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Prevalence, patterns, and predictors of meditation use among U.S. children: Results from the National Health Interview Survey

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ABSTRACT

Objectives: The purpose of the study is to examine the characteristics of various types of meditation use (i.e., mantra, mindful, and spiritual meditation) among U.S. children.

Methods: Using 2017 National Health Interview Survey, we examined the prevalence, patterns, and potential predictors of meditation use among U.S. children aged 4 to 17 years. Descriptive statistics, Wald F chi-square test, and multivariable logistic regression were used for data analysis (n = 6925).

Results: Overall meditation use has increased substantially from 1.6% in 2012 to 7.4% in 2017 among children in the US. Children with chronic medical conditions were more likely to use mindful meditation (Adjusted Odds Ratio (AOR) = 1.9–3.6, 95% CI [1.0–7.4]). Regularly taking prescription medication had an inverse relation with mantra meditation use (AOR = 0.4, 95% CI [0.2–0.9]). Children with delayed medical care due to access difficulties were more likely to use spiritual meditation, compared to those who did not (AOR = 1.7, 95% CI [1.1–2.6]).

Conclusions: Meditation use has rapidly increased among U.S. children within the past few years. Future studies should explore the underlying reasons for this increase and its potential benefits for pediatric meditators.

1. Introduction

With the increasing use of complementary and alternative medicine (CAM) in Western societies, meditation has also gained popularity in the United States (U.S.), especially in the last few years.[1–3] Based on several recent nationally representative surveys, the use of meditation among U.S. adults has increased from 7.9% in 2012 to 18.5% in 2017.[4,5] In parallel, research on the efficacy and effectiveness of meditation techniques has burgeoned, with findings regarding usefulness for multiple health issues, such as anxiety, stress, and pain conditions.[6–8]

Meditation is a mind and body practice which has been incorporated into many cultures and traditions throughout history.[9] The practice of meditation includes a variety of techniques, such as mantra meditation, mindfulness meditation, and spiritual meditation, which can be used for increasing relaxation, psychological balance, spiritual growth, and overall well-being.[10]

In general, mantra meditation employs the use of a repeated word or phrase (e.g., Om Mani Padme Hum), with the objective of maintaining attention on that specific object. Mindfulness meditation involves intentionally bringing one's attention to one's breath or other naturally occurring present-moment phenomena, and when thoughts, feelings, or sensations distract from present-moment awareness, just noticing and letting them go, without judgment. Spiritual meditation focuses on developing a deeper understanding of the spiritual/religious meaning and connection with a higher power.[11] Although there are a variety of approaches, meditation fundamentally involves undertaking a set of intentional practices that lead to increased awareness, greater presence, and a more integrated sense of self.[12]

Recently, a growing body of scientific research has explored the role of various types of meditation in both children and adults. The results indicate that meditation may generate substantial health benefits, such as reducing depression, alleviating pain, increasing calmness, and improving brain function.[13–21] Despite the increasing use of meditation and evidence-based support for its benefits, little is known about the characteristics of meditation use among the pediatric population in the U.S., with only a few studies reporting demographic information on children's meditation use within studies of overall CAM use.[9,22,23]

To address this knowledge gap, the purposes of this study were to (1) describe the prevalence and patterns of meditation use in children,

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and (2) identify important potential predictors of use of various meditation techniques in this population, utilizing the recent 2017 National Health Interview Survey (NHIS) data. Insights gained from this study will be valuable for informing clinical practice, meditation education, and future research on U.S. pediatric meditators.

2. Methods

2.1. Data Sources

We used the data from the 2017 NHIS Family File and the Sample Child file for our analyses. NHIS is cross-sectional survey conducted by the National Center for Health Statistics (NCHS) and the Centers for Disease Control and Prevention (CDC).[24] Generally, NHIS collects data using four main components: the Household, Family, Sample Child, and Sample Adult File. Among 9601 children eligible for the 2017 NHIS survey, surveys were completed for 8845 children (response rate = 92.1%). In 2017, the NCHS accessed the use of Complementary Health Approaches (CHP), including meditation, with meditation-use data within the Sample Child File provided on 6925 children aged 4 to 17. More details about the NHIS can be found at https://www.cdc.gov/nchs/nhis/nhis_2017_data_release.htm.

