Understanding Contemplators' Knowledge and Awareness of the Physical Activity Guidelines

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Background: The Office of Disease Prevention and Health Promotion completed research to understand factors that could encourage Americans to follow the Physical Activity Guidelines for Americans, second edition, released in 2018. This study describes survey research assessing demographic characteristics that might be related to knowledge and awareness of the guidelines. **Methods:** An online survey of 2050 adult physical activity contemplators assessed knowledge of physical activity, awareness of the guidelines, and knowledge of dosage recommendations. Univariate and bivariate analyses were performed, and demographic differences in knowledge and awareness were analyzed using Pearson chi-square tests and Fisher exact tests. **Results:** Respondents had medium to high knowledge of physical activity, although knowledge varied significantly by socioeconomic factors. Knowledge of dosage recommendations was very low, with 2% and 3% of respondents correctly identifying recommended moderate- and vigorous-intensity doses, respectively. Only 22% were aware of the guidelines; awareness was greater among those with a higher education or income and those without a disability. **Conclusions:** These findings guided the development of the Office of Disease Prevention and Health Promotion's Move Your Way campaign and reinforced the need to raise awareness of the guidelines and promote behavior change among physical activity contemplators—particularly those from lower socioeconomic groups.

Keywords: exercise, national, promotion, campaign, recommendations

The Physical Activity Guidelines for Americans (the guidelines) outlines recommendations for the amount and types of physical activity necessary for good health based on the current scientific evidence. It includes specific physical activity dosages for youth and adults and additional recommendations for older adults and special populations.¹ The first edition of the guidelines was released in 2008,² and the second edition was released in November 2018.^{1,3} Although federal physical activity guidance is relatively recent, guidelines from professional organizations touting the health benefits of regular physical activity began emerging nearly 50 years ago.⁴

Despite the myriad benefits of physical activity, rates of physical inactivity remain high in the United States, with nearly 80% of adults being insufficiently active and a quarter of adults doing no leisure-time physical activity.⁵ In addition to lowering risk for all-cause mortality, coronary heart disease, type 2 diabetes, and hypertension, regular physical activity also reduces the risk of falls in older adults and positively affects brain health, bone health, weight status, cancer incidence, and physical function.¹ In addition, adults generally overestimate their physical activity levels.^{6,7} Those who overestimate are less inclined to indicate they believe that physical activity has beneficial effects, and they express less intention to increase their physical activity compared with those who are realistic about their inactivity.⁷

One potential explanation for the low rates of physical activity is lack of awareness of the guidelines and lack of knowledge of

dosage recommendations. In a 2009 survey, the percentage of adults who reported being aware of the guidelines was 36%, and knowledge of the moderate-intensity aerobic physical activity dosage recommendation (at least 150 min/wk) was less than 1%.⁸ Knowledge of dosage recommendations for youth is also low; survey data collected in 2009 indicate that only about 10% of parents were knowledgeable about the amount of activity youth need (at least 60 min of moderate to vigorous physical activity each day).⁹

In their summary of Americans' awareness and knowledge of the first edition of the Physical Activity Guidelines for Americans, Kay et al⁸ concluded that the "nation needs more effective communication strategies to translate and disseminate physical activity guidelines." Therefore, when planning for the second edition of the guidelines, the Office of Disease Prevention and Health Promotion developed a corresponding communication campaign, Move Your Way.¹⁰ This campaign is grounded in the transtheoretical model (also known as stages of change)¹¹ and aims to influence the behavior of physical activity contemplators.

This study focuses on the findings from a 2017 survey that assessed awareness of the guidelines, knowledge of the dosage recommendations, and knowledge of physical activity among American adult physical activity contemplators (ie, people who are not currently meeting the guidelines, but who are considering increasing their physical activity in the next 6 mo) as well as potential differences based on socioeconomic factors. This information was important to establish a baseline before launching the second edition of the guidelines to help assess any subsequent shift in awareness from Move Your Way campaign activities. The accompanying article, "The Move Your Way campaign: Encouraging contemplators and families to meet the recommendations from the Physical Activity Guidelines for Americans,"¹² appearing in this issue, summarizes the findings from additional research that

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shaped the development of the Move Your Way campaign's products, messaging, and strategy.

