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Use of Mind-Body Therapies among Young Adults 18–24: Findings from the 2012 National Health Interview Survey

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Abstract

Purpose—To investigate the prevalence, patterns, and satisfaction of use of mind-body therapies (MBT) in a nationally representative sample of young adults (ages 18–24).

Methods—Young adults interviewed in the 2012 National Health Interview Survey were analyzed (n = 3,286). Individual types (e.g., mindfulness) and a combined measure of use of any MBT were assessed. Reasons for and satisfaction with use was also investigated. Design-based F tests and logistic regression were used; all analyses were weighted and stratified by gender.

Results—Overall, 14.6% of young adults used MBT in the past year (9.6% of men and 19.1% of women, p < .001). Among men, higher levels of education, greater numbers of health conditions, and healthy behaviors were associated with greater odds of MBT use. Among women, Latina and Black women had lower odds of use (vs. White). Higher education, greater mental distress, and greater numbers of health conditions and healthy behaviors were associated with greater odds of use. While both men and women reported stress reduction and general wellness as top reasons for use, men also reported use to improve athletic performance.

Conclusions—Young adulthood is a critical period in the life course when individuals are establishing lifestyle and health behaviors that can be enduring. Because stress is a persistent problem, and many MBTs can be helpful with management of stress and anxiety, young adult may be underutilizing these modalities. Public health and educational strategies for greater engagement in MBT among young adults are warranted.

Keywords

mind-body therapies; young adults; complementary and alternative medicine; stress reduction

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Young adulthood (ages 18–24) is a period of significant social and psychosocial change, marked by multiple life course transitions as individuals navigate choices and opportunities related to schooling, military, employment, and relationships [1]. It is also the time when individuals are exploring and establishing their personal identities as adults, including lifestyle and health behaviors that can be enduring over their lives [1]. It is therefore not surprising that young adults report the highest stress level of any other age group [2]. Increasingly, Americans, including young adults, are incorporating various complementary health approaches (CHA) as part of a wellness lifestyle [3,4]. However, compared to older adults, relatively less is known about the ways in which young adults use CHA, especially in the context of health promotion and stress reduction [3,4].

CHA, also called complementary and alternative medicine (CAM), are practices, practitioners, and products that have been historically outside of conventional medicine [5]. In 2012, the year of the most up-to-date national figures, 33.2% of Americans used some form of CHA in the previous year [6]. Although CHA use tends to increase with age (except for those 65 and over), it is still commonly used among young adults with over one-third of young adults aged 18–29 reporting using some type of CHA modality in the past year [7]. Nevertheless, there are substantial gaps in our knowledge of patterns, prevalence, and reasons for CHA use among young adults. One important limitation of CHA prior studies is they sampled only college students rather than more broadly representative samples of young adults, leading to possible biases with respect to findings [8–11]. Although the percentages of young adults enrolled in college have increased over the last several decades, they still account for less than half (41%) of the young adult population [12]. Few CHA studies have explicitly focused on a nationally representative sample of young adults as we do here.

Research suggests that factors associated with CHA use in the general population are similar for young adults [4,10]. Specifically, young adults who are women, White, have higher socioeconomic status (SES), and poorer health are more likely to use CHA [4,10]. Mind-body therapy (MBT) is one type of CHA and includes practices such as meditation and progressive relaxation, as well as movement practices like yoga and tai chi. A growing body of evidence links MBT use to improvements in physical and mental health conditions, including mood and anxiety disorders [13], hypertension [14], irritable bowel syndrome [15], and others.

In national studies that have investigated use of MBT specifically, young adults commonly have lower rates of use than midlife adults [16–19], although there is some evidence that they have higher rates of use of some specific types of MBT modalities, such as yoga [10,16]. Because young adults report higher levels of stress and anxiety than older individuals [2] and many MBTs can be helpful with anxiety and stress management [20,21], young adults may be underutilizing these modalities. Moreover, little is known with respect to what type of specific MBT modalities are being used, the extent to which they are being utilized for stress management and health maintenance, or young adults' satisfaction with these modalities. The current study seeks to fill some of these gaps in the literature and provide possible opportunities for educational and public health outreach.

