



Initial mass media coverage of the 2nd edition of the physical activity guidelines for Americans

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ARTICLE INFO

Keywords:

Physical activity, United States, guidelines

Older adults

Youth: disabilities

ABSTRACT

The 2nd edition of the Physical Activity Guidelines for Americans was released in November of 2018. This document contained specific guidelines for young children, children and adolescents, adults, older adults, pregnant and postpartum women, and adults living with chronic conditions and disabilities as well as safety recommendations. Given the complexity of the recommendations, the aim of this study was to assess which of the guidelines were covered by both print and broadcast media in the three months following the release of the guidelines. LexisNexis was searched for print media as well as transcripts of broadcast media. YouTube was used to search for broadcast television news stories. All retrieved stories ($n = 34$) were coded independently by two raters on which of the elements of the guidelines were covered. On average, stories covered less than half of the guidelines. Most stories reported aerobic guidelines for adults, children and adolescents and young children. Muscle strengthening and vigorous exercise were covered less frequently. No stories mentioned guidelines for pregnant or postpartum women or adults with disabilities. Print ($M = 6.4$, $sd = 2.7$) covered more recommendations than broadcast media ($M = 4.0$, $sd = 1.9$, $p < .01$). Coordinated national efforts are needed to ensure that Americans are aware of the new and complete guidelines.

1. Introduction

Regular physical activity is important for reducing the risk of heart disease, diabetes, cancer, depression, and anxiety while promoting better sleep, executive function and improving the quality of life (U. S. Department of Health and Human Services, Physical Activity Guidelines Advisory Committee, 2018). Despite the clear benefits of physical activity most Americans do not get the recommended amount. Among adults ages 18–64, only 22.9% met both the physical activity guidelines for moderate to vigorous physical activity and strength training in the past month (Blackwell and Clarke, 2018). Between 1999 and 2006 only 16.3% of adolescents ages 12–17 met both the aerobic and muscle strengthening recommendations, with about half meeting neither of them (Song et al., 2013).

The 1st edition of the U.S. Physical Activity Guidelines for Americans was released in 2008 (U.S. Department of Health and Human Services, Centers for Disease Control, 2008). This document provided the first formal federal guidelines, and for adults, recommended 150 min a week of moderate intensity or 75 min a week of

vigorous aerobic physical activity performed in at least 10 min bouts and ideally spread throughout the week. It also recommended two days of muscle-strengthening activity a week. For children and adolescents, it recommended 60 or more minutes of moderate or vigorous aerobic physical activity at least 3 days a week as well as muscle and bone strengthening activity on three days a week as part of the 60 min. Specific guidelines were also provided for older adults, pregnant and postpartum women, adults with disabilities and chronic medical conditions, and for safe physical activity (U.S. Department of Health and Human Services, Centers for Disease Control, 2008).

A nationwide study conducted in 2009, found that 36% of American adults were aware that U.S. guidelines had been released in the past year but less than 1% knew the recommendation for adults was 150 min of moderate physical activity spread throughout the week (Kay et al., 2014). Less than 10% of parents were aware of the 60 min-a-day guidelines for children and adolescents (DeBastiani et al., 2014). The process for developing guidelines is well established, however, the process for communicating these guidelines is less clear (Trembley and Haskell, 2011).

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On November 12, 2018, the 2nd Edition of the Physical Activity Guidelines for Americans was released (U. S. Department of Health and Human Services, 2018). The document updated the guidelines by providing additional benefits of physical activity and including the risks of sedentary behavior. Most notably, new guidelines were added for young children ages 3–5, and the 10-min bout requirement was eliminated. The document lists 24 different bulleted guidelines for physical activity.

Although social media use has increased dramatically in recent years, most adults still get their news from television (57%), radio (25%) and newspapers (20%; Pew Research Center, 2016). This is particularly true for adults ages 50–64 (72% television) and 65+ (85% television; Research Center, 2016). Given the low level of knowledge of Americans around the 2008 Guidelines, this study examined which guidelines were covered by mass media in reporting the 2nd edition of the Physical Activity Guidelines for Americans and if there were systematic differences between print and broadcast media.

2. Materials and methods

Given the differences in format and in indexing, the samples of broadcast news and print media were obtained separately.