Methods

The Office of Disease Prevention and Health Promotion worked with a health education and communication firm to conduct audience research with consumers. This research informed the development of a campaign and icon that would translate recommendations from the guidelines¹ into accessible, actionable messages intended to move physical activity contemplators from the contemplation stage to preparation and action stages. This study focuses on one component of the research: an online survey of 2050 adults used to assess knowledge and awareness of the guidelines. Qualtrics (Provo, UT) fielded the survey for 3 weeks in May to June 2017 in preparation for the release of the second edition of the guidelines¹ in late 2018. The study was reviewed for compliance with the Paperwork Reduction Act and was approved by Chesapeake IRB (now Advarra) Review Board.

Recruitment and Eligibility

English-speaking adults aged 25–74 years were recruited by a Qualtrics online survey panel. Qualtrics, a market research firm, provides respondents for online surveys through an actively managed panel of members. Qualtrics recruits panel members through multiple channels, including social media, websites, and global partners. People in the pool of respondents have agreed to be contacted by market research services that seek survey respondents.

Research targeted 4 communities in states that are among those with the highest percentages of adults who report no leisure-time physical activity within the United States: Baltimore, MD; Chicago, IL; Jackson, MS; and Las Vegas, NV.¹³ Because of the lower number of respondents available in Jackson and Las Vegas, recruitment in those areas was expanded to include the entire states of Mississippi and Nevada, respectively. Only participants who were identified as physical activity contemplators (based on their answers to questions about their physical activity behavior and intention) and reported infrequent physical activity were eligible to be included in the study. Activity level was determined through screening questions that asked about frequency and duration of physical activity (eg, “How often do you get physical activity for at least 20 minutes a day?”). Participants were eligible to participate if they reported (1) infrequent physical activity and (2) the intention to increase physical activity in the next 6 months. Participant quotas were established for area (urban/suburban/rural), sex, race/ethnicity, education, income, and disability to ensure that results reflected a demographically diverse sample. Eligible participants who completed the survey received Qualtrics reward points (worth less than \$5).

Measures

Demographic Characteristics. Demographic questions provided information on respondents' geographic area (rural, urban, or suburban); age; sex; race/ethnicity; education; income level; and parental status (not a parent to an adolescent, parent to 1 adolescent, parent to 2 adolescents, or parent to 3 or more adolescents); physical activity frequency (0, 1, or 2–3 d/wk); and disability (either none or one or more physical or mental impairments).

Awareness of the Physical Activity Guidelines for Americans.

A single yes/no question was used to assess awareness of the guidelines: Have you seen, heard, or read anything about federal physical activity guidelines?

Knowledge of Physical Activity. Four questions were used to gauge knowledge of physical activity: (1) What best describes what typically happens during moderate-intensity physical activity? (response options: your heart beats about the same as usual, and you can sing while doing the activity; your heart beats somewhat faster than usual, and you can talk while doing the activity; and your heart beats much faster than usual, and you cannot say more than a few words without pausing for a breath); (2) Choose the activity below that is typically considered moderate intensity (response options: jogging, brisk walking, fast swimming, and playing competitive basketball); (3) What best describes what typically happens during vigorous-intensity physical activity? (response options: your heart beats about the same as usual, and you can sing while doing the activity; your heart beats somewhat faster than usual, and you can talk while doing the activity; and your heart beats much faster than usual, and you cannot say more than a few words without pausing for a breath); and (4) Choose the activity below that is typically considered vigorous intensity (response options: running, walking the dog, gardening, and washing the dishes).