The purpose of the current study is to investigate the prevalence, patterns, and satisfaction of MBT use among young men and women in the United States. Additionally, gender differences in use of specific MBT modalities are examined. We utilize a sociobehavioral wellness approach [4,5] to understanding young adults MBT use. *Predisposing factors* refer to young adults' social placement, the resources available to them, and the ways in which they can marshal these resources to manage health issues. *Enabling resources* are those that facilitate or hinder use of CHA, *need* reflects the extent to which individuals use CHA to manage health conditions, and *lifestyle factors* reflect the personal health practices of individuals. Based on previous national studies that investigated MBT use for all age groups of adults, we hypothesize that women, Whites, those with higher SES, and those with poorer health will be more likely to use MBT. Although we also anticipate the main reasons to use MBT to be stress reduction and health promotion, that remains somewhat of an open question since few studies have investigated this, especially among young adults. And because we propose that young men and women might use MBT differently, and thus have different reasons for use, we investigate MBT separately for each gender.

Methods

Study Design and Population

The 2012 National Health Interview Survey (NHIS) is an in-person household survey of the US civilian and non-institutionalized population. Using a multi-stage probability sample design with clustering, stratification, and oversampling, one adult age 18 or over was randomly selected in each household to provide responses to detailed health questions (n=34,525). The survey response rate was 79.7% [22]. An Adult Alternative Medicine supplement is administered every five years which includes items related to the use of over 20 different types of CHA. The analytic sample used in this study consisted of all adults age 18–24 who completed the Adult Alternative Medicine supplement and had valid CHA information. Because 'other race/ethnicity' was a small and heterogeneous group, they were omitted, resulting in a final sample of 3,286. As the data are publicly available and de-identified, the study did not meet the Institutional Review Board's definition of human subjects research.

Outcomes

The primary outcome of interest was use of MBT in the past year. Individuals were asked if they engaged in any of 5 specific types of practices in the past 12 months: mantra meditation, mindfulness meditation, spiritual meditation, guided imagery, or progressive relaxation. Individuals were also asked if they used breathing or meditation as part of other practices, including yoga, tai chi, or qi gong. A response of "yes" to either of these items was coded as engaging in any MBT.

The secondary outcome focused on reasons for use and perceived helpfulness of MBT. Individuals who rated MBT as one of their top 3 CHA in the past 12 months were asked to give the most important reasons for use from a list of 18 possible reasons (e.g., reduce stress, improve energy, cope with health problems, sleep better). Respondents were then asked to

rate the extent to which they felt MBT helped with that issue (a great deal, some, only a little, not at all).

Covariates

Predisposing factors included gender (men and women), race/ethnicity (Non-Hispanic White, Hispanic/Latino, Non-Hispanic Black, and Non-Hispanic Asian), and nativity status (U.S. or foreign-born). Respondents also provided level of education (high school, > high school) and marital status (single, married, cohabiting). *Enabling resources* was measured as annual income (< \$34,999, \$35,000). *Need* included number of functional limitations (none, any), mental distress using the Kessler K6 scale [23] score (0–12, 13–24), and number of health conditions (0, 1, 2+, and as a continuous variable). *Lifestyle* included a measure of the number of healthy behaviors, a combined measure of healthy weight, adequate physical activity, non-smoker, and little or moderate alcohol consumption, (0–4, and as a continuous variable).

Analyses

Analyses were stratified by gender and were weighted using individual-level sample weights to account for the complex sample design. Cross tabulations and design-based F-tests were used for bivariate analyses. Logistic regression was used to examine the association between any MBT use and covariates. Adjusted odds ratios (AORs) and 95% Confidence Intervals (CI) are presented. Lastly, among those who reported MBT as one of their top 3 therapies, the 3 most important reasons for using it and perceived helpfulness for those reasons were tabulated. Missing data were minimal (<1.00%) except for income, for which multiple imputation was used [22]. Otherwise, variables were assigned modal or mean categories. Sensitivity analysis revealed no substantive differences when missing data were excluded. All analyses were conducted using Stata SE 14.1 statistical software [24].

