CME

Physical Activity and Physical Activity Participation Barriers Among Adults 50 Years and Older During the COVID-19 Pandemic

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Objective: We examined changes in physical activity from pre–COVID-19 to during the COVID-19 pandemic and the factors associated with reduced physical activity levels among adults 50 yrs and older.

Design: Participants of a validation study were stratified into being "less active than before" or "equally or more active than before" COVID-19. Multivariable manual backward analyses were used to identify self-reported barriers associated with the reduction in physical activity.

Results: Reduced physical activity levels during COVID-19 were reported among 244 of 503 participants (43%). After adjusting for demographics and health conditions, factors that increased the odds of reduced physical activity levels during COVID-19 were lacking access to workout places, feeling too anxious, and difficulty committing to physical activity. Factors that decreased the odds of reduced physical activity levels during COVID-19 were self-identifying a heart- or lung-associated diagnosis that impacts physical activity and having a 12-mo retrospective history of falling.

Conclusions: The physical activity participation barriers identified to be associated with a reduction in physical activity can be used as a starting point for a conversation regarding physical activity participation during COVID-19.

Key Words: Older Adult, COVID-19 Physical Activity, Self-reported

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What Is Known

- The coronavirus pandemic has impacted the ability to complete the recommended levels of physical activity. Among adolescence, the primary barrier to performing physical activity during the pandemic is lack of workout places.

What Is New

- Among adults 50 yrs and older, factors that increased odds of reduced PA levels during the pandemic were lacking access to workout places, feeling too anxious, and difficulty committing to PA. Factors that decreased odds of reduced PA levels during the pandemic were self-identifying a heart- or lung-associated diagnosis that impacts PA and having a 12-mo retrospective history of falling.

Before the coronavirus disease 2019 (COVID-19) pandemic, 72% of women and 59% of men between the ages of 50–65 yrs reported not meeting the recommended 150 mins of weekly moderate-to-vigorous intensity physical activity (PA),[1] meaning that they were insufficiently active. Among those aged 75–84 yrs, the percentage who do not meet the recommended amount of PA increases to 88%.[2] The importance of meeting

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CME Objectives: Upon completion of this article, the reader should be able to: (1) Describe the changes in physical activity levels among adults 50 yrs and older from pre–COVID-19 to during the COVID-19 pandemic; (2) Differentiate between the COVID-19 related factors associated with reduced physical activity levels among adults 50 yrs and older and younger adults; and (3) Identify the physical activity–related factor that decreased the odds of reduced physical activity levels during COVID-19 among adults 50 yrs and older.

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the recommended levels of PA was highlighted by the recent updates in the World Health Organization's recommendations for PA. They stated that participating in regular PA is important for all older adults and not just for those with poor mobility.[3] Therefore, it is concerning that recent research has identified that during the COVID-19 pandemic, 37%–60% of adults 18 yrs and older performed even less PA than prepandemic.[4–7] The concerns regarding the low levels of PA among those 50 yrs and older are heightened when examining the health-related consequences of insufficient PA, including increased risk of morbidity, mortality, falling, and need for caregiver support.[8] Furthermore, Hoffman et al.[4] (2022) identified that the decreased PA levels seen during COVID-19 were significantly associated with greater risk of physical deconditioning and reduced mobility, both of which are associated with increased risk of falling. In addition, exercise experts have raised the concern that because of the difficulties associated with meeting the recommended amount of PA and reinitiating a health-promoting behavior, it is very likely that when the world recovers from the COVID-19 pandemic, many individuals will remain insufficiently active.[9]

Due to the consequences of insufficient PA, the additional reduction in pandemic PA levels, and continued COVID-19 transmission in the community, it is important to assess PA participation barriers that are present during the COVID-19 pandemic. Identifying PA participation barriers is an important initial step toward addressing a reduction in PA and assists with developing strategies to prevent future PA reductions. To our knowledge, there is no published research on PA participation barriers experienced during COVID-19 among adults 50 yrs and older. However, there have been a few studies examining PA participation barriers encountered by adolescents during COVID-19.[10] Among adolescence, the top barriers identified during the COVID-19 pandemic include the cancellation of clubs and sports, lack of motivation, and lack of appropriate facilities, equipment, and space.[10] However, because of previous research examining differences between PA participation barriers among younger adults and middle or older adults, we cannot expect the research conducted during COVID-19 to generalize to middle-aged and older adults. For example, research conducted before COVID-19 identified that older adults are more likely to report health-related PA participation barriers, such as arthritis or cardiopulmonary disease, which are not relevant to the adolescent population.[11] Furthermore, younger adults, adolescents, and children tend to have PA participation barriers related to raising a family, working, and school, respectively.[12] According to Hickey and Mason[12] (2017), these differences in barriers can be attributed to the different responsibilities experienced at different stages of life. As PA participation barriers are different among middle-aged and older adults compared with younger adults or children, it is important to examine the barriers for aging adults to better address their needs.