3. Print media sample

LexisNexis Academic was used to obtain a sample of print media stories. For this study, print was defined as text-based and included both hard copy and digital print. Search terms included “physical activity guidelines” and “exercise guidelines.” The search parameters were set between November 12, 2018 and February 28, 2019 and included newspapers, web-based publications, magazines and journals, news transcripts and aggregated news sources. Inclusion criteria included print media published in the U.S. in English and required that the story was focused on the recommendations from the 2nd Edition of the Physical Activity Guidelines for Americans. For example, stories focused on a research study to increase physical activity that mention the guidelines, but were not about them, were excluded. Title and abstracts were reviewed for all stories, and those that were retained met criteria. Full text was then retrieved and reviewed by two experienced coders for inclusion. For any stories where there was a discrepancy between the coders, the full text was reviewed simultaneously and the coders came to consensus on inclusion or exclusion of the story. This method also captures the transcripts of some national radio and television broadcasts. In these cases, the story was added to the broadcast news sample.

4. Broadcast news sample

For broadcast news, YouTube (www.youtube.com) was chosen as the most comprehensive source of broadcast news since most local and national news sources have a YouTube channel (Pew Research Center, 2014). YouTube was searched using the terms “physical activity guidelines” and “exercise guidelines.” The search parameters were set between November 12, 2018 and February 28, 2019 and included television broadcast news stories. Inclusion criteria included stories aired in the United States in English and required that the story was focused on the recommendations from the 2nd Edition of the Physical Activity Guidelines for Americans. The top 100 viewed stories per search term were reviewed following methods from previous studies (Basch et al., 2019; Yin et al., 2018). All of the stories were watched separately by the two coders, and if there were discrepancies between the coders, the story was viewed simultaneously, and the coders came to consensus on inclusion or exclusion of the story.

5. Coding the stories

Two independent coders reviewed each of the stories either by reading the full text news story or watching the television news story. A standardized coding sheet was used that captured: the source of the story; newspaper, television, magazine or radio; date printed or aired; length or number of words; and which recommendations were covered. Since there were so many recommendations and they were unlikely to be mentioned, they were collapsed into 13 separate recommendations: 1. 3–5-year-old children should be active throughout the day (3 h a day); 2. Caregivers of young children should encourage active play; 3. Children and adolescents should get 60 min or more of aerobic activity at least 3 days a week; 4. Children and adolescents should do muscle or bone strengthening activity as part of their 60 min at least 3 days a week. 5. Adults should move more and sit less; 6. Adults should get at least 150 min of moderate intensity physical activity a week; 7. Adults should get at least 75 min of vigorous intensity physical activity a week. 8. Adults should do muscle strengthening activities at least two days a week; 9. Any physical activity counts/it does not need to be done in 10-min bouts; 10–12. Any mention of physical activity guidelines for older adults, pregnant and postpartum women or people with chronic disease and disabilities; 13. Any mention of safe physical activity. Additionally, the coders noted if young children, children and adolescents or adults were mentioned but no specific recommendation was given. After the coders had completed coding the stories, they met and reviewed any discrepancies. Interrater reliability exceeded 90% overall. For any discrepancies, the full text or television story was read/watched again by both reviewers simultaneously until all coding decisions were agreed upon.

5.1. Data analysis

Descriptive analysis was used to assess the reporting results. The percentage of times that each of the recommendations was assessed was calculated along with identifying factors of the news story. A sum of how many recommendations were covered by each story was created. Correlation coefficients were used to calculate the relationship between the number of recommendations covered and continuous variables. T-test analyses were used to assess differences in how often each of the recommendations was covered.

6. Results

6.1. Print media

The initial search yielded 36 stories including two television and one radio transcript. The television and radio transcripts were removed from the print media sample and analyzed with the broadcast media sample. The remaining 33 stories were reviewed to assess which guidelines they addressed. This included 32 newspaper stories and one magazine story. Thirteen stories did not directly address the guidelines and were removed. A story written by the Associated Press was published in seven of the newspapers. These were counted only once. This yielded a final sample of 13 newspaper stories. Of these, three were from national markets, five from large markets (i.e. New York City, Miami), and five from medium and small markets (i.e. Richmond, VA, Worcester, MA, Marin, CA). The AP story was republished in medium and small markets (i.e. Lowell, MA, Spokane, WA, Providence, RI). A flow diagram of study selection is included in Fig. 1. The stories were all published between 11/12/18 and 11/26/18. The word count ranged from 268 to 1140 with a median count of 605 words. All but one story reported the 150 min a week recommendation for adults. Move more and sit less and muscle strengthening were covered about three-fourths of the time (76.9%) while the removal of ten-minute bouts was covered less often (61.5%). For children and adolescents, the 60-min recommendation was covered in most stories (84.6%) more often than the

