The results indicated that various SDOH are significant predictors of anxiety, while also indicating that the absence of adverse SDOH predicts the lack of anxiety. Further, unique findings related to race/ethnicity, age, and gender set the stage for additional research on DEI, as it relates to anxiety in adolescence. Conclusively, the results exemplify the need for interprofessional collaboration and integrated behavioral healthcare amongst helping professionals to diminish the impact of adverse determinants on adolescents’ mental health.

*Keywords*: Social determinants of health, interprofessional collaboration, adolescence, anxiety, counseling
Introduction

The collaboration between health professionals across disciplines (e.g., medicine, nursing, behavioral health) and settings (e.g., primary care, specialty behavioral health) is important for comprehensive treatment and outcomes (Johnson & Mahan, 2020; Ohrt et al., 2019; Schlesinger et al., 2023; Schmoyer et al., 2024). This practice is growing among medical and behavioral health professionals, with behavioral health clinician colocation in traditional medical settings rising. Interprofessional collaboration (IPC) is an inherently interpersonal process in which individuals across different professions work towards shared goals that may be unobtainable when working as independent, siloed professionals (Callahan & Higgins, 2023).

Integrated behavioral health (IBH) is a model of care in which IPC is paramount, as behavioral health clinicians work in tandem with medical and other healthcare professionals in shared medical settings towards the goal of comprehensive care addressing patients’ biopsychosocial needs (Academy for Health Research and Quality, n.d.).

While IPC through an IBH model may be the best practice for addressing biopsychosocial health concerns, the intersection of this approach with sociocultural determinants that affect the dimensions of adolescent health is needed. Prior researchers have indicated that a lack of collaboration may be a contributing factor to the dearth of investigations on the intersectional impact of various sociocultural determinants on adolescent development and health (Artiga & Hinton, 2019; Robins, 2021). Runyan (2018) highlights real-world clinical challenges of screening and intervention oriented towards social determinants of health (SDOH) in integrated primary care settings, while simultaneously acknowledging the importance of these factors towards biopsychosocial health. Therefore, it is vital to explore these sociocultural determinants in depth to better conceptualize how IPC, in IBH and siloed settings, can be helpful when dealing with behavioral health concerns related to SDOH in adolescence.

Though research has generally acknowledged the importance of determining the various sociocultural determinants that work together to yield undeniable health disparities, most studies have only addressed single aspects of sociocultural factors related to mental health in a broad manner, leaving a gap of research for how multiple determinants and intersectionality influence mental health and overall well-being during adolescence (Artiga & Hinton, 2019). Thus, it is imperative to conceptualize these components and their interrelationships through SDOH. SDOH are the environmental, biopsychosocial, and cultural conditions that people experience, as well as a broader set of structural and social systems that shape their daily lives and needs (World Health Organization [WHO], 2014).

Conceptualizing adolescent mental health, specifically anxiety, within the SDOH context is important, as adolescence has been deemed a crucial period of development for laying the foundation for optimal mental health (WHO, 2020). Optimal mental health is a consistent state of well-being when individuals can recognize their abilities, properly cope, work productively, and adequately contribute (WHO, 2014). Tending to mental health during adolescence is necessary for early detection and prevention of poor mental health, to avoid future mental health conditions that often arise around age fourteen (Kessler et al., 2001). Anxiety (i.e., feelings of tension and worried thoughts), in particular, is prevalent among adolescents and is one of the leading causes of illnesses (WHO, 2020). Anxiety is the sixth leading cause of disability and illness among adolescents who are 10 to 14 years old and ninth for those who are 15 to 19 years old (WHO, 2020). Additionally, the National Alliance on Mental Illness (NAMI; 2021) found the following anxiety prevalence rates: 31.4% for ages 13 to 14, 32.1% for ages 15 to 16, and 32.3% for ages
17 to 18. These statistics and prevalence rates necessitate the awareness of anxiety during adolescence to work towards optimal mental health.

