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A Comparison of the Aerobic Capacity Wellness of Female and Male Physical Therapist Members of the American Physical Therapy Association

Sharon Fair, PT, PsyD, PhD

University of St. Augustine for Health Sciences

904-826-0084 ext 264

University e-mail: sfair@usa.edu

ABSTRACT

Background and Purpose. Since gender is a determinant of Aerobic Capacity Wellness (ACW) and physical therapy (PT) is a female-dominated profession, the purpose of this study was to investigate the ACW of a sample of physical therapists (PTs) and compare the results according to gender. **Subjects**. Participants were 146 (65.07% female, 34.93% male) volunteers from a random sample of PT members of the APTA. **Methods**. The Physical Fitness Wellness Survey (FWS) was used to assess the ACW of the subjects. Analyses included descriptive, nonparametric, and parametric statistics of the subjects' ACW. **Results**. As determined by the FWS, 27.4% of the female PTs and 19.6% of the male PTs were found to have a satisfactory level of ACW. While the "average" female respondent engaged in AC exercise slightly more than three times per week (i.e., 3.19 ± 1.99), the "average" male respondent engaged in AC exercise slightly less than three times per week (i.e., 2.96 ± 1.84). **Discussion and Conclusion**. Both female and male PTs are "unwell" in terms of ACW and therefore mirror the typical U.S. American rather than other groups of health care professionals. In contrast to U.S. American females, who possess less ACW than their male counterparts, the females in this study did not. As PTs can enhance patient outcomes by integrating wellness into clinical practice and are wellness role models, PTs should possess a proficiency in wellness and exhibit a high level of personal wellness, particularly fitness wellness.

Key Words: Aerobic Capacity, Gender, Physical Therapy, Physical Therapist, Role Model, Wellness

INTRODUCTION

Since gender is a determinant of wellness[1,2] and physical therapy (PT) has historically been,[3] and continues to be,[4] a female-dominated profession, the goal of this research series is to investigate the wellness of physical therapists (PTs) and PT students and to compare the results according to gender. While the initial study in this series compared the wellness of female and male PT students,[5] the remaining endeavors will focus on PTs.

Wellness is being progressively embraced by the American Physical Therapy Association (APTA) and the PT profession.[6-10] Of the dimensions of wellness, the PT profession emphasizes physical fitness,[6,8,11] which consists of aerobic capacity, muscular fitness, flexibility, and body composition.[12,13] While it is widely acknowledged that PTs can enhance patient outcomes by integrating wellness into clinical practice,[14-20] it is not known if the fitness level of PTs (or any health care practitioner) has a direct impact on their ability to enhance the wellness of their patients. Nonetheless, the fitness level of PTs does affect their status as a wellness role model; and PTs,[5,21] like physicians,[22] chiropractors,[23] nurses,[24-27] psychologists,[28] and counselors,[29] are wellness role models.

Since a goal of the APTA is related to PTs as "exercise experts,"[6(Goal 8)] PTs are wellness role models,[5,21] gender is a determinant of wellness,[2,3] and PT is a female-dominated profession,[4] the purpose of this study was to explore the aerobic capacity wellness (ACW) of PT members of the APTA and compare the results according to gender. The first hypothesis of this study was that at least 50% of both the female members of the APTA (Fs) and the male members of the APTA (Ms) would score a satisfactory level of ACW. This hypothesis was based upon research that found that at least 50% of various health care practitioners score a satisfactory level of ACW,[30-32] The second hypothesis of this study was the Ms would score significantly higher in

ACW than the Fs. This hypothesis was based upon research that indicates that males report more exercise than females.[33-37]

METHODS

Institutional Review Board Approval

The Institutional Review Board of Capella University approved this investigation.

Procedure

The survey method was utilized to assess ACW. While health and other states of being, such as maximal oxygen consumption (VO_2 max) and muscular strength, can be directly measured in a clinical setting, wellness is an active process that consists of habits and practices.[5,38] Since the observation of habitual fitness behaviors is cumbersome and costly, self-report is an economical option to assess fitness wellness. Indeed, the United States government relies upon self-report to assess the fitness wellness of Americans.[37,39] The potential subjects were contacted by mail and provided with a cover letter, the survey, two copies of an informed consent, and a pre-addressed and pre-stamped return envelope.