Knowledge of Dosage Recommendations. To assess knowledge of the dosage recommendations for adults, the following questions were asked about the moderate-intensity aerobic dose, the alternative vigorous-intensity aerobic dose, and muscle-strengthening frequency: (1) What is the minimum amount of moderate-intensity physical activity the government recommends for adults to get big health benefits? (response options: 20 minutes a day, 3 or more days a week; 100 minutes spread out over a week; 30 minutes a day, 5 or more days a week; 60 minutes a day, 7 days a week; 150 minutes spread out over a week; or do not know/not sure); (2) What is the minimum amount of vigorous-intensity physical activity the government recommends for adults to get big health benefits? (response options: 15 minutes a day, 3 or more days a week; 75 minutes spread out over a week; 15 minutes a day, 5 or more days a week; 30 minutes a day, 3 or more days a week; 100 minutes spread out over a week; do not know/not sure); and (3) How many days a week of muscle-strengthening activity does the government recommend for adults to get big health benefits? (response options: at least 1 day a week, at least 2 days a week, at least 3 days a week, at least 4 days a week, and do not know/not sure).

Overall Knowledge of Physical Activity and Dosage Recommendations. For questions related to knowledge of physical activity and knowledge of dosage recommendations, correct responses were assigned a single point and incorrect responses were assigned 0 points. Points for each respondent were totaled to create an individual composite knowledge score. Composite scores ranged from 0 to 7, with a mean of 3.51 and a median of 4. Composite scores were divided into tertiles and categorized into low (0–3 points, $n = 887$); medium (4 points, $n = 928$); and high (5–7 points, $n = 235$) scores of knowledge of physical activity and dosage recommendations.

Data Analysis

Data collected through the survey were analyzed with SPSS (SPSS Statistics for Windows, Released 2015, version 23.0; IBM Corp, Armonk, NY) using univariate and bivariate statistical analyses to describe sample demographics and aggregate responses to measured constructs. Differences in the data based on demographic or categorical outcomes were analyzed using Pearson chi-square tests and Fisher exact tests when appropriate. Awareness of the guidelines (aware and not aware) and the composite knowledge

categories (low, medium, and high) were compared across parental status, education, income level, and disability status.

Results

Survey data from 2050 participants across 4 geographic locations were analyzed as described in the “Methods” section. Although attempts were made to gather approximately 500 participants from each location, response rates were lowest in Mississippi. Full descriptive characteristics are presented in Table 1. There was a range of ages represented but limited diversity in race/ethnicity and gender. A majority of the respondents were female, were educated beyond a high school level, and did not have a child of adolescent age.

While individuals who indicate that they get at least 30 minutes of physical activity on at least 4 days a week were excluded from the study, 70% of the respondents reported doing physical activity 2 to 3 days per week.

Awareness of the Physical Activity Guidelines for Americans

Only 22% of participants indicated that they were aware of government physical activity guidelines. Overall, parents, individuals with a higher level of education, individuals with a higher income, and individuals without a disability had a greater awareness of the guidelines (Table 2). A greater proportion of individuals who reported being a parent of an adolescent were aware of the guidelines than those who were not a parent of an adolescent (27% vs 21%; $\chi^2 = 6.852$, $P = .01$). About 28% of participants with an education level of 4 years of college or more reported being aware of the guidelines compared with 17% of those with a high school education or less ($\chi^2 = 42.727$, $P < .001$). Participants with greater household income were more likely to report being aware of the guidelines. For example, 33% of respondents reporting a household income of \$150,000 or more were aware of the guidelines compared with 16% of those reporting a household income of less than \$20,000 ($\chi^2 = 25.963$, $P < .001$). Of the 254 participants who reported any disability, 84% were not aware of the guidelines. Compared with individuals without a disability, a significantly smaller proportion of participants who reported a disability were aware of the guidelines (16% vs 23%; $\chi^2 = 4.963$, $P = .03$).

Knowledge of Physical Activity

On a positive note, respondents could correctly select a description of moderate- and vigorous-intensity physical activity (82% for both) and were able to correctly choose the type of activity that is considered moderate intensity (70%) or vigorous intensity (95%).