To aid in achieving optimal mental health and well-being by addressing SDOH, the federal government launched a prevention agenda, *Healthy People 2020*, that suggested five main domains of SDOH: 1) economic stability (e.g., employment, housing instability, and food insecurity); 2) health and healthcare (e.g., access to healthcare, health insurance, and health literacy); 3) social and community context (e.g., social support, social cohesion, discrimination, and incarceration); 4) education (e.g., early childhood education, high school enrollment, graduation rates, and literacy); and 5) neighborhood and built environment (e.g., housing quality, neighborhood crime, environmental conditions, and access to food; Office of Disease Prevention and Health Promotion [ODPHP], 2020).

**Social Determinants of Health and Mental Health**

As previously mentioned, sociocultural determinants have been explored in a singular fashion; however, it is imperative for them to be investigated in both a singular and collective manner, especially related to anxiety in adolescence. Taking this approach is essential, as it will enable proper navigation of the various sociocultural factors that are ever-present and consistently influential to mental health in adolescence. Not to mention, it is important to fully understand this approach, as it will impact how interprofessional collaboration and integrated behavioral health can play a pivotal part in curtailing the impact that adverse determinants have on mental health, specifically anxiety. This research study used the SDOH framework as a guide, to comprehensively explore the five SDOH domains: 1) economic stability, 2) health and healthcare, 3) education, 4) social and community context, and 5) neighborhood and built environment.

**Domain 1: Economic Stability**

The economic stability domain includes factors such as poverty, unemployment, food insecurity, and housing instability (ODPHP, 2020). This domain is important to explore, as over 39% of children live in low-income households (The National Center for Children in Poverty, 2021). It has been found that residing in poverty-stricken households often leads to housing instability and food insecurity (Francis et al., 2018). In fact, research shows that poverty is one of the main risk factors for emotional, mental, and behavioral disorders during adolescence (National Research Council & Institute of Medicine, 2009). Further, Braveman and colleagues (2017) mentioned that low socioeconomic status, food insecurity, and housing instability all lead to adverse mental health. While researchers have extensively explored employment (Evans & Booth, 2019) and poverty (Clark et al., 2017), little research has investigated the collective impact that adverse sociocultural determinants have on mental health outcomes and overall well-being during adolescence (Harper et al., 2015). Thus, it is of particular importance to not only acknowledge and challenge poverty, but also recognize the impact it has on adolescent mental health.

**Domain 2: Health and Healthcare**

The health and healthcare domain includes factors such as access to health care, primary care, and health literacy (ODPHP, 2020). The consistent access to and utilization of care has been found to be complicated by various factors, such as stigma, mistrust of providers, policies that yield elevated rates of clients who are uninsured, and plentiful external factors (e.g., transportation, location, economic stability, and health care shortages; Planey et al., 2019).
Similarly, Chen and colleagues (2016) found that historically oppressed racial and ethnic groups are less likely to have access to optimal mental health care, as well as less likely to utilize available mental health services. Although access to effective and efficient mental health care can lend itself to optimal mental health (Cook et al., 2017), over thirty million children, adolescents, and adults who have been diagnosed with a mental illness go without treatment (National Alliance on Mental Health, 2016). This becomes increasingly complicated when minimal accessibility to care is associated with a maximized risk of morbidity for existing mental health conditions.

**Domain 3: Social and Community Context**

The social and community context domain includes factors such as social cohesion, recreation activities, discrimination, civic participation, and incarceration (ODPHP, 2020). Research has provided insight to this domain by acknowledging how essential community, social cohesion, and resilience are essential when addressing adverse childhood experiences (Ellis & Dietz, 2017). Additionally, perceived social cohesion was found to function as a moderating factor between structural and socioeconomic disadvantages related to anxiety symptoms in adolescence (Dawson et al., 2019), as well as influencing emotion regulation and lower occurrences of anxiety (d’Arbeloff et al., 2018). When looking closely at these components within adolescence, studies have found that minimal emotional support and inadequate emotion regulation is likely to lead to increased anxiety (Young et al., 2019). In addition to cohesion and support, adequate participation in recreational activities (e.g., clubs, activities, sports) serves as a protective factor against anxiety and increases resilience (McPhie & Rawana, 2015), produces favorable mental health outcomes, and minimizes the probability of anxiety during adolescence (Murphy et al., 2020).