Subjects

The potential subjects in the study consisted of a random sample of 400 PT members of the APTA, which was secured from the APTA List Serve. The exclusion criteria were those respondents that: (a) failed to complete a duly signed informed consent or survey; (b) indicated that they were equal to or greater than 60 years of age; or (c) indicated that they have a medical condition that limited their ability to engage in exercise program. The rationale for excluding PTs equal to and above the age of 60 was based on research that indicated they are more likely to be obese and less likely to exercise than younger people.[37]

Instrumentation

The survey that was utilized in this study was the Physical Fitness Wellness Survey (FWS).[40]

The FWS is a self-report instrument that asks respondents to report on their commitment to performing activities that promote fitness and detail their recent physical activity, e.g., indicate the number of days, within the past seven days, they engaged in at least 30 minutes of moderate intensity aerobic exercise (i.e., between 55 percent and 69 percent of maximum heart rate). Those respondents that indicate that they engage at least 30 minutes of moderate intensity exercise at least five days per week meet the threshold of the U.S. Department of Health and Human Service,[39] the guideline upon which the FWS was based.[40] A triangulation approach consisting of content validity,[41,42] process validity,[41] and construct validity[41,42] was used to provide evidence for the validity of the FWS.[40] The purpose of the FWS is not to attempt to measure ongoing exercise habits in a longitudinal fashion, but to capture a "snap shot" of the respondents in a cross-sectional fashion.

Data Analysis of the Aerobic Capacity Wellness of the Subjects

Aerobic Capacity Wellness (ACW) was determined by interpreting the responses to the survey items related to ACW. Participants that indicated they have at least a moderate level of commitment to ACW and indicated that they performed at least 30 minutes of moderate intensity aerobic exercise at least five days during the past week (i.e., the guidelines of the U.S. Department of Health and Human Service[39]) were determined to possess a satisfactory level of ACW. The results of the Fs, Ms, and PTs as a whole were quantitatively analyzed. The results of the Fs were compared to the results of the Ms. Parametric data was analyzed with the student *t*-test, with a significance level of $p < .05$.

RESULTS

Subject Data

Of the 400 prospective subjects, 154 responded, indicating a response rate of 38.50%. As four of the respondents were excluded from the study because they reported their age was greater than

60 and four of the respondents were excluded because they indicated that they had a medical condition that limited their ability to exercise and or their dietary choices, the number of subjects in the study was 146.

Of the 146 subjects, 65.07% (95) indicated they were female and 34.93% (51) indicated they were male. Two percent (three) subjects indicated they were of African descent, 2.7% (four) reported they were of Asian descent, 0.07% (one) reported he was Hispanic, 0.7% (one) reported he was West Indian, and 0.07% (one) reported he was a mixture of four nationalities. The remainder of the subjects, or 93.2% (137), reported they were Caucasian. The mean age was 40.07 (± 9.94) and the median age was 40. The minimum age was 24 years and the maximum age was 59 years. One subject reported smoking five to eight cigarettes each day; one reported use of smokeless tobacco; and the remainder (144 or 98.6%) denied the use of tobacco. Alcohol use was not assessed. See Table 1.

The Aerobic Capacity Self-Wellness of the Subjects

The mean ACW raw score of the Fs was 3.189 (± 1.986) days of aerobic capacity exercise per week and the mean ACW raw score of the Ms was 2.961 (± 1.843) days of aerobic capacity exercise per week. In other words, the average female in the study sample engaged in at least 30 minutes of at least moderate intensity aerobic exercise slightly more than three days per week, while the average male in the study sample engaged in that amount of exercise slightly less than three days per week. See Figure 1.