Knowledge of Dosage Recommendations

Knowledge was very low for physical activity dosage recommendations (Table 3). For the moderate-intensity aerobic dosage, only 2% of respondents correctly chose “150 minutes spread out over a week.” However, a third of the respondents chose “30 minutes a day, 5 or more days a week,” suggesting that there is some understanding of the recommendation in terms of total time. The same trend in responses was evident with the alternate dosage of vigorous-intensity aerobic activity; 3% correctly identified the time of 75 minutes, whereas 26% underestimated the amount by

selecting 15 minutes a day, 3 days a week. Only 18% correctly identified the muscle-strengthening physical activity recommendation of 2 or more days a week, whereas 32% of respondents overestimated the recommended amount, choosing at least 3 days a week. An at a glance summary of results related to knowledge of the dosage recommendations is provided in Table 4.

Overall Knowledge of Physical Activity and Dosage Recommendations

Overall, respondents had medium to high knowledge of physical activity and dosage recommendations (Table 5), as indicated with a composite score of 4 or higher. Knowledge levels varied significantly by socioeconomic factors (Table 5). Nearly half or more of each racial/ethnic minority group had a low level of knowledge compared with 39% of white respondents ($\chi^2 = 64.483$, $P < .001$). Over half of respondents with an education level of high school or less had a low level of knowledge compared with 40% of respondents with 4 years of college or more. Only 9% of respondents with an education level of high school or less had a high level of knowledge compared with 13% of respondents with 4 years of college or more ($\chi^2 = 23.423$, $P = .001$). Participants with a greater household income reported higher levels of knowledge. For example, 15% of respondents reporting a household income of \$150,000 or more had a high level of knowledge compared with 7% of those reporting a household income of less than \$20,000. Similarly, 54% of respondents reporting a household income of less than \$20,000 had a low level of knowledge compared with 34% of those with a household income of \$150,000 or more ($\chi^2 = 42.606$, $P < .001$). Participants with no reported disability had higher levels of knowledge than those who reported having a disability. For example, 12% of respondents who did not report a disability had a high level of knowledge compared with 7% of those who reported a disability. Conversely, a greater proportion of those who reported a disability had a low level of knowledge than their counterparts with no reported disability (49% vs 42%) ($\chi^2 = 7.370$, $P = .03$).

Discussion

The survey gathered information on the following research questions about contemplators: (1) What is the level of physical activity knowledge? (2) What is the level of awareness of the Physical Activity Guidelines for Americans? and (3) What is the level of knowledge about physical activity dosage recommendations from the guidelines? In addition, this survey explored how socioeconomic factors are related to differences in overall knowledge of physical activity and dosage recommendations. Overall, the findings, while somewhat disappointing from a public health perspective, provided a valuable foundation to guide development of the Move Your Way campaign. They further reinforced the need for a comprehensive communication campaign to help raise awareness of the guidelines and promote behavior change, especially for socioeconomic groups that had even lower knowledge and awareness compared with other groups.

Awareness of the Physical Activity Guidelines for Americans

Awareness of federal recommendations for physical activity appears to be decreasing. In a previous study conducted in 2009, 36% of respondents reported being aware of federal recommendations

Table 1 Demographic Characteristics Summary (N = 2050)^a

	n	%
Location		
Baltimore	560	27
Chicago	600	29
Mississippi	345	17
Nevada	545	27
Area		
Urban	634	31
Suburban	1142	56
Rural	274	13
Age, y		
25–34	539	26
35–44	451	22
45–54	351	17
55–64	389	19
65–74	320	16
Sex		
Male	600	29
Female	1450	71
Race/ethnicity		
White	1518	74
Hispanic/Latino	126	6
Black/African American	262	13
American Indian/Alaska Native	11	1
Asian/Pacific Islander	66	3
Multiracial or other	67	3
Education		
High school or less	300	15
Some college	478	23
Associate degree	266	13
4-y college or more	1006	49
Income		
<\$20,000	217	11
\$20,000–\$34,999	258	13
\$35,000–\$49,999	303	15
\$50,000–\$74,999	467	23
\$75,000–\$99,999	332	16
\$100,000–\$149,999	304	15
\$150,000–\$199,999	94	5
\$200,000 or more	75	4
Parent status		
Not a parent to an adolescent	1672	82
1 adolescent	247	12
2 adolescents	96	5
3 or more adolescents	35	2
Physical activity frequency, d/wk		
0	99	5
1	515	25
2–3	1436	70

