Physical Activity Types and Programs Recommended by Primary Care Providers Treating Adults With Arthritis, DocStyles 2018

Dana Guglielmo, MPH¹,²; Kristina A. Theis, PhD¹; Louise B. Murphy, PhD³; Michael A. Boring, MS⁴; Charles G. Helmick, MD⁴; John D. Omura, MD⁵; Erica L. Odom, DrPH¹; Lindsey M. Duca, PhD¹,⁶; Janet B. Croft, PhD¹

Accessible Version: www.cdc.gov/pcd/issues/2021/21_0194.htm

Suggested citation for this article: Guglielmo D, Theis KA, Murphy LB, Boring MA, Helmick CG, Omura JD, et al. Physical Activity Types and Programs Recommended by Primary Care Providers Treating Adults With Arthritis, DocStyles 2018. Prev Chronic Dis 2021;18:210194. DOI: https://doi.org/10.5888/pcd18.210194.

Objective

Physical activity is recommended for adults with all types of arthritis because it can reduce pain and improve physical functioning, mood, and quality of life (1,2). Professional organizations encourage health care professionals to counsel adults with arthritis on physical activity and recommend supervised programs when needed (3,4). Primary care providers (PCPs) frequently treat arthritis (5) and are instrumental in promoting physical activity. Although we previously found that 98.4% of PCPs always or sometimes recommend physical activity to adults with arthritis (6), the content of physical activity counseling may affect its effectiveness (3). Addressing patient concerns (eg, arthritis-specific physical activity barriers such as pain) warrants specific guidance and referrals to safe, supervised programs (3). To build on a previous study, we examined physical activity types and programs recommended among PCPs recommending physical activity to adults with any type of arthritis and compared distributions of characteristics of PCPs recommending programs versus PCPs unaware of them.

Methods

We analyzed cross-sectional data from 2018 Porter Novelli DocStyles (https://styles.porternovelli.com/docstyles), an online national market research survey assessing PCP attitudes, patient en-
counters, and use of medical information resources. Eligible DocStyles participants were family practitioners, internists, obstetrician/gynecologists, and nurse practitioners aged 21 or older, living and practicing in the US, practicing for at least 3 years, treating at least 10 patients weekly, and working at an individual, group, or inpatient practice. From June through August 2018, Porter Novelli invited participants by email to complete the survey from the Sermo Global Medical Panel (www.sermo.com), SurveyHealthcareGlobus (www.surveyhealthcareglobus.com), and WebMD (www.webmd.com). Target quotas (1,000 PCPs, 250 obstetricians/gynecologists, and 250 nurse practitioners) were met by inviting highly responsive participants (defined as completing >75% of any kind of survey [not only DocStyles] in which they had been invited to participate) first from among those not participating in DocStyles 2017. Of 2,582 invited persons, 1,505 completed the survey (response rate, 58.3%) and were compensated $55 to $77 based on number of questions asked. We excluded 116 PCPs not treating adults with arthritis and 23 never recommending physical activity, which resulted in an analytic sample of 1,366. Additional survey details are available elsewhere (6). Although analyses were not subject to Centers for Disease Control and Prevention’s (CDC’s) institutional review board, we followed all Council of American Survey Research Organizations guidelines, and the data set was deidentified.

The 2018 DocStyles Survey included a module with questions about recommendations for CDC-recognized arthritis-appropriate physical activity programs (hereafter “programs”) (7), which have an evidence base for addressing physical activity barriers (8). PCPs treating an average of at least 1 adult with arthritis weekly completed multiple choice questions about physical activity counseling for adults with arthritis, including physical activity types, programs recommended, and reasons for not recommending programs.

We calculated percentages for physical activity type and program variables overall (N = 1,366) and reasons for not recommending programs among PCPs not recommending programs (n = 895). To identify opportunities for promoting program awareness, we generated distributions of PCP characteristics overall (N = 1,366) and for those recommending programs (n = 471) and unaware of programs (n = 710). We generated percentages using SAS version 9.4 (SAS Institute Inc); we performed χ² tests in Excel version 2008 (Microsoft Corp) to assess differences (significant at α = .05) between PCP groups.