As determined by the FWS, 24.66% (36 of the 146) of the subjects were found to have a satisfactory level of ACW. A comparison of the genders revealed that 27.37% (or 26 out of 95) of the Fs had a satisfactory level of ACW and 19.60% (10 out of 51) of the Ms had a satisfactory level of ACW. See Figure 2. Using the unpaired student *t*-test to analyze the raw data between

the Fs and the Ms, the p level was found to be 0.488, which indicates that the Fs and Ms were not significantly different.

DISCUSSION

The response rate of 38.5% was considered adequate since the typical response rate for paper surveys is a mere 22%.[43,44] The composition of the subject pool was considered representative of the proposed population since the demographic composition of the respondents was very similar to the demographic composition of the PTs of the APTA. For example, the subject pool consisted of 65% females and 35% males, and the PT membership of the APTA was 65.5% female and 34.5% male.[4] Moreover, while the subject pool was 93.2% Caucasian, 2% African descent, 2.7% Asian descent, 0.7% Hispanic descent, and 1.4% other; the PT membership of the APTA was 88.8% Caucasian, 1.9% African American, 4.9% Asian or Pacific Islander, 2.4% Hispanic or Latino, and 2.1% other.[44] Finally, the mean age of the subject pool was 40.07 (± 9.94) and the mean age of the PT members of the APTA was 41.8 years.[45]

The hypothesis that at least 50% of both Ms and Fs would score a satisfactory level of ACW was not supported. The hypothesis that the Ms would possess a higher level of ACW than the Fs was not supported. A primary finding of this study, therefore, is that the female and male PT members of the APTA are no more "well," in terms of ACW, than the typical United States American (hereinafter referred to as American), and possess less ACW than other groups of health care professionals. This conclusion is based upon the results of the current study and the comparison of these results to research that describes the ACW of other groups. In terms of the ACW of the study sample, about one-quarter (i.e., 24.6%) of PT members of the APTA, slightly more than one-quarter (i.e., 27.37%) of the female PT members of the APTA, and about one-fifth (i.e., 19.60%) of the male PT members of the APTA engaged in 30 minutes of moderate intensity aerobic exercise on at least five days during a given week. Similarly, approximately

25% of adults in South Carolina met this guideline.[43] In contrast, Burns[44] found that 58% of nurse practitioners engaged in at least 30 minutes of moderate intensity aerobic exercise at least five times per week. Dinger and colleagues[45] reported that approximately 93% of certified health education specialists (CHESs) participated in "regular, vigorous physical activities," but did not assess particulars. Although certified athletic trainers (ATCs) worked longer than a typical work week (i.e., 56.6 hours), Schulman[46] found they spent about 15.17 hours per week exercising.

The second principal finding of this study is that the Fs were not found to possess less ACW than the Ms. While it is well recognized that men possess a higher VO_2 max than women,[13,51] and men report more exercise than women,[33-37] this is the first study that has examined gender differences in the exercise habits of a specialized group of health care practitioners. While there are fitness wellness gender differences in American adults, [33-37] the results of this study suggest that there are no fitness wellness gender differences in PT members of the APTA.

According to the National Association for Sport and Physical Education,[52] physical educators should possess good physical fitness and model appropriate physical activity behavior. Likewise, PTs should lead by example in the area of fitness wellness.[5] A comment from a participant in the current study stated the charge clearly: "I believe it is a responsibility of physical therapists to set the example of fitness for patients and [the] community." Unfortunately, the PT members of the APTA do not appear to be strong physical activity role models. In fact, the results of the current study suggest that the PT members of the APTA are poor fitness wellness role models. A comment from a participant in the current survey captured the paradox: "I can appreciate how much I neglect my own fitness wellness as compared to my expected commitment from my patients." Comments from two other subjects, however, indicate

that some PTs recognize and appreciate their role as fitness role models. One subject shared, "I enjoy working out and being a good example for my patients/clients." The other subject wrote, "As a PT, I definitely want to practice what I preach to my patients."

Physical therapists that are not committed to fitness wellness and do not meet the exercise guidelines of the U.S. Department of Health and Human Services[39] are not poised to assume a leadership role in the fitness and wellness arena. If, indeed, the ACW of PT members of the APTA is not satisfactory, they may be viewed as unsatisfactory fitness role models. Moreover, their ability – both directly and indirectly - to enhance the wellness of their patients may be impaired.