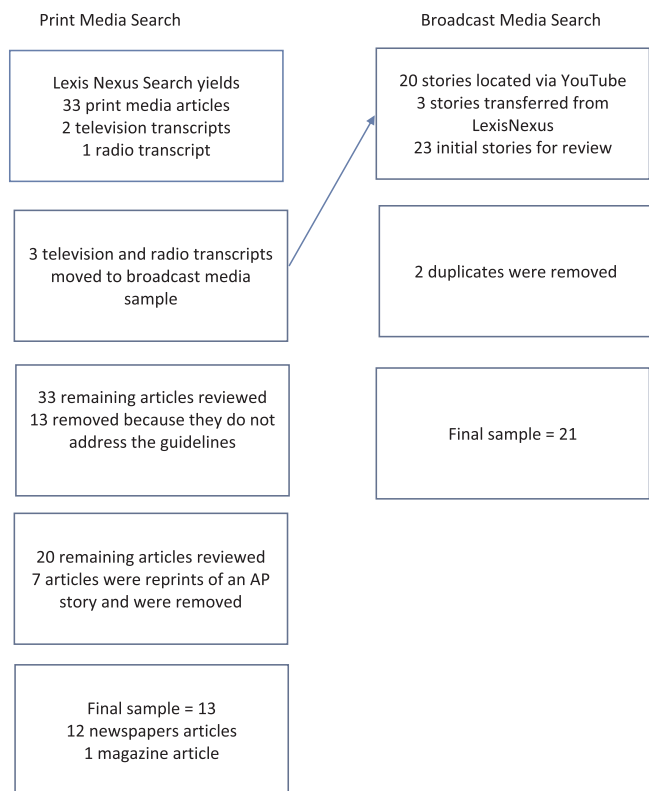


Fig. 1. Flow diagram of study selection.

muscle or bone strengthening recommendations (38.5%). Recommendations for young children were covered in about half of the stories (53.3%), while caregivers promoting active play was rarely mentioned (15.4%). Among special populations, older adults were mentioned most often (53.8%), followed by pregnant and postpartum women (30.7%). Safety and recommendations for people with disabilities or chronic disease were only mentioned in one story. No stories mentioned physical activity for people with disabilities. There was a non-significant trend between the number of words and the number of recommendations covered ($r = 0.50, p = .056$). See Table 1 for complete results.

7. Broadcast media

Twenty television news stories were retrieved for the YouTube results and three stories transferred from the LexisNexus search. Two stories were duplicate leaving a final sample size of 21. Of these 21 stories, 5 represented national markets and 16 in local markets for large (i.e. Seattle, Chicago, Atlanta, New York) and medium sized (i.e. Sioux City, Tucson, Terre Haute) US cities. The stories aired between 11/12/18 and 02/01/19 with 19 airing between 11/12/19 and 11/14/18. Stories ranged in length from 28 to 215 s with a median of 94 s. The new recommendations for young children to be active throughout the day and the removal of the ten-minute bouts and the 150 min of moderate activity per week were mentioned the most frequently (73.6% for all). However, vigorous activity was only mentioned once. Caregivers encouraging active play was mentioned in about a quarter (23.8%) of the stories. Muscle strengthening for adults (23.8%) and muscle and bone strengthening for children and adolescents (9.5%) were rarely covered. Only three stories mentioned older adults, and two mentioned safety issues. No stories mentioned guidelines for pregnant or postpartum women or adults with disabilities or chronic conditions. There was a significant relationship between the length of the story and the number of recommendations covered ($r = 0.61, p < .01$). Complete results can be found in Table 2.

8. Differences between print and broadcast coverage

Print media ($M = 6.4, sd = 2.66$) covered significantly more recommendations than broadcast media ($M = 4.0, sd = 1.9; t(32) = 2.99, p < .01$). Specifically, print media reported muscle and bone strengthening for children and adolescents, vigorous activity for adults, muscle strengthening for adults, older adults, and pregnant and postpartum women more often than broadcast media.