**Domain 4: Education**

The education domain includes factors such as K-12 education, high school graduation, enrollment in higher education, and language and literacy (ODPHP, 2020). It is imperative to acknowledge the educational level (i.e., high school graduation, enrollment in higher education) of the parent and/or caregiver to fully understand how these factors impact mental health during adolescence. Though counseling research has investigated how inadequate mental health, specifically anxiety, impacts education (Winzer at al., 2018), very minimal information is available regarding how educational aspects impact mental health and health equity. Various studies have found a favorable relationship between mental health outcomes in adolescence and successful school completion (Dahmann & Schnitzlein, 2019; WHO, 2014). Conversely, the inability to complete high school and enroll in higher education yielded a strong correlation to poor mental health outcomes (e.g., anxiety), minimal well-rounded support, and minimal access to resources (Ramsdal et al., 2018). Though poverty and job insecurity, two factors within the economic stability domain, have been known to impact mental health during adolescence, research is lacking related to the various impacts of the education domain.

**Domain 5: Neighborhood and Built Environment**

The neighborhood and built environment domain, the final domain, includes factors such as environmental conditions, quality of housing, access to food, and crime and violence (ODPHP, 2020). Recent research has examined the role of neighborhood greenspace, such as open spaces, community gardens, and parks. Findings indicate that adequate greenspace
increases cohesion and overall well-being, reduces stress, lowers adverse mental health during adolescence, and is essential in decreasing unfavorable mental health outcomes (Liu et al., 2020; Templeton, 2019). Additionally, recreational centers have been proposed as a way to positively impact mental health in adolescence by providing a space for adolescent development, increased cohesion, and increased support (Pryor & Outley, 2017). Further, rundown housing, which is typically most common in historically oppressed and poverty-stricken neighborhoods, has been proven to increase the occurrence and sustainability of disparities and adverse mental health (Cutrona et al., 2006).

**Research Question**
As indicated above, it is well-documented that various demographic and SDOH factors influence mental health (Alegría et al., 2019). Further, the interconnection between physiological and psychosocial processes become significantly problematic when adverse factors related to SDOH are ever-present. Moreover, adverse factors associated with SDOH have been found to yield several mental health issues, specifically anxiety (Alegría et al., 2019), which also escalates present adverse sociocultural determinants. Though these unfavorable determinants adversely affect mental health during adolescence, it has not been deemed a priority in the counseling field or helping professions, in general. Effectively addressing SDOH is essential to improving mental health in adolescence, as well as minimizing prevalent health disparities (Artiga & Hinton, 2019; ODPHP, 2020). Due to very few studies focusing on SDOH in adolescence, this research aimed to fill the apparent gap in the literature, to not add provide insightful findings to the literature, but also to improve practice and DEI efforts in adolescent counseling. More specifically, this study aimed to obtain a better understanding of what sociocultural determinants impact the mental health of adolescents, specifically anxiety. Thus, using the SDOH framework as an exploratory foundation, the research question was: “Do social determinants of health significantly predict anxiety within adolescence, as diagnosed by a doctor or another health care professional?”

**Methods**
This study used a quantitative design that was multivariate and cross-sectional in nature. This cross-sectional design allowed for a descriptive study that analyzed data from a particular population during a certain period of time, for a distinct picture of widespread determinants. This design provided a comprehensive understanding of how SDOH contribute to the likelihood of experiencing adverse mental health outcomes (i.e., anxiety) during adolescence.

**Study Population**
This study used archival data from the 2018 National Survey of Children’s Health (NSCH; Child and Adolescent Health Measurement Initiative, 2019) to address the research question for this study. The 2018 NSCH was a nationally based survey of 30,530 households with at least one child from the age of one to seventeen years old. This study was composed of adolescents between 10 and 17 ($n = 16,013; M = 13.81$), with 52.5% ($n = 8,406$) identifying as male and 47.5% ($n = 7,607$) as female. The nationally representative race/ethnicity was mostly White (77%, $n = 12,407$), with the remaining participants being 0.9% American Indian ($n = 143$), 4.9% Asian ($n = 790$), 7.1% African American ($n = 1,134$), 0.3% Native Hawaiian ($n = 48$), 3.0% Some Other Race ($n = 473$), and 6.4% Two or More Races ($n = 1,018$). Although it is apparent that this sample is not racially and ethnically diverse, this demographic distribution aligns seamlessly with that of the United States, where over 60% of individuals identify as White.
and the remaining racial and ethnic groups making up less than 40% of the United States population (United States Census Bureau, 2019).