2.2. Measures

2.2.1. Meditation use

The 2017 CHP supplement asked parents about their children's use of various meditation techniques via the following six questions: (1) During the past 12 months, did sample child use: Mantra Meditation, including Transcendental Meditation®, Relaxation Response, and Clinically Standardized Meditation? (2) Mindfulness meditation, including Vipassana (vih-PAS-sah-nah), Zen Buddhist meditation, Mindfulness-based Stress Reduction, and Mindfulness-based Cognitive Therapy? (3) Spiritual meditation including Centering Prayer and Contemplative Meditation? (4) Did sample child do meditation as part of Yoga? (5) Did sample child do meditation as part of tai chi? (6) Did sample child do meditation as part of qigong? We defined any meditation use as those who answered 'yes' to any of the six questions according to how meditation is defined from the National Center for Complementary and Integrative Health.[10] We examined four outcome variables including any meditation and the use of three specific meditation techniques including mantra, mindfulness, and spiritual meditation, in the last 12 months.

2.2.2. Socio-demographics

Based on findings from previous studies and the availability of the 2017 NHIS data,[9,19,20,23,25] we examined socio-demographics, health care-related factors, and several medical conditions and/or symptoms to identify the factors that are potentially associated with meditation use among children in the U.S. In particular, we included the following sociodemographic factors in this study: age (younger children – 4–11 years vs. older children – 12–17 years), gender (boys vs. girls); race (non-Hispanic White vs. black/Hispanic or other race); highest education of either parent (high school graduate or less, some college, and bachelor's degree or more); annual household income (≤$34,999, $35,000–$74,999, and ≥$75,000); and region of the country (northeast, midwest, south, west).

2.2.3. Medical conditions and symptoms

To identify the relationship between different forms of meditation use and the presence or absence of chronic medical conditions/symptoms, we examined the association of meditation use in children with five medical conditions including headaches, depression, ADHD/ADD, asthma, and respiratory allergy, based on previous studies.[13,16,23,25,26] Infrequent conditions, such as arthritis, diabetes, sickle cell anemia, congenital heart disease, were excluded from the analysis due to the small sample size.

2.2.4. Health care access and utilization

We also examined the association between meditation use among children and their conventional medical care access and utilization status including: (1) regularly taking prescription medication for at least three months, (2) having difficulty affording prescription medication when needed, (3) having difficulty affording mental health care or counseling when needed, and (4) delayed medical care due to access difficulties. Based on suggestions from previous studies, we collapsed data regarding delayed medical care due to access difficulties (difficulty getting through on the phone, couldn't get an appointment soon enough, the wait was too long to see a doctor, wasn't open when you could get there, didn't have transportation) into a single dichotomous variable (delay vs. no delay in traditional medical care access).[23,25]

2.3. Statistical analyses

We used descriptive analysis to examine the prevalence with standard error (s.e.) for any meditation use and three forms of meditation use by demographics and health care related variables. Chi-square tests were used to compare the prevalence of any meditation users and non-meditators by demographic and health care related factors.

We used Wald *F*-statistics to compare the percentage of any meditation, mantra meditation, mindfulness meditation, and spiritual meditation among children with and without medical conditions/symptoms including headache, depression, ADHD/ADD, asthma, and respiratory allergy.

We used multivariable logistic regression models to identify sociodemographic factors, chronic medical conditions/symptoms, and traditional health care access and utilization factors associated with the use of any meditation use and three specific meditation forms (i.e., mantra, mindfulness, and spiritual meditation) among children. To examine the association of the potential factors with meditation use, we calculated the adjusted odds ratio (AOR) and 95% confidence interval (CI). Statistical significance for the outcomes in the logistic models was set as $p < 0.05$.