Therefore, the purpose of this study was to examine changes in PA from pre–COVID-19 to during the COVID-19 pandemic among adults 50 yrs and older. In addition, we explored PA participation barriers associated with a reduction in PA levels during COVID-19. Similar to previous research,[4–7] we hypothesized that approximately 50% of participants would report engaging in less PA during COVID-19 than they did before COVID-19. In addition, as lack of access to workout places was a common PA participation barrier present before COVID-19,[13] we hypothesized that the participants would identify lack of access as a PA participation barrier during COVID-19.

METHODS

Design and Population

The same cohort involved in the validation study of the Inventory of Physical Activity Barriers (IPAB)[14] was included in the current analysis, see previous publication for details about the study methodology.[14] The data were collected from June to December 2020. Participants included community-dwelling adults who reported being at least 50 yrs old and able to read, comprehend, and write in English. Participants were excluded if they needed assistance from another person to leave their house or lived at an assisted living or long-term care facility. Recruitment strategies included targeted advertisements, social media messages, listserv postings, flyers, and e-mails to healthcare providers and agencies that serve older adults (e.g., physical therapists, physicians, senior centers, independent living communities, and area agencies on aging). Additional recruitment occurred using the Claude D. Pepper Older Americans Independence Center registry (IRB0503150) at the University of Pittsburgh. All potential participants received an e-mail with the study link to REDCap (Vanderbilt University, Nashville, Tennessee), a secure data collection software. The University of Vermont's internal review board approved the study. All participants completed the internal review board–approved consenting process before initiating data collection. The written consenting process involved an information sheet that was presented electronically, and participants acknowledged reading the information sheet before initiating the first questionnaire.

Data Sources

Participant Characteristics

All participants completed an online questionnaire, which enquired about: (1) age; (2) sex; (3) race and ethnicity; (4) education; (5) income; (6) marital status; (7) rurality; (8) ability to walk or wheel a half a mile; (9) 12-mo retrospective history of falls; (10) height and weight; (11) if they like PA; (12) if they would like to be more physically active; (13) if they think that participating in higher amounts of PA would be beneficial; (14) if they think PA is important; (15) if a healthcare provider has told them to be more physically active; and (16) if conditions or diagnoses related to their muscles or bone, heart or lungs, sensory system, mental or cognition, and degenerative disorders or diagnoses, are barriers to their PA participation.

Physical Activity Vital Sign

The Physical Activity Vital Sign is a reliable and valid scale that uses the following two questions to ask about weekly moderate-to-vigorous level of PA: (1) on average, how many days per week do you engage in moderate to vigorous PA (like a brisk walk)? and (2) on average, how many minutes do you engage in PA at this level?[15] The scale is scored by multiplying the responses to the two questions.[15,16] The agreement for meeting the recommended 150 mins of weekly moderate-to-vigorous level of PA was moderate when comparing the Physical Activity Vital Sign and accelerometry data ($\kappa = 0.46$, $P < 0.05$).[16]

Physical Activity Participation Barriers

The IPAB is a 27-item scale that assesses PA participation barriers among individuals 50 yrs and older.[14] Scale respondents are informed that the purpose of the scale is to "learn about your barriers to doing physical activity at a moderate-to-vigorous intensity," using the following definition of moderate-to-vigorous PA: "Physical activity is any movement that is produced by your muscles and requires energy. It is classified as a moderate intensity when you can talk, but not sing during the activity and a vigorous activity is when you cannot complete full sentences during the activity. Examples include gardening, active house chores, brisk walking, climbing stairs, biking, or dancing." The scale lists 27 potential PA participation barriers, which all have the same stem: "My physical activity is limited, because…" Response options are on a 5-point Likert scale ("never" [1], "rarely" [2], "sometimes" [3], "often" [4], and "always" [5]). Item scores are averaged for an overall total scale score, ranging from 1 to 5, with higher scores indicating more PA participation barriers. The IPAB has good internal consistency ($\alpha = 0.91$) and high test-retest reliability (intraclass correlation coefficient = 0.99) and illustrates content validity.[14]