**Measures**

The measures from this study were pulled from the 2018 NSCH. The dependent variable in this study was anxiety, as diagnosed by a medical professional. The independent variables were participant demographics and the five SDOH domains. The demographic variables were age (i.e., “What is the age of the selected child?”), gender (i.e., “What is the gender of the selected child?”), and race/ethnicity (i.e., “What is the race of the selected child?”). Staying true to the SDOH framework, the SDOH variables, which were inclusive of parent information, were adult employment (i.e., “Were you employed at least 50 out of the past 52 weeks?”), food instability and housing insecurity (i.e., “Since this child was born, how often has it been very hard to cover the basics, like food or housing, on your family's income?”), the highest level of parent’s education (i.e., “Highest level of parents education.”), emotional support (i.e., “Do you have someone to turn to for emotional support?”), recreational activities (i.e., “During the past 12 months, did this child participate in A sports team or did he or she take sports lessons after school or on weekends?”; “During the past 12 months, did this child participate in: any clubs or organizations after school or on weekends?”; and “During the past 12 months, did this child participate in: Any other organized activities or lessons, such as music, dance, language, or other arts?”), current health insurance coverage (i.e., “Is this child currently covered by any kind of health insurance or health coverage plan?”), needed healthcare not received (i.e., “During the past 12 months, was there any time when this child needed healthcare, but it was not received?”), greenspace (i.e., “In your neighborhood, is/are there: sidewalks or walking paths?” and “In your neighborhood, is/are there: park or playground?”), recreation center (i.e., “In your neighborhood, is/are there: a recreation center, community center, or boys’ and girls’ club?”), and rundown housing (i.e., “In your neighborhood, is/are there: poorly kept or rundown housing?”).

**Data Analysis**

A single logistic regression was used. Logistic regression was chosen as it utilizes criterion measures on binary outcomes (Meyers et al., 2016) and displays the likelihood of a specific outcome when investigating each case (Tabachnick & Fidell, 2013). Further, the forced entry method was used, as it allowed the independent variables to be strategically analyzed within one block to assess their probability of controlling for the possible effects of other variables in the study’s model (Tabachnick & Fidell, 2013). All necessary assumptions were satisfied before performing the analysis. Since the dependent variable (i.e., anxiety) was binary, there was no multicollinearity between the predictor variables (VIF values = 1.02 to 1.21; tolerance values = 0.83-0.98). Further, the recommended sample size of 87 was reached, due to the sample size being 16,013.

**Results**

The full model containing all predictors was statistically significant, $\chi^2 (10) = 528.955$, $p < 0.001$. The model explained between 4.60% (Cox and Snell $R^2$) and 7.70% (Nagelkerke $R^2$) of the variance in the likelihood of being diagnosed with anxiety and correctly classified 83.60% of cases. The Hosmer and Lemeshow showed that the model with the predictors was significantly better than the baseline model with just the predicted values, $\chi^2 (8) = 8.773$, $p = .362$. 1. As shown in Table 1, eleven of the independent variables made a unique statistically significant
contribution to the model (i.e., age, sex, race/ethnicity), adult employment; food instability and housing insecurity; parent’s education; emotional support; recreational activities; current health insurance; needed healthcare not received; greenspace). Age (p < .001), sex (p < .001), adult employment (p < .001), food instability and housing insecurity (p < .001), parent’s education (p = 0.029), emotional support (p < .001), current health insurance coverage (p < .001) were all negative and significant predictors of anxiety. Race/ethnicity (p < .001), recreational activities (p < .001), needed healthcare not received (p<.001), and greenspace (p = 0.012) were all positive and significant predictors of anxiety. The strongest predictor of anxiety was needed healthcare not received, which indicated that needed healthcare not received predicted the likelihood of adolescents being diagnosed with anxiety when controlling for all other factors in the model. For a full representation of the logistic regression, see Table 1.