Results

PCPs were commonly aged 50 or older (46.2%; 95% CI, 43.5%–48.8%), men (57.5%; 95% CI, 54.8%–60.1%), non-Hispanic White (67.1%; 95% CI, 64.6%–69.6%), and working in a group outpatient practice (67.5%; 95% CI, 65.0%–70.0%) (Table). Most PCPs recommended walking, swimming, or cycling (88.2%; 95% CI, 86.5%–89.9%), stretching (63.8%; 95% CI, 61.3%–66.4%), and physical therapy (60.8%; 95% CI, 58.2%–63.4%) (Figure). Programs were recommended less frequently than physical activity: 34.5% (n = 471) of PCPs recommended 1 or more programs. The most commonly recommended programs were the Arthritis Foundation’s Aquatic Program (18.0%; 95% CI, 16.0%–20.0%), the Arthritis Foundation’s Exercise Program (14.4%; 95% CI, 12.6%–16.3%), and Walk With Ease (13.8%; 95% CI, 12.0%–15.7%) (Figure). Most PCPs did not recommend any programs (65.5%; 95% CI, 63.0%–68.0%); among this group (n = 895), the most commonly reported reasons were being unaware of them (n = 710; 79.3%; 95% CI, 76.7%–82.0%); programs were unavailable in their area (22.5%; 95% CI, 19.7%–25.2%), unaffordable for patients (12.5%; 95% CI, 10.3%–14.7%), or inaccessible to patients (12.2%; 95% CI, 10.0%–14.3%); and believing patients would not attend (10.5%; 95% CI, 8.5%–12.5%).

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the U.S. Department of Health and Human Services, the Public Health Service, the Centers for Disease Control and Prevention, or the authors’ affiliated institutions.

2 Centers for Disease Control and Prevention • www.cdc.gov/pcd/issues/2021/21_0194.htm
Physically activity types and programs recommended by primary care providers (N = 1,366) who recommended physical activity to adults with arthritis, DocStyles 2018. For physical activity types, survey participants were asked, “When you talk to your patients with arthritis/rheumatic conditions about physical activity/exercise what type of activity do you recommend? Select all that apply.” For physical activity programs, survey participants were asked, “Have you ever recommended one or more of the following exercise programs to your patients? Select all that apply.” Survey participants were primary care providers who responded “always” or “sometimes” to “When you see patients with arthritis/rheumatic conditions how often do you recommend physical activity/exercise for management of their condition?” Error bars indicate 95% CIs. Abbreviation: AF, Arthritis Foundation.

Figure. Physical activity types and programs recommended by primary care providers (N = 1,366) who recommended physical activity to adults with arthritis, DocStyles 2018. For physical activity types, survey participants were asked, “When you talk to your patients with arthritis/rheumatic conditions about physical activity/exercise what type of activity do you recommend? Select all that apply.” For physical activity programs, survey participants were asked, “Have you ever recommended one or more of the following exercise programs to your patients? Select all that apply.” Survey participants were primary care providers who responded “always” or “sometimes” to “When you see patients with arthritis/rheumatic conditions how often do you recommend physical activity/exercise for management of their condition?” Error bars indicate 95% CIs. Abbreviation: AF, Arthritis Foundation.

Overall, 34.5% (95% CI, 32.0%–37.0%) of PCPs reported recommending 1 or more arthritis-appropriate programs (Figure). The distribution of most characteristics did not differ significantly between PCPs recommending physical activity programs and those unaware of physical activity programs, including by age, sex, region, provider type, years practicing, main work setting, number of practitioners in practice, and patient portal availability (Table). Exceptions were race or ethnicity (P < .001), privileges at a teaching hospital (P = .02), average number of patients treated per week (P < .001), and average number of patients with arthritis treated per week (P = .01). Distributions for PCPs recommending versus not recommending programs were significantly different for these same 4 variables.