9. Discussion

National physical activity recommendations are an important tool to communicate the importance and need for physical activity. Yet, results a year after the release of the 1st edition of the guidelines showed a low level of knowledge among the adult population (Kay et al., 2014; DeBastiani et al., 2014). Throughout the world, physical activity plans and guidelines have been developed, however less emphasis has been put in place on enacting these plans (Dale et al., 2016; WHO, 2018). The major recommendations for the 2018 Guidelines were covered in most media sources that we assessed. Across the 34 stories, the 150 min a week recommendation for adults (82.4%), the removal of 10-min bout requirements (70.6%), and children (55.9%) and young children (67.6%) recommendations were reported in most news sources. The high level of coverage of the removal of the 10-min bouts is important as this may have been a barrier for many people in meeting the guidelines. For example, the federal government’s Move Your Way campaign emphasized committing to only five minutes of physical activity rather than not moving (USDHHS, 2020). Vigorous physical activity (20.6%) and muscle strengthening (44.1%) were included less often. This is a concern since while about half of American adults meet the aerobic activity guidelines, less than one fourth meet both aerobic and strength training guidelines (The National Center for Health Statistics, 2018). Special populations including older adults (29.4%), pregnant and postpartum women (11.7%), and adults with chronic conditions (2.9%) were covered very infrequently. Since these groups tend to be less active, this oversight could exacerbate health disparities (Macera et al., 2017; Bacchi et al., 2016). None of the stories mentioned the recommendations for adults with disabilities or chronic conditions. This is very concerning given that the Surgeon General’s Call to Action to Promote Walking and Walkable Communities identified people with disabilities as a priority community (USDHHS, 2015). More than 10% of American adults report having a disability and are twice as likely than other adults to be physically inactive and are at greater risk for serious heart disease (Centers for Disease Control and Prevention, 2017; Rimmer et al., 2012). Safety issues (8.8%) were also rarely discussed.

The way Americans get their news is changing and may affect these channels in the future. Although most Americans still get their news through traditional media, this trend is shifting. This study did include electronic print media including web stories and other on-line sources for media. These media sources are often posted or retweeted and appear in Facebook and Twitter feeds. However, future studies should examine if there are other ways of dissemination of health guidelines.

Outside of news media, there are limited channels for educating the population on health guidelines. Although the National Physical Activity Plan recommends a national coordinated campaign on physical activity this had not occurred (National Physical Activity Plan, 2016). Physicians represent another important pathway to informing the public about the guidelines (Sallis, 2009). However, only about 70% of Americans have visited their physicians in the past year (Centers for Disease Control and Prevention, 2018). Less than half of primary care providers report providing specific guidance to their patients on physical activity (Smith et al., 2011). Even among physical activity and public health practitioners, the guidelines are not universally known. A study of members of the National Society of Physical Activity Practitioners in Public Health found that in 2011, only 79% knew there was a

Table 1
Print news reporting of physical activity guidelines (n = 13).

Location	Date published	Word count	3–5 yr olds active day	3–5 yr olds caregivers	6–17 yr olds 60 min	6–17 yr olds muscle or bone	6–17 yr olds Move more sit less	Adults 150 min mod	Adults 75 min vigorous	Muscle strength	No 10 min /everything counts	Older adults	Safety/ chronic disease	Pregnant/ post-partum	Number of recommendations covered
Durham, NC	11/27/18	465	x		x	x	x	x		x	x				7
Marrin, CA	11/26/18	617		x	x		x	x	x	x		x		x	7
New York, NY	11/14/18	911	x		x		x	x	x	x	x	x			7
Philadelphia, PA	11/26/18	605	x	x	x	x									4
Pittsburgh	11/17/18	317	a				x				x				3
Richmond, VA	11/13/18	268	a		x										2
Tuscaloosa, AL	11/15/18	544	x		a		x	x	x	x		x		x	7
Washington, DC	11/13/18	704	x		x	x	x	x	x	x	x	x	Chronic Disease only	x	11
Worcester, MA	11/13/18	1,140													
National – AP ^b	11/12/18	572	x	x	x	x	x	x	x	x	x	x			6
National ^c	11/13/18	587			x		x	x	x	x	x	x			10
National	11/13/18	618	a		x	x	x	x	x	x	x	x			4
National	11/20/18	992	x		x	x	x	x	x	x	x	x	Safety only	x	6
			7	2	10	5	10	12	6	10	8	7	1	4	9
			53.8%	15.4%	76.9%	38.5%	76.9%	92.3%	46.2%	76.9%	61.5%	53.8%	7.7% each	30.8%	

a – Report mentions that this age group is included but no specific recommendations are given.

b – AP story was republished by newspapers in Lowell, MA, East Bay, CA, Dubuque, IA, Spokane, WA, Providence, RI, Charleston, WV.

c – Magazine story

Table 2
Broadcast news reporting of physical activity guidelines (n = 21).