Data management and statistical analyses were performed using SAS 9.4 version (SAS Institute Inc., Cary, NC). We used Proc SURVEYMEANS to obtain prevalence estimates and standard errors, Proc SURVEYFREQ to perform the Wald F-tests, and Proc SURVEYLOGISTIC to obtain AOR and 95% CI. The complex sampling strategy was taken into account in all analyses. Missing data were handled by the listwise deletion in SAS when the analyses were conducted.

3. Results

Out of the 6925 children for whom data were obtained regarding meditation related questions, 43.0% (weighted hereafter) were 4 to 11 years old; 50.9% were males; 73.1% were non-Hispanic white (vs. 26.9% black/Hispanic or others); 44.3% had parent(s) who had a bachelor's degree or higher (vs. 30.6% some college and 25.1% high school or less); 46% had parents who had an annual household income ≥$75,000 (vs. 25.9% ≤$34,999 and 27.8% from $35,000 – $74,999); and 23.8% lived in the west of the country (vs. 17.8% in the northeast, 21.7% in the midwest, and 36.7% in the south).

The estimated prevalence of any meditation use was 7.4% in the last 12 months prior to the 2017 survey year, which represents approximately 4.3 million of children in the U.S. Among these pediatric meditators, 1.0% (Est. 571,165 children) used mantra meditation, 1.6% (Est. 917,136 children) used mindfulness meditation, 4.0% (Est. 2,307,461) used spiritual meditation (Fig. 1), and 3.0% (Est. 1,720,591 children) practiced meditation as part of yoga, tai chi, or qigong, which accounts for approximately 40% of the pediatric meditators.

Table 1 shows the demographics of meditation users (any, mantra, mindfulness, and spiritual) and non-meditation users. Compared with

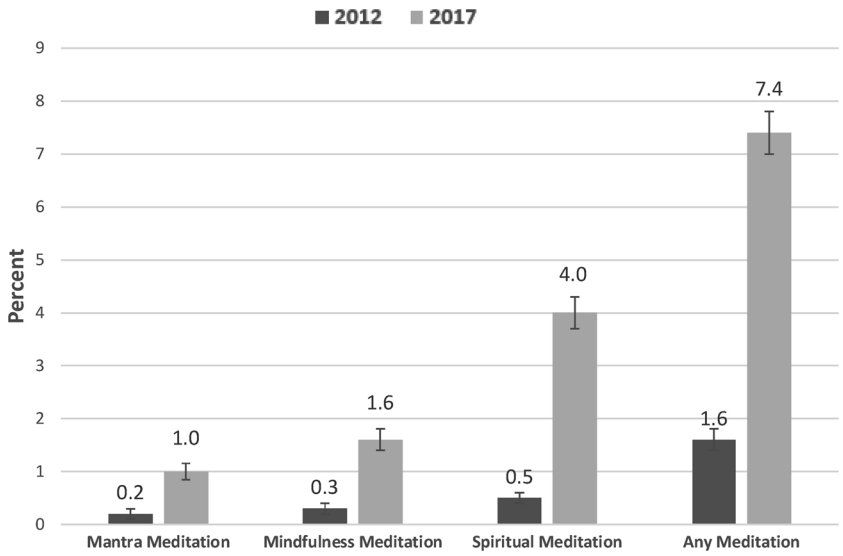

Fig. 1. Percentage of children aged 4–17 years who used selected meditation techniques during the past 12 months: United States, NHIS 2012 and 2017.

non-meditators, any meditation use was higher among older children, girls, and those with a parent who completed some college compared to their counterparts. Any meditation use was also higher among children who had regularly taken prescription medication for at least three months (18.9% vs. 14.3%, $p = 0.01$), had difficulty affording mental health care or counseling (2.7% vs. 1.0%, $p = 0.001$), and had delayed medical care due to access difficulties (14.1% vs.9.4%, $p = 0.004$).