Discussion

At least 3 in 5 PCPs recommending physical activity to adults with arthritis recommended low-impact aerobic activities (walking, swimming, or cycling), stretching, or physical therapy. These activities align with professional guidance on optimal activities for most adults with arthritis (2,3), although appropriate activities differ by individual. Still, most PCPs sampled (65.5%) did not recommend programs, with 79.3% of these PCPs unaware of them. Our study demonstrates that the guidance PCPs already consistently offer to patients can be strengthened by recommending programs when needed.

PCPs are important promoters of physical activity (4). Creating a safe, specific, and tailored exercise plan is important for adults with arthritis (2); many are hesitant about physical activity because of misplaced fears about joint damage (9). Additionally, adults with arthritis report the absence of referrals to programs from health care providers as a barrier to exercise; therefore, they are likely to be receptive to program referrals (10).

Adults with arthritis may benefit from greater awareness of safe, arthritis-appropriate, evidence-based physical activity programs. Proven program outcomes include improved physical activity levels, strength, and balance, and reduced pain, fatigue, and stiffness (11). PCPs aware of local resources could be more likely to provide referrals (12). Strategies to promote PCP awareness of physical activity programs include distributing information about program benefits and availability through clinical practice sites, health departments, public health partnerships, continuing medical education, clinical–community linkages, and electronic medical record prompts.

Study strengths include the large sample size and ability to assess counseling for arthritis management. Limitations include using an opportunity sample that was not nationally representative and survey questions that featured a limited list of physical activity types and programs. Future studies might consider examining additional activity and program recommendations.

Strategic focus of public health awareness campaigns promoting arthritis-appropriate physical activity programs to PCPs could increase their reach to adults with arthritis.
Acknowledgments

Ms Guglielmo’s contributions were supported by an appointment to the Research Participation Program at the Division of Population Health, Arthritis Program, administered by the Oak Ridge Institute for Science and Education through an interagency agreement between the US Department of Energy and Centers for Disease Control and Prevention.

Author Information

Corresponding Author: Dana Guglielmo, MPH, Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Hwy NE, MS S107-6, Atlanta, GA 30341. Telephone: 404-498-5453. Email: danagugliel@gmail.com.

Author Affiliations: 1Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia. 2Oak Ridge Institute for Science and Education, Oak Ridge, Tennessee. 3Optum Life Sciences, Inc, Eden Prairie, Minnesota. 4ASRT Inc, Smyrna, Georgia. 5Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia. 6Epidemic Intelligence Service, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia.

References

1. 2018 Physical Activity Guidelines Advisory Committee. 2018 Physical Activity Guidelines Advisory Committee scientific report. Washington (DC): US Department of Health and Human Services; 2018. https://health.gov/sites/default/files/2019-09/PAG_Advisory_Committee_Report.pdf. Accessed February 17, 2021.

2. US Department of Health and Human Services. Physical activity guidelines for Americans, 2nd edition. 2018. https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf. Accessed February 17, 2021.

3. Kolasisinski SL, Neogi T, Hochberg MC, Oatis C, Guyatt G, Block J, et al. 2019 American College of Rheumatology/Arthritis Foundation guideline for the management of osteoarthritis of the hand, hip, and knee. Arthritis Care Res (Hoboken) 2020;72(2):149–62.

4. Lobelo F, Stoutenberg M, Hutber A. The Exercise is Medicine Global Health Initiative: a 2014 update. Br J Sports Med 2014;48(22):1627–33.

5. Cisternas MG, Yelin E, Katz JN, Solomon DH, Wright EA, Losina E. Ambulatory visit utilization in a national, population-based sample of adults with osteoarthritis. Arthritis Rheum 2009;61(12):1694–703.

6. Guglielmo D, Murphy LB, Theis KA, Helmick CG, Omura JD, Odom EL, et al. Physical activity assessment and recommendation for adults with arthritis by primary care providers — DocStyles, 2018. Am J Health Promot 2021;35(4):559–70.

7. Centers for Disease Control and Prevention. Arthritis. Physical activity programs. 2019. https://www.cdc.gov/arthritis/interventions/physical-activity.html. Accessed February 17, 2021.

8. Brady TJ, Jernick SL, Hootman JM, Sniezek JE. Public health interventions for arthritis: expanding the toolbox of evidence-based interventions. J Womens Health (Larchmt) 2009;18(12):1905–17.