Results

Table 1 shows the distributions of demographic, health, and lifestyle characteristics and prevalence of MBT use for young adults 18–24, separately by gender. Among young men 9.6% used MBT in the past year versus to 19.1% of young women. (Overall, 14.6% of young adults used MBT in the past year (not shown)). For men, there were significant differences in prevalence of use based on race/ethnicity, education, functional limitations, health conditions, and healthy behaviors. Asian and White men reported the highest prevalence of use (13.6% and 10.7% respectively, $p < .05$) and those who were high school graduates were over twice as likely to be MBT users ($p < .001$). Men with functional limitations ($p < .05$), who had more health conditions ($p < .05$), and greater numbers of healthy behaviors ($p < .001$) had higher prevalence of use (although men with 0 healthy behaviors had higher use than those with 1 or 2). Nativity status, income, marital status, and mental distress were not associated with MBT use.

For young women, there were significant differences in MBT use by race/ethnicity, education, marital status, mental distress, and healthy behaviors. Asian women reported the highest use of MBT (26.7%) followed by White women (23.4%) ($p < .001$). Women with

higher education had higher prevalence of use ($p<.01$) as did single women ($p<.05$). Women with greater mental distress had higher MBT use compared to those with less (18.7% versus 32.0%, $p<.05$) and women engaging in a greater number of healthy behaviors had higher use. In particular, 46.3% with 4 healthy behaviors reported MBT use ($p<.001$).

Table 2 presents the AORs for recent MBT use for young men and women. Among men, those with greater education had significantly higher odds of MBT use than men with less. In addition, men with greater numbers of health conditions or who engaged in more healthy behaviors had significantly higher odds than those who did not. Race/ethnicity, nativity status, income, marital status, and mental distress were not associated with MBT use.

Results were somewhat different for young women. Compared to White women, Hispanic/Latina and Black women had significantly lower odds of using MBT. Women with more education had higher odds of use relative to women with less. Women reporting more mental distress also had significantly higher odds of use, as did women with greater numbers of health conditions and healthy behaviors.

The next table (Table 3) shows the prevalence of use of MBT by type of specific practice and gender. The percentages of men and women using a particular practice were similar (i.e., types of meditation, guided imagery, and progressive relaxation), and the differences were not significant. However, there were substantial gender differences with respect to use of any MBT modalities that included yoga, tai chi, and qi gong with 19.1% of young women reporting using combined MBT compared to only 9.6% of young men ($p<.001$).

The final table (Table 4) reports the top 3 reasons for engaging in MBT and how much it helped for the reason provided, separately by gender. Almost one third (32.7%) of men said they used MBT to improve athletic or sports performance, and about two-thirds said it helped with that reason “a great deal” (35.4%) or “some” (30.8%), respectively. The second reason for men’s use was to help reduce stress and relax (21.1%), and 36.6% said it helped “a great deal”, while 52.4% said “some.” The third most common reason was for general wellness (15.8%), with about a quarter (23.5%) of men saying it helped “a great deal” and 41.6% saying it helped “some.”

Among young women, over one quarter (27.1%) of MBT users said they did so to reduce stress and relax and almost 90% said it helped “a great deal” (47.2%) or “some” (42.4%). The second most common reason for use was for general wellness (26.3%). Here almost a third (30.0%) said it helped “a great deal” and another 54.8% said it helped “some.” The third reason for use was to improve overall health (12.4%); again about a third (32.7%) said it helped “a great deal” and another 63.7% felt it helped “some.” Table 4

Discussion

This study demonstrates that use of MBT is relatively uncommon among young adults 18–24 with only 14.6% reporting MBT use in the past year. Predisposing, need, and lifestyle factors are associated with use and the effects are somewhat contingent on gender. There are no gender differences with respect to use of specific types of meditation and relaxation techniques, and there are significant gender differences when any type MBT is considered.