Physical Activity Levels During COVID-19

Physical activity levels during COVID-19 were assessed by having participants complete the statement "Compared to the months pre–COVID-19, are you currently…" with one of the following options: (1) "less active than before"; (2) "as active as before"; or (3) "more active than before." Because the objective was to compare those that were less active during the COVID-19 pandemic to all other participants, we grouped "as active as before" and "more active than before" into the same category, resulting in the following two categories: "less active than before" and "equally or more active than before."

Analysis

All statistical analyses were performed using the Statistical Package for the Social Sciences software (SPSS) version 26 (IBM Corp, New York). Participants were stratified into the two PA groups described previously, "less active than before (COVID-19)" and "equally or more active than before (COVID-19)." Frequencies (percentages) and means (SDs) were calculated for all variables related to participant characteristics. A correlation matrix was used to identify PA participation barriers that highly correlated with each other and thus may indicate multicollinearity. When two or more PA participation barriers had a correlation coefficient greater than 0.4, the PA participation barrier with the highest average item mean and corrected item-total score correlation was retained. The retained PA participation barriers were dichotomized into present ("rarely," "sometimes," "often," and "always" a PA participation barrier) or absent ("never" a PA participation barrier). The dichotomized PA participation barriers were then entered into an initial binary logistic regression,[17] and then a multivariable manual backward analysis was conducted. Starting with the PA participation barrier that had the highest P value, one item at a time was eliminated until all P values were less than 0.1. During this process, the following items were eliminated: (1) feeling vulnerable ($P = 0.91$); (2) not having others to be physically active with ($P = 0.79$); (3) lacking emotional support for PA ($P = 0.77$); (4) cost associated with PA ($P = 0.58$); (5) insufficient PA participation benefits ($P = 0.51$); (6) weighing too much or too little ($P = 0.51$); and (7) lacking knowledge related to PA ($P = 0.40$). The initial model was then iteratively adjusted for the following variables: (1) demographic (age, sex, race/ethnicity, education, income, and rurality); and (2) health-related variables (health conditions or diagnosis related to their muscles or bone, heart or lungs, sensory system, mental or cognition, and degenerative disorders or diagnosis that participants perceive as barriers to PA, body mass index, ability to walk or wheel 0.5 miles, and 1-yr retrospective fall history). Results are presented in odds ratio (OR) and 95% confidence interval (95% CI). The χ^2 and Hosmer-Lemeshow tests were used to assess the model's goodness-of-fit. Multicollinearity was assessed using variance inflation factors.

RESULTS

Participant Characteristics and Physical Activity Participation

The 503 participants had a mean age of 70.1 yrs (SD = 8.5 yrs) and were primarily women (69.9%), non-Hispanic White (95.4%), had at least a college degree (81.3%), had an annual income greater than $45,000 (77.8%), were married (65.6%), and had more than half meeting the recommended levels of PA at the time of assessment (59.3%). The participants had an average IPAB score of 1.8 of 5.0 (SD = 0.5) with a range of 1.0–3.2. After stratifying the sample into (1) participants performing more or the same amount of PA as pre-COVID, or (2) participants performing less PA than pre-COVID, we identified that the less active group during COVID-19 ($n = 224$, 45%) had a statistically lower percentage of participants within the following demographic variables: college degree or higher (77.6% vs. 84.5%); income greater than 100,000 (28.6% vs. 84.5%); ability to walk a half a mile (90.6% vs. 96.1%); and meeting the recommended 150 mins of moderate-to-vigorous PA (41.1% vs. 73.8%). The less active group also had a statistically higher percentage of participants classified as obese (33.9% vs. 21.2%), manifesting a mental health or cognitive diagnosis (5.8% vs. 1.4%), and having a degenerative diagnosis (10.7% vs. 4.7%). For additional details, see Table 1.