Table 2 shows the percentages of any meditation use, mantra, mindfulness, and spiritual meditation use among children with and without common chronic medical conditions/symptoms including headache, depression, ADHD/ADD, asthma, and respiratory allergy. Meditation use, overall, was higher among children with headaches and depression than those without in all of the three forms of meditation ($p < 0.05$). In addition, mindfulness meditation and any meditation

Table 1
Characteristics of Meditation Users among children aged 4 to 17 years in the United States ($n = 6925$): NHIS 2017[a].

Socio-demographics	Mantra Meditation % (s.e.)	Mindful Meditation % (s.e.)	Spiritual Meditation % (s.e.)	Any Meditation[c] Users % (s.e.)	Non-Meditation[c] Users % (s.e.)	p[b]
Age (years)						0.03
4–11	52.0(7.3)	51.4(5.9)	47.6(3.4)	51.4(2.7)	57.4(0.8)	
12–17	48.0(7.3)	48.6(5.9)	52.4(3.4)	48.6(2.7)	42.6(0.8)	
Gender						0.001
Girls	62.7 (7.3)	62.1 (5.6)	50.1 (3.9)	57.3 (2.6)	48.5 (0.7)	
Boys	37.3 (7.3)	37.9 (5.6)	49.9 (3.9)	42.7 (2.6)	51.5 (0.7)	
Race						0.78.
Non-Hispanic White	71.4 (7.7)	74.3 (5.5)	71.9 (3.4)	72.4 (2.4)	73.1 (1.0)	
Black, Hispanic and Other	28.6 (7.7)	25.8 (5.5)	28.1 (3.4)	27.6 (2.4)	26.90 (1.0)	
Parent's Education						< .0001
High school or less	5.6 (2.7)	11.9 (4.6)	18.0 (3.3)	14.1 (2.2)	26.0 (0.9)	
Some college	28.1 (6.6)	29.8 (5.0)	26.7 (3.3)	25.1 (2.4)	31.0 (0.8)	
Bachelors or higher	66.4 (6.8)	58.3 (5.8)	55.3 (3.8)	60.9 (2.9)	43.0 (1.0)	
Income						0.16
≤$34,999	25.1 (7.0)	20.3 (5.0)	23.1 (3.3)	22.5 (2.5)	26.2 (0.9)	
$35,000–$74,000	21.3 (7.4)	27.0 (5.4)	29.5 (3.6)	26.1 (2.5)	27.9 (0.8)	
≥$75,000	53.6 (8.1)	52.7 (6.1)	47.4 (3.9)	51.4 (2.9)	45.9 (1.1)	
Region						0.11
Northeast	30.0 (7.4)	27.2 (5.4)	9.7 (2.5)	17.9 (2.6)	17.8 (1.1)	
Midwest	20.7 (7.1)	20.2 (4.2)	23.1 (3.4)	21.9 (2.4)	21.7 (0.9)	
South	20.2(5.3)	13.1 (3.1)	36.3 (3.9)	31.1 (2.9)	37.1 (1.4)	
West	29.1 (5.9)	39.5 (5.5)	31.0 (4.0)	29.1 (2.8)	23.4 (1.2)	
Difficult Affording Prescription in the Last 12 Months	2.3(1.8)	3.7 (2.1)	3.4 (1.1)	3.2 (0.8)	1.8 (0.2)	0.04
Regularly Taking Prescription Medication in the Last 3 Months	18.3 (4.4)	28.6 (4.9)	17.3 (2.5)	18.9 (1.9)	14.3 (0.6)	0.01
Difficult Affording Mental Health Care or Counseling When Needed	4.5 (2.6)	7.5 (3.1)	1.4 (0.7)	2.7 (0.8)	1.0 (0.1)	0.001
Delayed Medical Care Due to Access Difficulty	17.1 (5.0)	13.4 (3.3)	16.2 (2.7)	14.1 (1.8)	9.4 (0.5)	0.004

Notes: ADHD/ADD: Attention Deficient Hyperactive Disorder; BMI, Body Mass Index.

[a] Data sources from NHIS 2017, percentages are weighted for survey design and based on the U.S. census (2010) for the child civilian, non-institutionalized household population.