Table 1.
Logistic regression results

<table>
<thead>
<tr>
<th>Step 2</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
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<tr>
<td>Age</td>
<td>-.069</td>
<td>.010</td>
<td>46.608</td>
<td>1</td>
<td>&lt;.001</td>
<td>.933</td>
</tr>
<tr>
<td>Sex</td>
<td>-.413</td>
<td>.046</td>
<td>79.724</td>
<td>1</td>
<td>&lt;.001</td>
<td>.662</td>
</tr>
<tr>
<td>Race</td>
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<td>.015</td>
<td>31.515</td>
<td>1</td>
<td>&lt;.001</td>
<td>1.087</td>
</tr>
<tr>
<td>Adult employment</td>
<td>-.295</td>
<td>.077</td>
<td>14.722</td>
<td>1</td>
<td>&lt;.001</td>
<td>.745</td>
</tr>
<tr>
<td>Food instability and housing insecurity</td>
<td>-.289</td>
<td>.029</td>
<td>97.584</td>
<td>1</td>
<td>&lt;.001</td>
<td>.749</td>
</tr>
<tr>
<td>Parent’s education</td>
<td>-.336</td>
<td>.154</td>
<td>4.790</td>
<td>1</td>
<td>.029</td>
<td>.715</td>
</tr>
<tr>
<td>Emotional support</td>
<td>-.201</td>
<td>.060</td>
<td>11.032</td>
<td>1</td>
<td>&lt;.001</td>
<td>.818</td>
</tr>
<tr>
<td>Recreational Activity</td>
<td>.369</td>
<td>.034</td>
<td>115.808</td>
<td>1</td>
<td>&lt;.001</td>
<td>1.446</td>
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<tr>
<td>Health insurance</td>
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<td>.132</td>
<td>31.727</td>
<td>1</td>
<td>&lt;.001</td>
<td>.477</td>
</tr>
<tr>
<td>Needed health care not received</td>
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<td>.104</td>
<td>122.691</td>
<td>1</td>
<td>&lt;.001</td>
<td>3.153</td>
</tr>
<tr>
<td>Greenspace</td>
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<td>.029</td>
<td>6.332</td>
<td>1</td>
<td>.012</td>
<td>1.075</td>
</tr>
<tr>
<td>Recreation Center</td>
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<td>.047</td>
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<td>.933</td>
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<td>Rundown Housing</td>
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<td>.073</td>
<td>3.043</td>
<td>1</td>
<td>.081</td>
<td>1.135</td>
</tr>
<tr>
<td>Constant</td>
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<td>91.295</td>
<td>1</td>
<td>&lt;.001</td>
<td>14.580</td>
</tr>
</tbody>
</table>

Dependent Variable: Anxiety

Discussion

The complex and interconnected systemic and health inequities that surround SDOH relentlessly introduce endless challenges that are consistently known to impact mental health during adolescence (Andermann, 2016; Chen et al., 2021). The CDC (2023) has prioritized efforts to improve health equity through addressing SDOH through an agency-wide framework. It has also been identified that poor mental health among adolescents is increasing and some groups are more affected than others, as indicated by Black students being more likely to attempt suicide (CDC, 2023). The undeniable health inequities related to adverse sociocultural
determinants will continue to be a prevalent social justice issue that ferociously impacts mental health during adolescence (Wilkinson & Pickett, 2020). The CDC has acknowledged its increased focus on efforts to address SDOH in order to advance health equity, fully acknowledging that certain groups are disproportionately affected by SDOH (Hacker et al., 2022). Thus, sufficiently working to address adverse sociocultural determinants is imperative in the pursuit of improving mental health during adolescence, as well as reducing current and anticipated health disparities, especially in historically oppressed communities (Artiga & Hinton, 2019; ODPHP, 2020).