Factors Associated With Participating in Less PA During COVID-19

Within the multivariable models, the following self-identified PA participation barriers had a statistically significant association with performing less PA during COVID-19 than the months preceding the pandemic: (1) feeling too anxious to be physically active (OR = 1.79, 95% CI = 1.14–2.82; $P = 0.001$); (2) difficulty committing to PA (OR = 1.69; 95% CI = 1.07–2.88; $P = 0.04$); (3) not prioritizing PA (OR = 1.66; 95% CI = 1.08–2.56; $P = 0.004$); and (4) lacking access to workout places (OR = 2.11; 95% CI = 1.42–3.15; $P < 0.001$). After adjusting for demographic factors, all four PA participation barriers maintained their significance ($P < 0.05$). In addition to the self-identified PA participation barriers, having a college education was also identified to be significantly associated with performing less PA during COVID-19. When adjusting for health conditions, mobility, fall history, and body mass

TABLE 1. Participant characteristics by perceived changes in physical activity levels during COVID-19 compared with months preceding the pandemic

Characteristics	Equal/More Active During COVID-19 (n = 279)	Less Active During COVID-19 (n = 224)	P
Age, mean (SD), yr	69.6 (8.7)	70.6 (8.2)	0.22
Women, n (%)	188 (67.4)	163 (72.8)	0.21
Race or ethnicity, n (%)			0.12
Non-Hispanic White	264 (96.4)	215 (96.0)	
Black or African American	4 (1.4)	7 (3.1)	
Asian	2 (0.7)	2 (0.9)	
Middle Eastern or North African	1 (0.4)	0 (0.0)	
Latino/a	4 (1.4)	0 (0.0)	
Some other race/ethnicity	4 (1.4)	0 (0.0)	
Education level, College degree or higher, n (%)	236 (84.5)	173 (77.6)	0.04
Annual household income, n (%)			0.001
≤$45,000	48 (17.2)	64 (28.6)	
$45–99,999	106 (38.0)	96 (42.8)	
≥$100,000	125 (44.8)	64 (28.6)	
Marital status, Married, n (%)	190 (68.1)	140 (62.5)	0.17
Rurality, n (%)			0.92
Rural/country	45 (16.2)	34 (15.2)	
Suburban	146 (52.3)	121 (54.0)	
Urban/city	88 (31.5)	69 (30.8)	
Ability to walk or wheel half a mile, n (%)	268 (96.1)	203 (43.1)	0.02
1-Year retrospective history of fall, n (%)	67 (24.0)	49 (21.9)	0.59
Body mass index categories, n (%)			<0.001
Underweight	7 (2.5)	3 (1.3)	
Healthy	135 (48.6)	79 (35.3)	
Overweight	77 (27.7)	66 (29.5)	
Obese	59 (21.2)	76 (33.9)	
Complete ≥150 mins of weekly moderate-vigorous PA, n (%)	206 (73.8)	92 (41.1)	<0.001
Healthcare provider has told them to be physically active, n (%)	134 (48.0)	124 (55.4)	0.11
Reports the following health conditions as barriers to PA, n (%)			
Muscle- or bone-related conditions	112 (40.1)	102 (45.5)	0.24
Heart- or lung-related conditions	30 (10.8)	28 (12.5)	0.58
Sensory system–related conditions	6 (2.2)	11 (4.9)	0.13
Mental- or cognition-related conditions	4 (1.4)	13 (5.8)	0.01
Degenerative disorders or diagnosis	13 (4.7)	24 (10.7)	0.02

index, the PA participation barriers that remained statistically associated with less PA during COVID-19 included feeling too anxious to be physically active, difficulty committing to PA, and lack of access to workout places. In addition, having at least a college education, self-identifying a heart- or lung-associated diagnosis that impacts PA, and having a 12-mo retrospective history of falling were also significantly associated with performing less PA during COVID-19. In the final model, the PA participation barrier with the highest OR (OR = 2.32, 95% CI = 1.51–3.56; $P < 0.001$) was lack of access to workout places. For additional details, see Table 2.

DISCUSSION

As hypothesized, approximately half of the participants (45%) reported lower PA levels during COVID-19 as compared with pre–COVID-19 levels and the top self-reported PA participation barrier associated with this reduction in PA was lack of access to workout places. Other self-reported PA participation barriers associated with increased odds of being less physically active during COVID-19 included feeling too anxious to be physically active, difficulty committing to PA, and not prioritizing PA. After adjusting for demographics and health conditions, lack of access to workout places, feeling too anxious to be physically active, and difficulty committing to PA continued to increase the odds of being less physically active during COVID-19 compared with the months preceding the pandemic. In addition, having at least a college education, self-reporting a cardiopulmonary diagnosis that impacts PA, and having a fall in the past year decreased the odds of being less physically active during COVID-19 than the months preceding the pandemic. To our knowledge, this study is the first study to report PA participation factors among adults 50 yrs and older associated with a reduction in PA levels during COVID-19 when compared with pre–COVID-19 PA participation levels.