[b] p-Values come from for survey weighted Wald F-statistic, which compares differences between any meditation users and non-meditation users.

[c] Any meditation users is defined as sample child reported by family members that they used either mantra meditation, mindful meditation, spiritual meditation, or did meditation as part of yoga, tai chi, or qi gong.

Table 2
Percentage of mantra, mindful, spiritual, and any meditation use[a] in the last 12 months (standard error) among children with medical conditions and symptoms.

Medical Conditions and Symptoms	% Mantra Meditation use (s.e.)	p[b]	% Mindful Meditation use (s.e.)	p[b]	% Spiritual Meditation Use (s.e.)	p[b]	% Any Meditation use (s.e.)	p[b]
Headache[c]		0.03		0.02		0.02		0.0005
Yes	4.0(1.4)		4.5(1.3)		6.9(1.3)		6.9(0.4)	
No	0.8(0.1)		1.4(0.2)		3.8(0.3)		14.3(2.1)	
Depression[d]		0.007		0.001		0.03		0.0001
Yes	2.9(0.8)		4.2(0.9)		6.4(1.1)		6.7(0.4)	
No	0.7(0.1)		1.2(0.2)		3.7(0.3)		13.2(1.6)	
ADHD/ADD[e]		0.10		0.001		0.59		0.02
Yes	2.2(0.8)		4.8(1.0)		4.5(1.1)		7.1(0.4)	
No	0.9(0.1)		1.3(0.2)		3.9(0.3)		10.8(1.5)	
Asthma[f]		0.75		0.73		0.26		0.86
Yes	1.3(0.4)		2.6(0.6)		4.8(0.9)		7.3(1.8)	
No	1.6(1.0)		2.2(1.1)		3.2(1.0)		9.3(1.3)	
Respiratory Allergy[g]		0.05		0.03		0.12		0.001
Yes	2.2(0.7)		3.2(0.8)		5.3(0.9)		6.7(0.4)	
No	0.8(0.1)		1.4(0.2)		3.8(0.3)		11.9(1.5)	

Notes: ADHD/ADD: Attention Deficient Hyperactive Disorder/Attention Deficient Disorder

[a] Any meditation use is defined as sample child reported by family members that they used either mantra meditation, mindful meditation, spiritual meditation, or did meditation as part of yoga, tai chi, or qi gong.

[b] Survey weighted Wald *F*-test comparing percent of different forms of meditation use between children with and without the indicated medical conditions and symptoms.

[c] Headache refers to frequent or severe headaches (including migraines).

[d] "Depression" means it is sometimes true or often true that sample child has been unhappy, sad, or depressed in the last two months.

[e] "ADHD/ADD" means that children currently have ADHD or ADD.

[f] "Asthma" means children still have asthma.

[g] "Respiratory Allergy" means children had respiratory allergy during the past 12 months.

use were higher among children who had ADHD/ADD and respiratory allergy than among those who did not ($p < 0.05$). There was no difference in any form of meditation use between those who had asthma and those who did not.

Table 3 shows the results of adjusted multivariable regression analysis. Logistic regression models revealed that, overall, those who were girls, had a parent who completed some college, and had headaches, depression, or respiratory allergy had greater odds of using any meditation than their counterparts (adjusted odds ratio (AOR) range from 1.4 to 3.5, 95% confidential interval [CI] range from 1.1–5.2). Any meditation use was not significantly associated with any health care related factor, controlling for other sociodemographic factors. Any meditation use was lower among children living in the south (AOR = 0.6, 95% CI 0.4–0.9) compared with those living in the west, northeast, and midwest.