9. Katz P, Andonian BJ, Huffman KM. Benefits and promotion of physical activity in rheumatoid arthritis. Curr Opin Rheumatol 2020;32(3):307–14.

10. Wilcox S, Der Ananian C, Abbott J, Vrazel J, Ramsey C, Sharpe PA, et al. Perceived exercise barriers, enablers, and benefits among exercising and nonexercising adults with arthritis: results from a qualitative study. Arthritis Rheum 2006;55(4):616–27.

11. Callahan LF. Physical activity programs for chronic arthritis. Curr Opin Rheumatol 2009;21(2):177–82.

12. Omura JD, Watson KB, Loustalot F, Fulton JE, Carlson SA. Primary care providers’ awareness of physical activity-related intensive behavioral counseling services for cardiovascular disease prevention. Am J Health Promot 2019;33(2):208–16.
## Table

| Characteristic               | Overall Sample (N = 1,366) | PCPs Recommending Physical Activity Programs (n = 471) | PCPs Unaware of Physical Activity Programs (n = 710) | PCPs Recommending vs Unaware χ² P Value<sup>2</sup> |
|-----------------------------|-----------------------------|-------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------|
|                             | n                          | %<sup>e</sup> (95% CI)                                  | n                          | %<sup>e</sup> (95% CI)                       | n                          | %<sup>e</sup> (95% CI) | χ² P Value<sup>2</sup> |
| **Sociodemographic**        |                             |                                                      |                                                      |                                              |
| **Age group, y**            |                             |                                                      |                                                      |                                              |
| 21−39                       | 285                         | 20.9 (18.7−23.0)                                      | 105                         | 22.3 (18.5−26.1)                            | 158                         | 22.3 (19.2−25.3)   | .96                       |
| 40−49                       | 450                         | 32.9 (30.4−35.4)                                      | 157                         | 33.3 (29.1−37.6)                            | 228                         | 32.1 (28.7−35.6)   | .82                       |
| ≥50                         | 631                         | 46.2 (43.5−48.8)                                      | 209                         | 44.4 (39.9−48.9)                            | 324                         | 45.6 (42.0−49.3)   | .82                       |
| **Sex**                     |                             |                                                      |                                                      |                                              |
| Male                        | 785                         | 57.5 (54.8−60.1)                                      | 268                         | 56.9 (52.4−61.4)                            | 407                         | 57.3 (53.7−61.0)   | .94                       |
| Female                      | 581                         | 42.5 (39.9−45.2)                                      | 203                         | 43.1 (38.6−47.6)                            | 303                         | 42.7 (39.0−46.3)   | .94                       |
| **Race or ethnicity**       |                             |                                                      |                                                      |                                              |
| Non-Hispanic White          | 917                         | 67.1 (64.6−69.6)                                      | 260                         | 55.2 (50.7−59.7)                            | 532                         | 74.9 (71.7−78.1)   | <.001                     |
| Non-Hispanic Asian          | 260                         | 19.0 (16.9−21.1)                                      | 123                         | 26.1 (22.1−30.1)                            | 105                         | 14.8 (12.2−17.4)   | .82                       |
| Other race or ethnicity     | 189                         | 13.8 (12.0−15.7)                                      | 88                          | 18.7 (15.2−22.2)                            | 73                          | 10.3 (8.0−12.5)    | .82                       |
| **Region**                  |                             |                                                      |                                                      |                                              |
| Northeast                   | 321                         | 23.5 (21.2−25.8)                                      | 102                         | 21.7 (17.9−25.4)                            | 180                         | 25.4 (22.1−28.6)   | .71                       |
| Midwest                     | 317                         | 23.2 (21.0−25.4)                                      | 103                         | 21.9 (18.1−25.6)                            | 170                         | 23.9 (20.8−27.1)   | .94                       |
| South                       | 471                         | 34.5 (32.0−37.0)                                      | 170                         | 36.1 (31.8−40.4)                            | 233                         | 32.8 (29.4−36.3)   | .94                       |
| West                        | 257                         | 18.8 (16.7−20.9)                                      | 96                          | 20.4 (16.7−24.0)                            | 127                         | 17.9 (15.1−20.7)   | .94                       |
| **Medical Practice**        |                             |                                                      |                                                      |                                              |
| Provider type               |                             |                                                      |                                                      |                                              |
| Family practitioner         | 477                         | 34.9 (32.4−37.5)                                      | 160                         | 34.0 (29.7−38.3)                            | 243                         | 34.2 (30.7−37.7)   | .16                       |
| Internist                   | 503                         | 36.8 (34.3−39.4)                                      | 200                         | 42.5 (38.0−46.9)                            | 235                         | 33.1 (29.6−36.6)   | .94                       |
| Obstetrician/gynecologist   | 173                         | 12.7 (10.9−14.4)                                      | 50                          | 10.6 (7.8−13.4)                             | 103                         | 14.5 (11.9−17.1)   | .94                       |
| Nurse practitioner          | 213                         | 15.6 (13.7−17.5)                                      | 61                          | 13.0 (9.9−16.0)                             | 129                         | 18.2 (15.3−21.0)   | .94                       |
| **Years practicing medicine**|                             |                                                      |                                                      |                                              |
| <10                         | 287                         | 21.0 (18.8−23.2)                                      | 99                          | 21.0 (17.3−24.7)                            | 164                         | 23.1 (20.0−26.2)   | .84                       |
| 10−19                       | 497                         | 36.4 (33.8−38.9)                                      | 176                         | 37.4 (33.0−41.7)                            | 252                         | 35.5 (32.0−39.0)   | .94                       |