Last, the most common reasons for MBT among men are sports performance, stress reduction, and general wellness and among young women, stress reduction, general wellness, and to improve over health were the most common. It also appears young women report somewhat greater satisfaction with use of MBT than young men.

The prevalence of MBT use among young adults is lower than some earlier research that sampled only college students [8–11]. Prevalence of recent CHA use, including MBT, varies substantially across several of the studies of young adults [8–11]. Some of the variation may be due to differences in study designs including how MBT was operationalized and the populations considered. Also, as we show here, higher level of education is associated with greater use, thus one would expect studies of college students to report higher use. In addition, previous research has suggested insurance coverage is associated with higher CHA utilization [6]. It is possible that some college students are able to more easily access CHA modalities covered under student health insurance plans or available at student health centers [9], and this may contribute to differences in prevalence of CHA use between college students and other young adults.

Overall, our results are in line with those of previous studies that considered all adults' use of MBT [16–19], with some important new findings. Nearly one in five women and one in ten men are using any MBT, and these rates are comparable to trends for MBT use among all adults [6,16–19]. In addition, multivariate analyses revealed some notable gender differences with respect to the effects of specific variables in the sociobehavioral wellness model of CHA use. Among young men, there are no racial or ethnic differences in MBT use while among young women, Black and Latina women are less likely to use MBT than White women. While most CHA studies using NHIS have tended to include both genders and estimate only gender main effects, several earlier focused specifically on women only and show similar racial and ethnic findings among women 18 and over [25,26].

Higher levels of mental distress are associated with greater likelihood of using MBT among young women; that was not the case for young men. Although it is not possible to assess in this study, it may be that women with mental distress are using MBT to help ameliorate that distress. Previous research suggests there is evidence MBT, specifically yoga, may improve mental distress and related health outcomes in women [27]. Additionally, for both men and women, those reporting more health problems but also greater numbers of healthy behaviors are more likely to use MBT. These findings suggest young adults may be using MBT for both management of health conditions and for health promotion and wellness lifestyle [3,4,28].

A striking result is the low prevalence of young adults' use of specific types of meditation and relaxation techniques. For example, despite wide media attention and growing evidence base for mindfulness meditation, only slightly more than 2.0% of young adults engage in this practice. Further, the prevalence of use of mindfulness and other specific techniques (e.g., mantra, spiritual, etc.) are almost identical to results for all adults 18 and over [17] with the highest rates of use among those ages 40–64 [17]. Thus, although young adults experience higher levels of stress, they are engaging in these practices less so than older adults. Given young people tend to be more open to complementary or alternative types of

health practices and lifestyles [29], it is surprising their level of MBT use is less than older adults. There is some indication young adults may be engaging in other behaviors (e.g., social media, watching videos) for stress management [2]. Exploring the possible explanations for this observation is left for future research.

However, our findings also suggest future possibilities for education and public health messages and outreach to young adults around evidence-based stress management practices. Given the increased prevalence of mental health disorders among college students [30–32], there is an urgency to expand mental health support to include modalities that are acceptable and scalable. Evidence in the literature shows some potential opportunities; for example, a 2016 meta-analysis found online mindfulness based interventions could reduce stress and improve other mental health outcomes [33]. There are some reports in the literature describing colleges that are exploring MBT and other mental health support options through in person and digital delivery systems [34,35]. It would also be useful to investigate MBT programmatic strategies among other groups of young adults, including those in the military and in the work place.