Using three separate sub-analyses with adjusted models, we also examined different sociodemographic, health care-related factors, and medical conditions and symptoms associated with the use of the three forms of meditation. Mantra meditation was more likely to be used in those whose parent has some or more college education (compared to high school or less), who lived in the west region of the country (compared to those who lived in the northeast, midwest, and south), and who reported having headaches, depression, or respiratory allergy (compared to those who did not). Children regularly taking prescription medication in the last three months were less likely to use mantra meditation compared with those who did not (AOR = 0.4, 95% CI 0.2–0.9). Mindfulness meditation was significantly associated with being a girl; living in the west versus the south and midwest; having a parent with some or more college education; having ADHD/ADD, depression, and respiratory allergy; and having difficulty affording mental health care or counseling (AOR = 3.8, 95% CI 1.4–10.8). Spiritual meditation use significantly correlated with being older, having a parent who has a bachelor degree or higher, and living in the west, south, and midwest versus the northeast. None of the four medical conditions/symptoms was associated with spiritual meditation use. However, children who had delayed health care due to access difficulties were more likely to use spiritual meditation (AOR = 1.7, 95% CI 1.1–2.6).

4. Discussion

The prevalence of any meditation use among children has increased substantially from 2012 to 2017. Compared with results from the 2012 NHIS, the rates of mantra and mindfulness meditation use have quadrupled. The prevalence of spiritual meditation use has increased sevenfold. Contrary to the 2012 NHIS report that over 80% of pediatric meditators used meditation as part of yoga, tai chi, and qigong,[9] our study found that only approximately 40% of children practiced meditation as part of yoga, tai chi, and qigong whereas about 60% of children engaged in the practice of either mantra, mindfulness, or spiritual meditation. Reasons for children's recent increasing use of specific meditation techniques that are not part of movement-based CAM approaches has not been well documented in the literature, although some previous studies about meditation use among adults have suggested that the increasing popularity of meditation use as a stand-alone practice may be due to the perception that meditation is beneficial for various chronic medical conditions, safe, easy to use, and without negative side effects.[2,3,20]

Children living in the west region of the U.S. and having a parent with a bachelor degree or higher were independently associated with higher meditation use in all three techniques, which is consistent with findings in other studies regarding meditation use among adults as well as the overall CAM use among children.[9,19,20,23] Although previous studies suggest that girls are more likely than boys to participate in mind-body techniques such as yoga,[9] there were no gender differences found for any of the three meditation forms in our study. Although no age differences were found for practicing mantra and mindfulness meditation, older children were more likely than younger children to use spiritual meditation. This may be because older children have greater capacity for abstract and conceptual thought, which is usually associated with motivations to practice spiritual-based meditation, such as Centering Prayer and Contemplative Meditation.

Interestingly, in our study, race was not associated with any forms of meditation use in children. This finding differs from a previous study

Table 3
Predictors for mantra, mindful, spiritual, and any meditation use among U.S. children age 4 to 17 years in the last 12 months (n = 6925): NHIS 2017.

	Mantra meditation use AOR (95% CI)	Mindful meditation use AOR (95% CI)	Spiritual 'meditation use AOR (95% CI)	Any meditation use AOR (95% CI)
Demographics				
Age				
4–11			Reference	
12–17			1.4 (1.1–1.9)*	
Gender				
Boys				Reference
Girls				1.4 (1.1–1.8)**
Race				
Non-Hisp. White				
Black/Hisp./Other				
Parent's Education				
High school or less	Reference	Reference	Reference	Reference
Some college	4.2(1.3–13.7)*			1.6(1.1–2.5)*
Bachelors or higher	8.2(2.7–24.9)***	2.8(1.2–6.5)*	2.4(1.4–4.2)**	3.5(2.3–5.2)***
Income				
≤$34,999				
$35,000-$74,999				
≥$75,000				
Region				
West	Reference	Reference	Reference	Reference
Northeast			0.4(0.2–0.8)**	
Midwest		0.5(0.3–0.9)*		
South	0.4(0.2–0.9)*	0.2(0.1–0.3)***		0.6(0.4–0.9)**
Medical conditions and symptoms				
Headache	4.1(1.8–9.3)***			1.6(1.1–2.5)*
Respiratory allergy	2.1(1.1–4.3)*	1.9(1.0–3.5)*		1.7(1.2–2.4)**
Depression	3.1(1.5–6.5)**	2.2(1.2–4.1)*		1.8(1.3–2.5)***
ADHD/ADD		3.6(1.8–7.4)**		
Health Care Access and Utilization				
Difficulty affording prescription medication				
Regularly Taking Prescription medication in the last 3 months	0.4(0.2–0.9)*			
Difficult affording mental health care in the last 12 months		3.8(1.4–10.8)*		
Delayed medical care due to access difficulties			1.7(1.1–2.6)*	