Abbreviation: PCP, primary care provider.
<sup>1</sup> Main analytic sample (N = 1,366) were primary care providers who responded “always” or “sometimes” to “When you see patients with arthritis/rheumatic conditions how often do you recommend physical activity/exercise for management of their condition?”
<sup>2</sup> Defined using the question, “Have you ever recommended one or more of the following exercise programs to your patients? Select all that apply.” Answer options included 6 arthritis-appropriate physical activity programs recognized by the Centers for Disease Control and Prevention (Arthritis Foundation Exercise Program, Walk With Ease, Active Living Every Day, Fit & Strong!, EnhanceFitness, and Arthritis Foundation Aquatic Program) and none of these.
<sup>3</sup> Defined as responding “I do not know about these programs.” to “Why don’t you recommend the listed exercise programs to your patients with arthritis/rheumatic conditions? Select all that apply.”
<sup>4</sup> χ² tests compared the percentage distributions of PCP characteristics for PCPs recommending physical activity programs and PCPs unaware of physical activity programs; significant if P < .05.
<sup>5</sup> Some columns do not sum to 100% because of rounding.
<sup>6</sup> Number of practitioners in the practice includes the respondent.

(continued on next page)
### Table. Distribution of Characteristics of Primary Care Providers Who Recommend Physical Activity to Adults With Arthritis, Overall and by Counseling Subgroups, DocStyles 2018