Last, the current study shows that the primary reasons for MBT use differ for young men and women. Whereas women report stress reduction and general wellness as top reasons for MBT use, men identified improving sports performance as the primary reason, with stress reduction coming in second. Indeed, a recent study of CHA using the same found over 20% of users mentioned sports performance as a reason for use [36], and male adolescents more frequently report using CHA to enhance sports performance than female adolescents [37]. It is possible that tying CHA use to athletic purposes relates to men's pursuit of masculinity [38,39]. According to Brenton and Elliott [38], men frame their use of CHA in ways that reject aspects of these practices that are associated with femininity (e.g., using CHA for "emotional issues") and emphasize science, logic and rationality (e.g., the "biomechanics" of CHA enhance athletic performance). This finding may also be driven by the fact that men are generally less likely to seek out conventional health care services [40], and are less likely to use various types of CHA, and MBT in particular, compared to women [6]. Women in this study report somewhat higher satisfaction with their use of MBT than men. Because women are generally more likely to engage in health protective behaviors [40], we speculate that young women may be more consistent in their practice of these techniques or they may view them as more important to their health and well-being. Additional work examining frequency and duration of utilizing MBT would be useful to assess how these factors impact satisfaction.

There are limitations to the current study. First, the data in the NHIS are cross sectional which does not allow us to disentangle cause and effect. Also, the NHIS is very limited with respect to psychosocial variables that could be useful to better understand underlying motivations for MBT use. For example, benefits of MBT use are measured only through satisfaction with use, and as such, are subjective assessments. And, as mentioned earlier, there is little information regarding the ways in which individuals practice MBT; research indicates there may well be a dose-response relationship of duration and frequency of engaging in MBT practices and improved health and wellbeing [20,21]. Nevertheless, the

fact that the NHIS is a large and nationally representative sample of adults (and for this specific study, young adults) largely offsets these concerns.

Conclusions

Young adulthood is a critical period in the life course when individuals are establishing lifestyle and health behaviors that can be enduring. Because stress is a persistent problem, and many MBTs can be helpful with management of stress and anxiety, young adults may be underutilizing these modalities. Public health and educational strategies for greater engagement in MBT among young adults are warranted.

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Abbreviations

CHA	Complementary Health Approaches
CAM	Complementary and Alternative Medicine
MBT	Mind-Body Therapy
NHIS	National Health Interview Survey

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Implications and Contribution

Over 1 in 7 young Americans (18–24) use some type of mind-body therapy and the most common reasons for using are athletic performance (men) and stress reduction and general wellness (men and women). Women report somewhat higher satisfaction with their use of MBT than men.

Table 1

Selected characteristics and prevalence of use of any MBT in past year men and women, 18–24, NHIS 2012 (n = 3, 286)

Selected characteristics	Men (n = 1,461)	% Any MBT use men	Women (n = 1,825)	% Any MBT use women
Total	100.0	9.6	100.0	19.1
Race/ethnicity				
Non-Hispanic White	64.2	10.7*	60.0	23.4***
Hispanic/Latino	17.7	5.7	16.9	11.1
Non-Hispanic Black	11.9	7.4	17.3	9.7
Non-Hispanic Asian	6.3	13.6	5.9	26.7
Nativity status				
U.S. born	88.0	10.0	87.8	19.8
Foreign born	12.0	6.6	12.2	14.2
Education				
high school	41.7	5.5***	34.8	9.4***
> high school	58.3	12.5	65.2	24.3
Income				
\$34,999	59.3	10.9	67.0	20.3
\$35,000	40.7	7.6	33.0	16.8
Marital status				
Single	84.6	9.8	76.5	20.9*
Married	6.4	7.7	13.1	13.1
Cohabiting	9.0	8.4	10.4	13.8
Functional limitation				
None	86.9	8.8*	83.0	18.8
Any	13.1	14.6	17.0	20.8
K6 Score				
0–12	98.3	9.5	97.1	18.7*
13–24	1.7	13.7	2.9	32.0
Health conditions				
0	60.9	8.5*	54.6	17.3
1	22.4	7.9	25.9	19.7
2+	16.7	15.9	19.4	23.5
Healthy behaviors				
0	1.8	10.6***	1.7	19.1***
1	17.3	3.5	19.7	12.3
2	38.2	6.7	38.5	13.5
3	31.9	11.5	31.4	22.8
4	10.8	23.8	8.7	46.3

Notes:

* p<.05;

**
p<.01;

p<.001;

Design-based F test for bivariate analysis of each covariate by MBT use. P-values indicate significant difference across all categories of a covariate. Weighted percentages.