**Demographics**

While this study aimed to uncover how SDOH predicted anxiety in adolescents, the included demographic variables of the participants (i.e., race, age, gender) were found to be significant. Race positively and significantly predicted the presence of anxiety in adolescents. While the logistic regression did not allow for detailed insight into how, this result is consistent with previous literature that discovered that race could impact anxiety (Asnaani et al., 2010). One previous study found that race and ethnicity are strongly associated with the outcome of certain anxiety disorders (Hwang & Ting, 2008). Research on comorbid disorders found that Hispanic and African American adolescents are more likely to develop anxiety when they are already experiencing symptoms of depression (Weller & Hanks, 2018). It is important to mention that while the demographics dataset from the 2018 NSCH survey was not particularly diverse, the predictive factor of race on anxiety is a significant finding and necessitates further investigation into analyzing race as a main contributing factor. Further, though not an intentional part of our research aims for this study, it is unique and elicits additional attention.

Additionally, Age, a negative and significant predictor, significantly predicted the absence of anxiety in adolescents. This finding aligns with previous literature (WHO, 2020). Specifically, anxiety has had the following prevalence rates according to age: 31.4% for ages 13 to 14, 32.1% for ages 15 to 16, and 32.3% for ages 17 to 18. Gender was a negative and significant predictor of the absence of anxiety, indicating differing outcomes based on gender. Being male decreased the predictability of anxiety while being female increased the predictability of anxiety. This discovery is consistent with previous research that found that females are more likely to experience various types of anxiety (i.e., separation anxiety; specific phobia; PTSD; social phobia; panic disorder; Polaris Teen Center, 2018). While countless factors could contribute to this, it is important to investigate how gender can predict anxiety in adolescents. Future research should further flush out these findings, especially regarding the role of race and ethnicity, age, and gender on anxiety symptoms and coping. Further, these three demographic constructs lend themselves to future exploration into how DEI plays a huge part in understanding and improving mental health in adolescence.

**SDOH Domains**

This study’s results epitomize how minimal adverse sociocultural determinants predict the unlikeliness of poor mental health outcomes (i.e., anxiety) during adolescence, while also slightly providing evidence that adverse determinants predict the prevalence of anxiety. This section will review the significant findings of this study.

**Economic Stability**
The results of this study exemplified that food stability, housing security, and consistent parental employment significantly predicted the absence of anxiety during adolescence, which aligns with previous research (Braveman et al., 2017; Evans & Booth, 2019). Though research has also found that unemployment, food instability, and housing insecurity can cause anxiety (Acevedo-Garcia et al., 2014; Hatem et al., 2020), this was not displayed in the results of this study, possibly due to the lack of racial/ethnic diversity. This aspect of this finding is unique and requires more investigation.

**Education**

Similarly, the completion of high school and enrollment in higher education predicted the absence of anxiety during adolescence. This finding is consistent with previous research that found that graduating high school and enrolling in higher education yields favorable factors, such as good mental health, higher income, stable housing, and increased support (College Board, 2017).

**Social and Community Context Domain**

Aligning with previous studies (Harandi et al., 2017; White et al., 2020), emotional support significantly predicted the absence of anxiety during adolescence. Whitehead and colleagues (2016) study showed that lack of support predicts the presence of anxiety, which supports the results of the current study. Additionally, consistent with previous research, a lack of involvement in recreational activities and clubs significantly predicted anxiety during adolescence (Murphy et al., 2020). Though not particularly surprising, it would be worthwhile to look more into this domain and what in particular causes anxiety in adolescence.

**Health and Healthcare Domain**

Results suggested that consistent and reliable insurance coverage significantly predicted the absence of anxiety during adolescence, which is consistent with previous literature (Bijal et al., 2019). However, studies have also found that the absence of insurance can lead to unfortunate mental health outcomes, such as anxiety (Kawaií-Bogue et al., 2017; Kessler et al., 2001). Additionally, healthcare that was needed but not received significantly predicted anxiety in adolescence, which is consistent with previous studies (Mojtabai et al., 2016). This discovery is important, as individuals experiencing mental illnesses continuously experience barriers when trying to secure affordable, accessible, and competent mental health care (National Alliance on Mental Health, 2016), which seems to lead to a lack of equitable healthcare.