Notes. ADHD/ADD: Attention Deficient Hyperactive Disorder/Attention Deficient Disorder; AOR = odds ratio adjusted for gender, race, and age; CI = confidence interval.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

in adults, in which non-Hispanic Whites were more likely to use meditation compared to non-Hispanic Blacks, Hispanics, and Asians.[20] Given that parents are generally the gatekeepers for children's overall CAM use (including meditation),[9,22,23] the lack of correlation between race and meditation in among children is puzzling.

In our adjusted regression models, we found that children with chronic medical conditions/symptoms were more likely to use mantra meditation and mindfulness meditation than those without these medical conditions. These findings are consistent with reports from previous studies that mindfulness meditation is beneficial for children with various health issues including anxiety, depression, and chronic pain[27–29] and that mantra meditation is beneficial for enhanced brain function.[30] Such reports may have encouraged meditation use in children with various medical conditions.

Although some types of CAM use in children are generally associated with family income,[23] meditation is not. In our study, higher family income was not correlated with any forms of meditation use. This finding is consistent with a previous report on meditation use among adults.[19] Furthermore, our finding that children who have difficulties affording mental health care or counseling were more likely to use mindfulness meditation points toward the feasibility and affordability of mindfulness meditation as a CAM approach for maintaining psychological health in the pediatric population. Children regularly taking prescription medication in the last three months were less likely to use mantra meditation. This is a surprising finding since, in general, higher CAM use is associated with people taking prescription medication.[9,23] One possible explanation may be that mantra meditation is used as an alternative healing approach for medical conditions in various cultures; however, there has been little study of this possible relationship.

It is worth noting that the significant association of spiritual meditation practice with either presence or absence of medical conditions/symptoms in children disappeared after controlling for certain demographic factors (i.e., parent's education and region). Our finding suggests that chronic medical conditions/symptoms are not powerful predictors for children's use of spiritual meditation. It may also indicate that the health benefits of spiritual meditation are not well accessed by the NHIS.[31] Given the rapidly increasing use of spiritual meditation among the pediatric population in the past few years and its potential contribution to helping children with delayed health care due to access difficulties, future studies should explore the benefits of spiritual meditation.

5. Limitations

Our study has limitations. First, the data for children were obtained from an eligible adult in the household who recalled the details over the previous 12 months; as such, the information is susceptible to recall bias. In addition, since our study focuses on various types of meditation use among the pediatric population, the eligible adult may not always have been aware that a child was practicing meditation. Third, the sample size of children with both medical conditions and meditation use was small, and therefore associations between meditation use and some chronic conditions may not have been detected. Finally, caution is

warranted in inferring a causal relationship between medical conditions and meditation use because data were obtained from a cross-sectional study. Despite these limitations, our study provides innovative findings about the various forms of meditation use among children at the national level, allowing for generalization and population estimates.

6. Conclusion

Meditation use among children has increased substantially in the U.S. within the last few years. Based on our study's findings, children who have a parent with a four-year college degree and who live in the west region of the U.S. are more likely to practice meditation. However, with few exceptions, meditation use was found to be evenly distributed in children regardless of age, gender, race, and economic status, which indicates that meditation may be feasible and accessible for a broad population. Children with medical conditions/symptoms were more likely to use mantra and mindfulness meditation. Regularly taking prescription medication in the past three months had an inverse relation with mantra meditation use. Children who had difficulty affording mental health care and delayed medical care due to access difficulties were more likely to use mindfulness and spiritual meditation, respectively. Given the rapidly increasing use of meditation in children, future research should explore the underlying reasons for this increase and its potential benefits for this population.

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Conflict of interest

Authors have no conflict of interest to report.

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