(continued)

Table 1 (continued)

	n	%
Disability		
One or more disabilities or impairments (hearing, vision, decision making, and physical)	254	12
No disability	1796	88

^aPercentages have been rounded and may not sum to 100.**Table 2 Differences in Awareness of Physical Activity Guidelines for Americans (N = 2050)**

Variable	Aware (n = 450)		Not aware (n = 1600)		χ^2	P value
	n	%	n	%		
Parent status						
Yes	102	27.0	276	73.0	6.852	.01
No	348	20.8	1324	79.2		
Education						
High school or less	50	16.7	250	83.3	42.727	<.001
Some college	70	14.6	408	85.4		
Associate degree	49	18.4	217	81.6		
4-y college or more	281	27.9	725	72.1		
Income						
<\$20,000	35	16.1	182	83.9	25.963	<.001
\$20,000–\$34,999	48	18.6	210	81.4		
\$35,000–\$49,999	60	19.8	243	80.2		
\$50,000–\$74,999	88	18.8	379	81.2		
\$75,000–\$99,999	86	25.9	246	74.1		
\$100,000–\$149,999	78	25.7	226	74.3		
\$150,000 or more	55	32.5	114	67.5		
Disability						
Any reported disability	42	16.5	212	83.5	4.963	.03
No reported disability	408	22.7	1388	77.3		

for physical activity.⁸ In contrast, only 22% of participants in this survey were aware of federal physical activity recommendations. Because the first edition of the Physical Activity Guidelines for Americans was released in 2008, the higher awareness captured in the 2009 study may be due in part to peak communication and dissemination efforts during that time. A promotional campaign, Be Active Your Way, was developed and disseminated with the first edition of the guidelines²; however, it was a small-scale campaign and mainly focused on the initial year after the guidelines was released.¹⁴ In addition, our study excluded individuals already meeting the guidelines, suggesting that awareness may be lower in those who most need to know about the guidelines to help inform lifestyle choices.

Knowledge of Dosage Recommendations

Knowledge of the specific aerobic physical activity dosage necessary for health benefits remains low. This study noted that only 2% of participants correctly selected “150 minutes spread out over

Table 3 Knowledge of Physical Activity and Dosage Recommendations, Item by Item (N = 2050)

Variables	n	%
Item 1—Moderate-intensity physical activity definition		
Correct	1673	81.6
Incorrect	377	18.4
Item 2—Identify moderate-intensity physical activity		
Correct	1429	69.7
Incorrect	621	30.3
Item 3—Moderate-intensity physical activity guideline		
Correct	34	1.7
Incorrect	2016	98.3
Item 4—Vigorous-intensity physical activity definition		
Correct	1676	81.8
Incorrect	374	18.2
Item 5—Identify vigorous-intensity physical activity		
Correct	1953	95.3
Incorrect	97	4.7
Item 6—Vigorous-intensity physical activity guideline		
Correct	60	2.9
Incorrect	1990	97.1
Item 7—Muscle-strengthening physical activity guideline		
Correct	363	17.7
Incorrect	1687	82.3

a week,” which is similar to findings from Kay et al⁸ of 0.56%. Interestingly, more contemplators seem to understand the moderate-intensity aerobic physical activity dosage recommendation from the guidelines in terms of days per week (ie, 30 minutes a day, 5 or more days a week) than in terms of total time (ie, 150 minutes a week). In this study, 34% selected “30 minutes a day, 5 or more days a week,” which is consistent with the findings from Kay et al,⁸ who documented that 33.3% chose the same response. Perhaps this is because of earlier physical activity recommendations that emphasized a daily time allotment, with