LIMITATIONS

There were several limitations related to this study. The first limitation was that the population consisted of PT members of the APTA, rather than all PTs, and the response rate was less than 100%. Accordingly, the findings can only be cautiously generalized to the PT members of the APTA and should not be generalized to PTs that are not members of the APTA. The second limitation is that a survey (i.e., the FWS) was used to assess ACW. While a triangulation approach was used to validate the survey, the reliability of the survey has not been determined.[40]

CONCLUSION

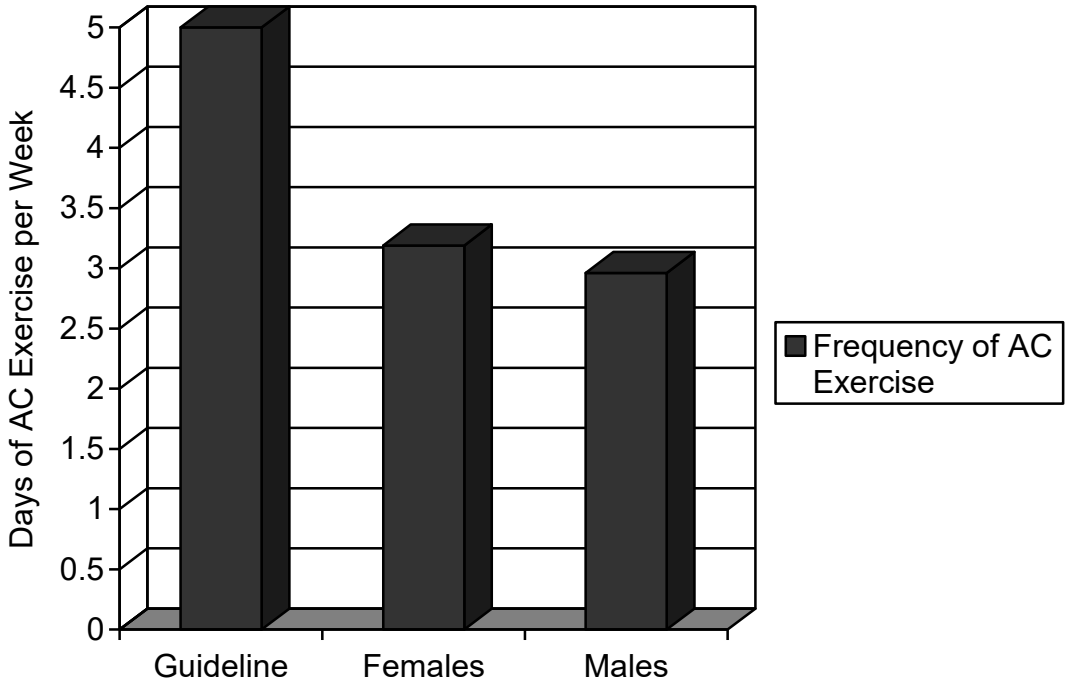
Of the PT members of the APTA that participated in this study, slightly more than one-quarter of the females and about one-fifth of the males reported that they met the AC exercise guidelines advocated by the U.S. Department of Health and Human Services.[39] While the "average" female subject in this study exercised slightly more than three times per week, the "average" male in this study exercised slightly less than three times per week. These findings suggest that both the female and male members of the APTA are deficient in their ACW, that there is no significant difference in ACW of the female and male members of the APTA, and that a majority of both

the Fs and the Ms need to enhance their ACW. Since PTs can enhance patient outcomes by integrating wellness into clinical practice,[14-20] and are wellness role models,[5,21] and the role of wellness in PT practice continues to flourish,[6,8,10] Similar to other health care professionals,[52] the APTA should advocate that PTs lead by example in the area of fitness wellness. Physical therapists should strive to be universally recognized as the "fitness wellness practitioners of choice" and the APTA should declare and support this goal.