**Neighborhood and Built Environment Domain**

The absence of green space predicted anxiety during adolescence, echoing previous research (Roe, 2018). This is an essential finding, as the presence of greenspace and recreation centers in communities is an essential component of positive mental health outcomes and overall wellness (Hedblom et al., 2019; Liu et al., 2020; Wood et al., 2017).

**Limitations**

Though this study had meaningful findings, some limitations should be considered. For instance, the use of existing data is often seen as problematic due to the inability of the researchers to select their own constructs (Cheng & Phillips, 2014). However, the researchers believed this to be a low risk due to the benefits of the 2018 NSCH dataset, which contains an
extensive number of constructs that are immaculately aligned with the five SDOH domains. Additionally, researcher bias is often a concern (Tabachnick & Fidell, 2013); though the researchers were intentional in examining the dataset, codebooks, and variables to minimize this bias. Further, while the 2018 NSCH was comparable to the demographics of the United States, it was not diverse in race/ethnicity. This can be seen as a noteworthy limitation when investigating SDOH, as historically oppressed populations typically encounter the most significant and prevalent adverse determinants (Weinstein et al., 2017). Further, this lack of diversity should be taken into account when considering the applicability of the findings. To increase the applicability of similar SDOH findings in adolescence, researchers should pay particular attention to the diversity of the participants, as well as increasing DEI efforts within the aim of the study.

**Implications for Clinical Mental Health Professionals**

This research narrowed the apparent gap in counseling research and practice related to SDOH and mental health during adolescence, providing support that SDOH domains can predict mental health (i.e., anxiety) during adolescence. When considering practice, SDOH naturally falls under the best practices for counseling ethics (American Counseling Association, 2014) and multicultural competencies (Ratts et al., 2016). The results suggest more emphasis be placed on thoroughly recognizing how SDOH impact overall mental health during adolescence. This has often been difficult due to counselors feeling frustrated and helpless when being faced with the complexities of SDOH constructs (Johnson & Mahan, 2019; Johnson et al., 2024). Thus, a well-researched and evidence based SDOH framework, like The Commission on Social Determinants of Health (CSDH), should be utilized to increase health equity through a framework for action on SDOH (Solar & Irwin, 2010). Further, the results of this study epitomize the need for counselors to become more aware of and knowledgeable about SDOH screening tools.

Additionally, this study found that various determinants can predict anxiety during adolescence, necessitating the need for screening tools, especially for historically marginalized populations, to understand individual needs and be proactive in treatment. For example, The Well RX contains constructs that align with various SDOH domains and could help minimize the impact of SDOH on adolescents. Lastly, the results of this study increase the need for SDOH to be included in counselors’ training and education. Counselor education minimally addresses important constructs related to SDOH; rather, it’s breezed through it within social and diversity courses (Johnson & Robins, 2021; Sharma et al., 2018).

**Implications for School-Based Mental Health Professionals**

School-based mental health professionals play a crucial role in addressing the impact of sociocultural determinants on adolescent mental health. Mental health professionals should consider the sociocultural context when assessing and developing intervention plans for adolescents. Consider adapting interventions to align with the cultural values, norms, and practices of students and their families. Since the current study’s results show that race is a predictor of anxiety, race should be an integral part of the intervention. Fostering collaboration with teachers, parents, community leaders, and other partners to create a supportive environment that acknowledges and addresses sociocultural determinants affecting students’ mental health may be paramount. Clemons (in press) speaks to collaborate with community entities that have mental health initiatives.
Implications for Interprofessional Collaboration and Integrated Behavioral Healthcare

Primary prevention of behavioral health concerns (i.e., anxiety) by interdisciplinary health professionals is an important dimension of population health and IBH. Interdisciplinary teams in IBH settings can engage in IPC to comprehensively assess the presence of SDOH that this study found to be significant predictors of adolescent anxiety (e.g., absence of green space, food insecurity, housing insecurity). This may contribute to a better understanding of the sociocultural context of individuals receiving healthcare, allowing for interdisciplinary healthcare professionals to design the most appropriate interventions and allocate resources that may address SDOH contributing to anxiety.