Despite the results focusing on PA participation among adults 50 yrs and older, the percentage of participants reporting

TABLE 2. Multivariable logistic regression models evaluating the association between self-identified barriers and participating in less PA during COVID-19

	Model 1: Self-Identified Barriers Model Fit: 73.73; $P < 0.001$ R2: 0.14–0.18		Model 2: Model 1 + Demographics Model Fit: 93.16; $P < 0.001$ R2: 0.17–0.23		Model 3: Model 2 + Health Conditions Model Fit: 109.19; $P < 0.001$ R2: 0.20–0.26	
Characteristics	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
"I feel too anxious to be physically active."	1.79[a]	1.14–2.82	1.85[b]	1.16–2.95	1.98[b]	1.21–3.22
"It's hard to commit to regular activity."	1.69[a]	1.07–2.88	1.82[a]	1.01–3.26	1.87[a]	1.01–3.48
"Physical activity is not a priority of mine"	1.66[a]	1.08–2.56	1.62[a]	1.04–2.52	1.51	0.96–2.40
"I don't have enough energy"	1.43	0.88–2.31	1.45	0.89–2.36	1.43	0.87–2.35
"It's hard for me to get around"	1.83	0.78–1.80	1.07	0.69–1.65	1.00	0.62–1.63
"I don't have good balance."	1.15	0.75–1.75	1.95	0.61–1.49	0.98	0.62–1.56
"I don't have access to work-out places"	2.11[c]	1.42–3.15	2.22[c]	1.46–3.37	2.32[b]	1.51–3.56
Age			1.02	0.99–1.04	1.02	0.99–1.05
Sex			1.02	0.65–1.60	0.97	0.61–1.55
Race/ethnicity						
Black or African American			1.05	0.26–4.27	0.86	1.99–3.72
Latino			0.00	0.00–0.00	0.00	0.00–0.00
Education						
≥College			0.29[a]	0.08–0.94	0.26[a]	0.08–0.87
Income						
≥$100,000			0.62	0.35–1.10	0.64	0.35–1.16
Residing in rural setting			1.20	0.69–2.08	1.20	0.68–2.12
Reports the following health conditions as barriers to PA						
Heart- or lung-related conditions					0.49[a]	0.24–0.98
Muscle- or bone-related conditions					1.94	0.57–6.66
Sensory system–related conditions					2.60	0.70–9.64
Mental- or cognition-related conditions					1.76	0.74–4.18
Body mass index						
Overweight					2.28	0.50–10.37
Obese					2.69	0.56–12.06
Fall in the past year					0.63[a]	0.38–0.99

[a] $P < 0.05$.
[b] $P < 0.01$.
[c] $P < 0.001$.

a reduction in PA levels during COVID-19 and the primary PA participation barrier, lacking access to workout places, aligned with previous publications exploring PA participation among younger individuals.[4,5,10] The reasons for the similar findings are likely due to the following two factors which impacted individuals of all ages: (1) closure of gym spaces during the time of data collection and (2) the recommendations by either the local or state government or the Centers for Disease Control and Prevention to quarantine.[18] Furthermore, older adults are identified to be more fearful of COVID-19 and its impact on their health and thus are more likely to follow social isolation recommendations.[19] Another PA participation barrier likely associated with fear of COVID-19 is the feeling of being too anxious to participate in PA. According to Yu and Mahendran[20] (2021), older adults who were fearful of COVID-19 were more likely to report symptoms of anxiety and depression. This heightened level of anxiety, particularly in settings where participants previously engaged in PA, likely influenced their PA behaviors. Previous systematic reviews that preceded the pandemic did not observe associations between anxiety and PA.[13] Thus, these associations may be unique to the COVID-19 pandemic experience and its contribution to anxiety impacting a variety of behavioral decisions beyond just engaging in PA.[21]