Table 1. Characteristics of the Subjects

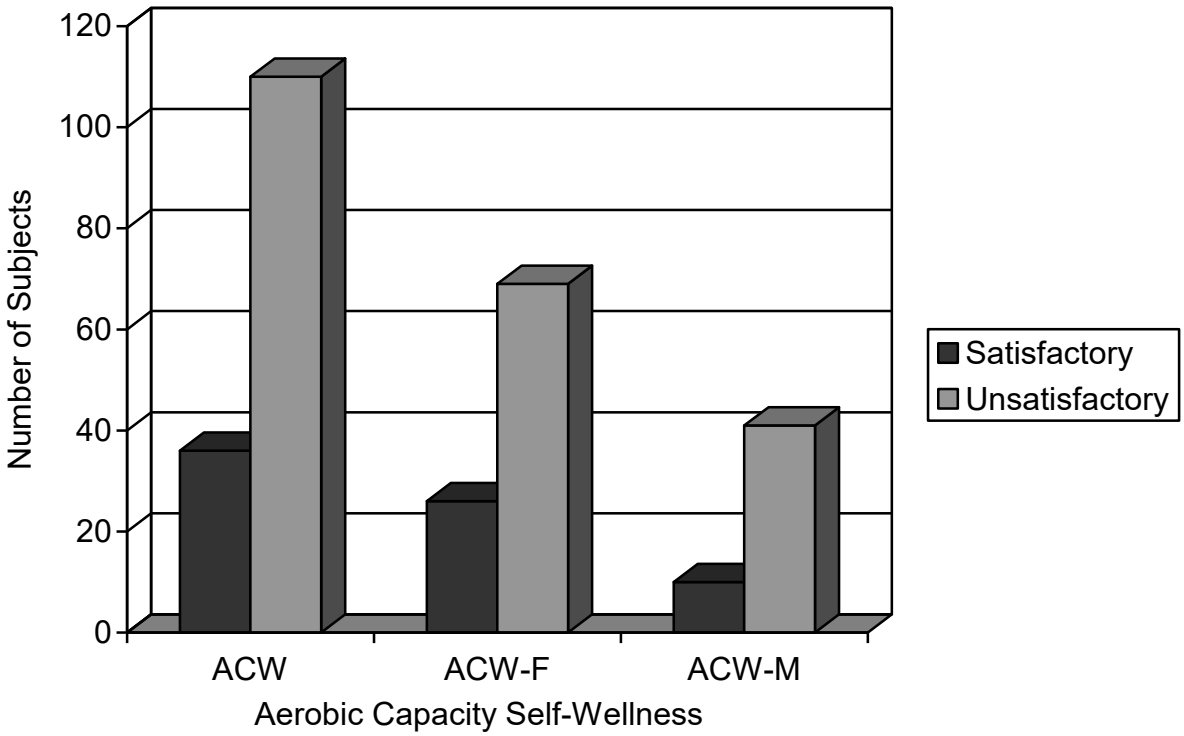
Gender (n=146)	Female = 95 (65 percent)	Male = 51 (35 percent)
Race (n=146)	Caucasian = 137 (93.2 percent)	Non-Caucasian = 10 (6.8 percent)
Age (n=146)	Mean = 40.07 years (± 9.94)	Median = 40 years
Tobacco Use (n=146)	Yes = 2 (1.3 percent)	No = 144 (98.6 percent)

Figure 1. Aerobic Capacity Exercise: The Recommended Frequency; Frequency for Female PT members of the APTA; Frequency for Male PT members of the APTA



Note: “AC” refers to aerobic capacity; “PT” refers to physical therapist; “APTA” refers to the American Physical Therapy Association; “Guideline” refers to the recommended guideline per the U.S. Department of Health and Human Resources (i.e., 5 times per week)

Figure 2. The Aerobic Capacity Self-Wellness of the PT Members of the APTA



Note: “ACW” refers to the aerobic capacity self-wellness (ACW) of both the female and the male subjects; “ACW-F” refers to the ACW of the females; “ACW-M” refers to the ACW of the males.

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