30 minutes being more memorable than 150 minutes. The 1995 American College of Sports Medicine/Centers for Disease Control and Prevention physical activity recommendations suggested that “every US adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week.”³ And several other studies have documented an awareness of 30 minutes per day, 5 days per week.^{15–17} In addition, both in this survey and Kay et al’s⁸ survey, approximately 25% of respondents indicated that they did not know or were not aware of the recommended amount of physical activity. Thirty minutes of activity, 5 days a week is equivalent to 150 minutes a week, so technically, the response selected by a third of participants is one way to meet the guidelines but is not the specific adult dosage guideline. The 2018 Physical Activity Guidelines Advisory Committee clearly confirmed the 2008 Physical Activity Guidelines for Americans² in its Scientific Report,¹⁸ which recommended a weekly target rather than a daily amount. This recommendation was incorporated into the second edition of the guidelines,¹ which recommends a target weekly range rather than a daily amount. The recommendation for a weekly accumulation of physical activity is based on the current scientific evidence,¹⁸ which suggests benefits can be accrued in a variety of ways. Ideally, physical activity is spread throughout the week,¹ but benefits can also come to those who concentrate physical activity across just a few days, often described as “weekend warriors.”¹⁹

Overall Knowledge of Physical Activity and Dosage Recommendations

Prior research has shown that individuals meeting the physical activity recommendations are more likely to be knowledgeable about them.^{15,20} This study focused only on contemplators—as those who reported getting regular physical activity were excluded, the focus was on those that would potentially benefit most from targeted messages that support and encourage them to meet the guidelines. Only 12% of participants had a high score for knowledge of physical activity and dosage recommendations, quantified as correctly answering 5 to 7 questions. The remaining participants were split between low scores (correctly answering

Table 4 Knowledge of the Dosage Recommendations at a Glance (N = 2050)

Moderate-intensity physical activity
2% correctly identified the moderate-intensity physical activity recommendation (150 min spread out over a week).
34% selected “30 minutes a day, 5 or more days a week.”
35% selected “20 minutes a day, 3 or more days a week.”
24% did not know or were not sure.
Vigorous-intensity physical activity
3% correctly identified the vigorous-intensity physical activity recommendation (75 minutes spread out over a week).
26% selected “15 minutes a day, 3 or more days a week.”
39% did not know or were not sure.
Muscle-strengthening physical activity
18% correctly identified the muscle-strengthening physical activity recommendation (2 or more days per week).
32% overestimated the recommended amount, choosing 3 d/wk.
41% did not know or were not sure.

Table 5 Levels of Knowledge of Physical Activity and Dosage Recommendations by Demographic Variables of Interest, Row Percentages (N = 2050)

Variable	n						%	
Composite categorical (3 levels)								
Low (scores 0–3)	887						43.3	
Medium (score 4)	928						45.3	
High (scores 5–7)	235						11.5	

Variables	Low		Medium		High		χ^2	P value
	n	%	n	%	n	%		
Race/ethnicity								
White	587	38.7	740	48.7	191	12.6	64.483	<.001
Hispanic/Latino	83	65.9	36	28.6	7	5.6		
Black/African American	136	51.9	97	37.0	29	11.1		
American Indian/Alaska Native	7	63.6	3	27.3	1	9.1		
Asian/Pacific Islander	42	63.6	23	34.8	1	1.5		
Multiracial or other	32	47.8	29	43.3	6	9.0		
Education								
High school or less	155	51.7	118	39.3	27	9.0	23.423	.001
Some college	204	42.7	232	48.5	42	8.8		
Associate degree	129	48.5	105	39.5	32	12.0		
4-y college or more	399	39.7	473	47.0	134	13.3		
Income								
<\$20,000	118	54.4	85	39.2	14	6.5	42.606	<.001
\$20,000–\$34,999	138	53.5	95	36.8	25	9.7		
\$35,000–\$49,999	140	46.2	129	42.6	34	11.2		
\$50,000–\$74,999	196	42.0	212	45.4	59	12.6		
\$75,000–\$99,999	128	38.6	168	50.6	36	10.8		
\$100,000–\$149,999	110	36.2	152	50.0	42	13.8		
\$150,000 or more	57	33.7	87	51.5	25	14.8		
Disability								
Any reported disability	125	49.2	111	43.7	18	7.1	7.370	.03
No reported disability	762	42.4	817	45.5	217	12.1		

0–3 questions) and medium scores (correctly answering 4 questions).