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Table 2

Multivariate results of any MBT use in past year, men and women, 18–24, NHIS 2012 (n = 3,286)

Selected characteristics	Men (n = 1,461) AOR (95% CI)	Women (n = 1,825) AOR (95% CI)
Race/ethnicity (Ref: Non-Hispanic White)		
Hispanic/Latino	0.70 (0.41, 1.22)	0.60 (0.39, 0.93) *
Non-Hispanic Black	0.83 (0.46, 1.48)	0.44 (0.27, 0.71) **
Non-Hispanic Asian	1.46 (0.71, 2.98)	1.34 (0.77, 2.34)
Nativity status (Ref: U.S. born)		
Foreign born	0.75 (0.36, 1.57)	0.76 (0.45, 1.27)
Education (Ref: High school)		
> High school	2.22 (1.25, 3.95) **	2.42 (1.65, 3.55) ***
Income (Ref: \$34,999)		
\$35,000	0.73 (0.48, 1.12)	0.80 (0.55, 1.15)
Marital status (Ref: Single)		
Married	1.06 (0.44, 2.57)	0.71 (0.45, 1.14)
Cohabiting	0.99 (0.44, 2.24)	0.66 (0.38, 1.16)
Functional limitation (Ref: None)		
Any	1.70 (0.82, 3.54)	1.12 (0.74, 1.70)
K6 score (Ref: 0–12)		
13–24	0.61 (0.12, 3.22)	2.35 (1.08, 5.09) *
Health conditions (continuous)	1.28 (1.09, 1.50) **	1.19 (1.06, 1.34) **
Healthy behaviors (continuous)	1.87 (1.42, 2.46) ***	1.59 (1.32, 1.93) ***

Notes:

* p<.05;

** p<.01;

*** p<.001.

Table 3

Prevalence of use of specific MBT, men and women, NHIS 2012 (n = 3,286)

Meditation practices in the past year:	Men (%)	Women (%)
Mantra	1.5	1.8
Mindfulness	2.0	2.2
Spiritual	2.4	3.0
Guided imagery	1.3	1.6
Progressive Relaxation	2.0	2.0
Any MBT	9.6	19.1 ^{***}

Notes: Any MBT includes the use of any of the specific MBT listed here as well as use of yoga, tai chi, or qi gong. P value is from comparison of each practice by gender using design-based F tests.

^{***}
p<.001.

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Table 4
 Top 3 reasons for use of any MBT in past year and how much it helped, men and women, NHIS 2012 (n = 434)

Most import reason		How much the MBT helped with the reason				
Rank	Reason	% of MBT users	A great deal %	Some% Only a little %	Not at all %	
Men (n=129)						
1	To improve your athletic or sports performance	32.7	35.4	30.8	31.9	1.9
2	To help reduce your stress level or to relax	21.1	36.6	52.4	11.0	0.0
3	Your general wellness or general disease prevention	15.8	23.5	41.6	35.0	0.0
Women (n=305)						
1	To help to reduce your stress level or to relax	27.1	47.2	42.2	9.3	1.3
2	Your general wellness or general disease prevention	26.3	30.0	54.8	11.4	3.9
3	To improve your overall health and make you feel better	12.4	32.7	63.7	2.1	1.5

Notes: This question was asked among those sample adults 18+ who rated meditation (including Mantra meditation, Mindfulness meditation, Spiritual meditation, Guided imagery, and Progressive relaxation) and/or Yoga/Tai Chi/Qi Gong as one of top three alternative medicine therapies in the past 12 months (N=449), and 15 out of 449 respondents did not give a response to this question.