Another vital consideration for interdisciplinary providers is ensuring accessibility to healthcare services, which was found to be a significant negative predictor of anxiety in this study. Medical, behavioral, and human services providers can use IPC to connect adolescents to needed healthcare services, including providers who provide services pro bono or on a sliding scale. By having human services professionals collaborate with other professionals, sociocultural determinants could be screened for, thus minimizing the chance of them significantly impacting mental health during adolescence. Further, IPC between providers working together may be enhanced through the utilization of the ecological social justice theory (Johnson et al., 2022) to guide efforts in assessing and addressing adverse SDOH in adolescent anxiety. This study reinforces the importance of accessible, effective healthcare services. These SDOH, as well as others outlined in this study, have been repeatedly shown to be more prevalent for individuals who identify with historically marginalized and oppressed communities (Johnson et al., 2024; Robins et al., 2023). IPC between health professionals in IBH settings may contribute to improved wellness for adolescents experiencing anxiety related to adverse SDOH. This might vary amongst professionals; however, in the quest for improved mental health, especially as it relates to minimizing the impact of SDOH during adolescence, collaboration and proactive planning must be at the forefront. In alignment, this study provides additional context and rationale for effective screening and intervention for SDOH during adolescence.

Suggestions for Future Research

This study exposed the impact that multiple adverse sociocultural determinants have on anxiety during adolescence, but there is still a significant literature gap related to this topic. First, and as previously noted, future research should further flush out the role of individuals’ identities on anxiety symptoms and coping. Findings from the current study align with those of previous research that highlight how race, age, and gender can shape daily life experiences, which can increase symptoms related to anxiety and depression. Utilizing a diverse sample of participants could yield meaningful results. Additionally, it would be advantageous for researchers to engage in research that is quantitative in nature and focuses primarily on the various SDOH domains and indicators, how they impact mental health in adolescence, and how they shape overall development. It could also be beneficial for quantitative researchers to focus on a specific SDOH domain, implement a range of supportive interventions, and measure participant progress over time. Using a qualitative approach, researchers could complete a study that is focused on how interprofessional collaboration and IBH play a role amidst the helping professions with the goal of combating adverse determinants during adolescence. A component of this study would benefit from focusing on the attitudes of helping professionals, such as school-based mental health counselors and community partners, related to the topic. It would also be beneficial for a
diverse group of researchers to engage in qualitative research that has a strong focus on the impact of adverse, and favorable, sociocultural factors on mental health in adolescence overall, especially within communities that have been historically oppressed. Finally, healthcare providers who work in IBH settings and/or consistently engage in IPC would benefit from an increased understanding of best practices for assessment and intervention for SDOH in adolescence. While it is important to understand the rationale for this assessment and intervention, understanding best practices is a practical dimension that would greatly benefit interdisciplinary professionals and their patients.

Conclusion

This research study yielded meaningful and unique results related to how SDOH impact anxiety during adolescence. The results of this study revealed that a lack of adverse sociocultural factors decreased the probability of experiencing anxiety during adolescence. Distinctly, this study found that adult employment, food stability, and housing security, parents’ education, emotional support, and health insurance coverage significantly predicted the absence of anxiety in adolescents. Findings unsurprisingly exposed negative mental health outcomes when adolescents experienced adverse determinants such as minimal recreational activity, needed healthcare not received, minimal greenspace, and rundown housing. These findings are insightful and provide unique implications for various professionals, as we work towards favorable mental health for all adolescents amid a mental health crisis (Adams, 2023). When considering this crisis, it is especially important to broach the need for interprofessional collaboration and IBH to minimize the impact that adverse sociocultural determinants have on our adolescent population (Adams, 2023). Conclusively, the results of this research study deliver a sense of immediacy to intentionally investigate adverse SDOH to further understand the impact this has on mental health in adolescence, especially in historically oppressed and racially diverse communities.

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