Interestingly, self-identifying a heart- or lung-associated diagnosis that impacts PA or having a fall in the last year reduced the odds of performing less PA during COVID-19. The reduced odds of performing less PA during COVID-19 indicates that these factors are protective. The reasons these factors may be protective are that individuals with a heart- or lung-associated diagnosis or a history of falls may (1) feel more susceptible to negative health outcomes if they do not perform regular PA and (2) perceive greater benefits associated with participating in PA.[22] In general, individuals with higher perceived risk of a negative health outcome are more likely to engage in health-promoting behaviors, such as PA.[23] Part of the higher perceived risk is the perception of severity or consequences associated with not participating in PA,[23] such as increased risk of heart- or lung-related health consequences (i.e., exacerbation of congestive heart failure or chronic obstructive pulmonary disease) or increased risk of falling.[23] In addition, because individuals with heart or lung diagnosis or a risk for falling

are at increased risk of negative health consequences associated with insufficient PA, they may receive additional cues or motivators to remain physically active, further increasing their likelihood of remaining active during the COVID-19 pandemic.[22,24]

Knowledge regarding the PA participation barriers associated with a reduction of PA levels during COVID-19 can help inform strategies and interventions that may increase PA levels. For example, knowing that lack of access to workout places is a PA participation barrier that is associated with exceeding two-fold greater odds of being less active suggests the need for education regarding home-based PA options. A potential alternative solution is delivering evidence-based programs online and making them available to older adults. Evidence-based online PA programs have been shown to have a positive impact on older adults' social needs[25] and social engagement.[26] Success of these programs depends on commercial, municipal, and federal support for addressing common challenges including access to broadband, access to the required technology, and limited experience and skills related to using the technology.[27] As lack of access to workout places was a barrier identified pre–COVID-19, the importance of addressing it is even greater.[13]

Another example is integrating discussions about PA and participation barriers into clinical encounters with healthcare providers or in settings with exercise specialists. The results of this study can help initiate a conversation about PA participation barriers faced by adults 50 yrs and older. Through conversations about PA, healthcare providers or exercise experts can use the following four steps to address PA participation barriers: (1) identifying the problem or the barrier that is preventing someone from being physically active; (2) have the adult 50 yrs and older generate solutions to the problem; (3) select one solution to test; and (4) evaluate the solution's success or failure.[28] Such discussions allow healthcare providers and exercise experts to play a potential larger role in prevention of adverse health outcomes in older adults including frailty, falls, disability, hospitalization, and mortality.[29]

Before applying these results, a few limitations need to be considered. The primary limitation is that PA participation and PA participation barriers were not measured before COVID-19, which would have allowed for a greater ability to evaluate the impact of COVID-19 on PA and PA participation barriers. Another limitation is the use of a subjective PA assessment scale (Physical Activity Vital Sign) as epidemiological studies have identified that PA assessments based on self-report questionnaires can result in overestimations of PA.[30] In addition, the participants were primarily non-Hispanic White women with at least a college degree. As other populations of people with various backgrounds often have different PA participation barriers,[31] the barriers associated with a reduction of PA during COVID-19 in this study might not all generalize to individuals outside of the study sample. Another limitation is that we did not assess the participants' perceptions related to their social isolation and loneliness. This is important in that social isolation can impact participants' commitment to PA. For example, when a person is unable to see and participate in PA with friends and family members who were previously part of their regular PA routine, adults 50 yrs and older may no longer feel committed to the other person they were active with and thus may be less committed to participating in PA.[32] However, if social isolation had impacted participants' PA participation and associated commitment to PA, then one would have expected the IPAB items "lack of emotional support" or "not having other people to be physically active with" to be significantly associated with a reduction in PA during COVID-19, which they were not.

Even with these limitations in mind, this study brings forth important findings among middle-aged and older adults' regarding barriers associated with a reduction in PA participation during COVID-19. We recommend that healthcare providers and exercise experts ask adults 50 yrs and older about their PA levels and potential barriers impacting their ability to participate in PA during COVID-19.

CONCLUSIONS

Among adults 50 yrs and older, 45% report a reduction in PA participation during COVID-19. After adjusting for demographics and health conditions, lacking access to workout places, feeling too anxious to be physically active, and difficulty with committing to PA increased the odds of participating in less PA during COVID-19 than the months before the pandemic. On the other hand, having at least a college education, self-identifying a heart- or lung-associated diagnosis that impacts PA, and having a 12-mo retrospective history of falling were protective for maintaining PA during COVID-19. These findings can help healthcare providers and exercise experts initiate a conversation with patients 50 yrs and older who have experienced a reduction in PA levels during COVID-19 when compared with pre–COVID-19 PA participation levels.

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