| Characteristic | Overall Sample (N = 1,366) | PCPs Recommending Physical Activity Programs (n = 471) | PCPs Unaware of Physical Activity Programs (n = 710) | PCPs Recommending vs Unaware χ² P Value |
|----------------|-----------------------------|-----------------------------------------------------|--------------------------------------------------|---------------------------------------|
| n | %a (95% CI) | n | %a (95% CI) | n | %a (95% CI) | n | %a (95% CI) |
|---|---|---|---|---|---|---|---|
| 20–29 | 389 | 28.5 (26.1–30.9) | 140 | 29.7 (25.6–33.9) | 194 | 27.3 (24.0–30.6) | | |
| ≥30 | 193 | 14.1 (12.3–16.0) | 56 | 11.9 (9.0–14.8) | 100 | 14.1 (11.5–16.6) | | |
| Privileges at a teaching hospital | | | | | | | | |
| Yes | 623 | 45.6 (43.0–48.3) | 253 | 53.7 (49.2–58.2) | 302 | 42.5 (38.9–46.2) | | .02 |
| No | 743 | 54.4 (51.7–57.0) | 218 | 46.3 (41.8–50.8) | 408 | 57.5 (53.8–61.1) | | |
| Main work setting | | | | | | | | |
| Individual outpatient practice | 298 | 21.8 (19.6–24.0) | 102 | 21.7 (17.9–25.4) | 145 | 20.4 (17.5–23.4) | | .92 |
| Group outpatient practice | 922 | 67.5 (65.0–70.0) | 317 | 67.3 (63.1–71.5) | 491 | 69.2 (65.8–72.6) | | |
| Inpatient practice | 146 | 10.7 (9.0–12.3) | 52 | 11.0 (8.2–13.9) | 74 | 10.4 (8.2–12.7) | | |
| Average number of patients treated per week | | | | | | | | |
| <75 | 279 | 20.4 (18.3–22.6) | 61 | 13.0 (9.9–16.0) | 184 | 25.9 (22.7–29.1) | | <.001 |
| 75–99 | 281 | 20.6 (18.4–22.7) | 90 | 19.1 (15.6–22.7) | 158 | 22.3 (19.2–25.3) | | |
| 100–124 | 431 | 31.6 (29.1–34.0) | 140 | 29.7 (25.6–33.9) | 224 | 31.5 (28.1–35.0) | | |
| ≥125 | 375 | 27.5 (25.1–29.8) | 180 | 38.2 (33.8–42.6) | 144 | 20.3 (17.3–23.2) | | |
| Average number of adults with arthritis treated per week | | | | | | | | |
| 1–9 | 589 | 43.1 (40.5–45.7) | 161 | 34.2 (29.9–38.5) | 346 | 48.7 (45.0–52.4) | | .01 |
| 10–19 | 456 | 33.4 (30.9–35.9) | 178 | 37.8 (33.4–42.2) | 223 | 31.4 (28.0–34.8) | | |
| ≥20 | 321 | 23.5 (21.2–25.8) | 132 | 28.0 (24.0–32.1) | 141 | 19.9 (16.9–22.8) | | |
| Number of practitioners in practicef | | | | | | | | |
| 1 or 2 | 304 | 22.3 (20.0–24.5) | 94 | 20.0 (16.3–23.6) | 151 | 21.3 (18.3–24.3) | | .60 |
| 3–5 | 383 | 28.0 (25.7–30.4) | 146 | 31.0 (26.8–35.2) | 182 | 25.6 (22.4–28.9) | | |
| 6–11 | 303 | 22.2 (20.0–24.4) | 109 | 23.1 (19.3–27.0) | 161 | 22.7 (19.6–25.8) | | |
| ≥12 | 376 | 27.5 (25.2–29.9) | 122 | 25.9 (21.9–29.9) | 216 | 30.4 (27.0–33.8) | | |
| Patient portal available | | | | | | | | |
| Yes | 986 | 72.6 (69.8–74.6) | 349 | 74.1 (70.1–78.1) | 520 | 73.2 (70.0–76.5) | | .84 |
| No or not sure | 380 | 27.8 (25.4–30.2) | 122 | 25.9 (21.9–29.9) | 190 | 26.8 (23.5–30.0) | | |

Abbreviation: PCP, primary care provider.

a Main analytic sample (N = 1,366) were primary care providers who responded “always” or “sometimes” to “When you see patients with arthritis/rheumatic conditions how often do you recommend physical activity/exercise for management of their condition?”

b Defined using the question, “Have you ever recommended one or more of the following exercise programs to your patients? Select all that apply.” Answer options included 6 arthritis-appropriate physical activity programs recognized by the Centers for Disease Control and Prevention (Arthritis Foundation Exercise Program, Walk With Ease, Active Living Every Day, Fit & Strong!, EnhanceFitness, and Arthritis Foundation Aquatic Program) and none of these.

c Defined as responding “I do not know about these programs.” to “Why don’t you recommend the listed exercise programs to your patients with arthritis/rheumatic conditions? Select all that apply.”

d χ² tests compared the percentage distributions of PCP characteristics for PCPs recommending physical activity programs and PCPs unaware of physical activity programs; significant if P < .05.

e Some columns do not sum to 100% because of rounding.

f Number of practitioners in the practice includes the respondent.