Location	Date Aired	Running time	3-5 yr olds active day	3-5 yr old Caregivers	6-17 yr olds 60 min	6-17 yr olds muscle or Bone	Adults move more sit less	Adults 150 min moderate	Adults 75 min vigorous	Muscle strength	No 10 min /everything counts	Older adults	Safety	Number of recommendations covered
Atlanta, GA	11/13/18	3:22	x		x		x	x		x	x	x		7
Baltimore, MD	11/12/18	0:49		x			x				x			3
Boston, MA	11/12/18	0:46	x	x			x				x			4
Chicago, IL	11/14/18	0:39	x				x				x			3
Columbia, MO	11/14/18	1:10	a		a		x				x			2
Detroit, MI	11/12/18	2:33	x				x	x		x	x	x	x	7
Detroit, MI	11/12/18	1:43	x		x		x	x		x	x	x		8
Miami, FL	11/13/18	1:34					x				x			2
New York, NY	11/12/18	0:28	x					x			x			3
Omaha, NE	11/12/18	1:59	x		x									2
Philadelphia, PA	11/17/18	1:29	x		x		x	x		x	x			5
Salt Lake City, UT	11/12/18	1:03	x		x			x						3
Seattle, WA	02/01/19	1:45	x					x			x			3
Sioux City, IA	11/13/18	1:03	x		x			x		x				4
Terre Haute, IN	11/13/18	1:38	x		x									3
Tucson, AZ	11/13/18	2:13			a		x	x		x	x		x	4
National ^b	11/12/18	558 words	x		x		x	x		x	x			6
National ^c	11/12/18	445 words					x	x						2
National	11/12/18	3:35	x		x		x	x		x	x			7
National	11/12/18	1:19	x					x			x			4
National	11/12/18	1:58	x					x			x			3
			16 76.2%	5 23.8%	9 42.9%	2 9.5%	10 47.6%	16 76.2%	1 4.8%	5 23.8%	16 76.2%	3 14.3%	2 9.5%	

a – Report mentions that this age group is included but no specific recommendations are given.
 b – Transcript of television broadcast identified in LexisNexis search.
 c – Transcript of radio broadcast identified in LexisNexis search.

National Physical Activity Plan and 56.7% had ever used it in their work (Evenson et al., 2013). This leaves the media as one of the few channels to educate a large percentage of the US population on the physical activity guidelines. Both National Plans and Guidelines should have well thought out dissemination plans as part of their release to include multiple audiences—not just mass media channels but also physicians, public health practitioners and physical activity professionals (National Physical Activity Plan, 2016; UK Chief Medical Officers, 2019; WHO Western Pacific Region, 2006).

The study has several limitations. First, this is a study of which guidelines were covered in media stories, not how many news outlets covered the guidelines. This study did not include mass media coverage that was not posted on YouTube or indexed in LexisNexis. Therefore, we can only address the content of the stories that were in our sample. Our sample did include several stories that aired or were printed in major markets and did include sources with large readership/viewership. These include: CBS This Morning, USA Today, NPR, CNN, the New York Times and other media markets, so coverage did reach a large percentage of Americans. The AP story which was picked up in several news outlets and potentially in many more was one of the most comprehensive covering 10 of the 13 guidelines. Another limitation is that we started collecting data for this study several months after the guidelines had been released. Future studies examining the media coverage of guidelines should be conducted in real time with sampling frames to capture smaller media outlets that do not get posted in LexisNexis or YouTube.

The findings indicate that the major recommendations of the guidelines were covered by the stories in our sample. However, special populations and safety were covered sporadically. Strategies included in the mass media section of the National Physical Activity Plan should be addressed by government and non-profit agencies to better inform the public on these recommendations (National Physical Activity Plan, 2016). For example, the Plan calls for the development of a standardized brand for promoting physical activity that is consistent with current guidelines as well as educating mass media professionals about the effects of physical activity on health and effective strategies for increasing physical activity (National Physical Activity Plan, 2016).

CRedit authorship contribution statement

Jay E. Maddock: Conceptualization, Methodology, Writing - original draft. **Debra Kellstedt:** Data curation, Validation, Writing - review & editing.

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