Socioeconomic Factors, Overall Knowledge of Physical Activity and Dosage, and Awareness of the Physical Activity Guidelines for Americans

Currently, less than 25% (24.3%) of adults meet the aerobic and muscle-strengthening physical activity recommendations.²¹ However, there are disparities across age, gender, race, education level, disability, and income.²¹ Many factors influence how active an individual is and how motivated he or she is to become more active. One contributing factor is knowledge or awareness of the benefits of regular physical activity.^{15,20} Individuals of racial/ethnic minorities, individuals with less than a high school education, those with a lower household income, and those with a disability had lower overall knowledge of physical activity and dosage recommendations than white respondents, individuals with 4 years of college or more, those with a household income over \$150,000, and those without a disability, respectively. The same pattern was true for awareness of the guidelines—individuals with

less than a high school education, those with a lower household income, and those with a disability were less likely to be aware of the guidelines than individuals with 4 years of college or more, those with a household income over \$150,000, and those without a disability, respectively.

Previous findings suggest that socioeconomic status^{22–24} and racial/ethnic factors^{22,25} play a role in physical activity levels. Demographics also impact knowledge of physical activity.^{17,26} Health disparities for racial/ethnic minority groups may be explained by physical activity level alone.²² Higher level of education,²⁴ better health status,²⁷ and higher socioeconomic status have all been associated with higher physical activity levels. In addition, people from racial/ethnic minority groups as well as those with limited formal education are often less aware of the health benefits of physical activity than are people from nonminority groups and people with more education.²³

Health promotion campaigns, especially those based in theory, have been shown to be effective interventions for behavior change.^{18,28,29} Therefore, physical activity communication campaigns that consider socioeconomic factors could help address disparities in levels of knowledge about physical activity to

improve physical activity behavior. Most physical activity–focused campaigns have not targeted specific demographic groups.²⁹ More research is necessary to determine whether addressing knowledge disparities could reduce disparities in levels of physical activity.

Limitations

Survey data were collected from physical activity contemplators aged 25–74 years in 4 diverse geographic locations across the United States. Results are neither generalizable to the larger population, nor do they include a nationally representative sample. In contrast, the HealthStyles survey used by Kay et al⁸ in 2009 was sent to adults aged 18 years and older and was poststratified and weighted to create a nationally representative sample.³⁰ Participants for this survey were recruited through a Qualtrics online panel, suggesting that they are more likely to be computer and web literate. People with lower incomes and lower education levels tend to be underrepresented among Internet users.³¹

Conclusions

This study was unique in that it focused only on physical activity contemplators and examined how socioeconomic factors may be related to overall knowledge of physical activity and dosage and awareness of the guidelines. The Office of Disease Prevention and Health Promotion completed the research summarized here to inform the Move Your Way campaign, which was developed to promote the recommendations from the second edition of the Physical Activity Guidelines for Americans. As discussed, the 30 minutes a day recommendation appears to be more memorable than a weekly target. This point was considered extensively during development of the Move Your Way campaign, as was how best to deliver the key guidelines for specific populations. Given feedback from this survey and focus groups conducted to inform the Move Your Way campaign, messages that deemphasize the target of 150 minutes and instead focus on simple ways to incorporate more physical activity into daily life may be more effective.

This survey confirmed a strong need for more effective communication strategies to translate and disseminate physical activity guidance, an important finding for those whose work relates to physical activity–related campaigns, interventions, communications, or education. These findings also suggest that physical activity communication campaigns that consider socioeconomic factors could help address disparities in levels of knowledge about physical activity to improve physical activity behavior. Researchers may be interested in further studying the relationship between knowledge disparities and disparities in a health promoting behavior, such as physical activity.

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