

### Motivational Characteristics And Fulfillment Of Psychological Needs Among Physically Active Undergraduate Students

Danny James McMillian, Rohan Cobb-Ozanne, Kayla Withers. *University of Puget Sound, Tacoma, WA.* (Sponsor: Gary McCall, FACSM)

Despite widespread public information confirming the role of physical activity (PA) in maintaining overall physical health, rates of sedentary behavior have increased over the last two decades. Analysis of individuals that maintain recommended levels of PA might inform approaches to reducing sedentarism.

**PURPOSE:** Identify and analyze how motivational characteristics, fulfillment of psychological needs, and individual experiences/beliefs influence physical activity.

**METHODS:** Undergraduate students from the University of Puget Sound between the ages of 18-24, were recruited using nominated sampling and a public advertising campaign. Participants (3 females, 2 males) met International Physical Activity Questionnaire scores defining moderate-vigorous physical activity. The Motives for Physical Activities Measure - Revised (MPAM-R) was used to assess motivational characteristics. The Basic Psychological Need Satisfaction and Frustration Scale - General Measure was used to assess fulfillment of psychological needs. In-person, semi-structured interviews were recorded, transcribed, and independently coded for relevant themes.

**RESULTS:** Qualitative analysis showed participants expressed higher life satisfaction (41) than frustration (19). Collectively, statements that expressed motivation were most common for competence (60), relatedness (35), autonomy (34) and interest/enjoyment (34). For the MPAM-R, a 7-point scale, average results were as follows: interest/enjoyment = 6.2, competence = 6.0, fitness = 6.0, appearance = 5.1, social = 3.9. Psychological satisfaction was greater than frustration for each of the three psychological needs defined by SDT with a large effect size for each (Autonomy  $n = 20$ ,  $p = .05$ ,  $z = -3.89$ ,  $r = .87$ ; Competence  $n = 20$ ,  $p = .05$ ,  $z = -4.0$ ,  $r = .89$ ; Relatedness  $n = 20$ ,  $p = .05$ ,  $z = -3.90$ ,  $r = .87$ ).

**CONCLUSIONS:** In addition to the well-established health benefits of PA, clinicians promoting PA within this group should consider highlighting the tendency toward greater psychological satisfaction as well. Motivational factors influencing PA varied greatly among participants, but stemmed most strongly from competence, followed by relatedness, interest, and autonomy.

### Primary Care Clinicians' Use And Perceptions Of The Physical Activity Vital Sign

Matthew Usevitch<sup>1</sup>, Timothy Walker<sup>2</sup>. <sup>1</sup>Baylor College of Medicine, Houston, TX. <sup>2</sup>University of Texas Health Science Center at Houston, Houston, TX.

Integrating the Physical Activity Vital Sign (PAVS) into routine clinical care is recommended by both the American College of Sports Medicine and National Academy of Science, Engineering, and Medicine. There is a critical need for research in how to best implement the PAVS in a primary care setting. Understanding what behavioral factors associate with primary care clinicians' perceptions and use of the PAVS will help support its implementation.

**PURPOSE:** To examine primary care clinicians' use of the PAVS and perceptions of its appropriateness, then examine which theoretical behavioral factors associate with those two outcomes.

**METHODS:** We conducted a cross-sectional study of primary care clinicians in Texas, USA. We distributed an electronic questionnaire including measures of current PAVS use, perceived appropriateness of the PAVS, theoretical behavioral factors (knowledge, attitudes, outcome expectations, and perceived barriers), and possible confounders (age, gender, experience, specialty, weekly physical activity). We used Pearson correlations to examine associations. We used a logistic regression model to examine associations between behavioral factors and PAVS use and a quantile regression model to understand associations between behavioral factors and perceptions of appropriateness.

**RESULTS:** 93 clinicians completed the entire questionnaire. Twenty five percent ( $n=23$ ) of respondents reported using the PAVS. Clinicians' use of the PAVS correlated with knowledge and perceptions of appropriateness, and perceptions of appropriateness correlated with all behavioral factors as well as years of experience. When controlling for other variables, knowledge was positively associated with current PAVS use (OR = 1.29, 95% CI [1.07, 1.54]), and knowledge ( $b=0.26$ ,  $p<0.001$ ) and outcome expectations ( $b=0.36$ ,  $p<0.001$ ) were positively associated with perceptions of PAVS appropriateness. No other associations reached statistical significance in both models.

**CONCLUSIONS:** Knowledge and outcome expectations associate with primary care clinicians' perceptions of appropriateness of the PAVS, and knowledge associates with reported use of the PAVS, suggesting that implementation efforts should include educating clinicians about the PAVS and its benefits.

### An Exercise Prescription Algorithm For Clinicians And Patients With Cardiovascular Disease Risk Factors

SHIQI CHEN<sup>1</sup>, Yin Wu<sup>2</sup>, Justin Kennedy<sup>3</sup>, Gregory Panza<sup>4</sup>, Margaux Guidry<sup>5</sup>, Kathryn Leelman<sup>1</sup>, Ameen Parks<sup>1</sup>, Kangmin Nam<sup>1</sup>, Linda S. Pescatello, FACSM<sup>1</sup>. <sup>1</sup>University of Connecticut, Storrs, CT. <sup>2</sup>Hartford Hospital, Hartford, CT. <sup>3</sup>Sonalysts, Inc., Waterford, CT. <sup>4</sup>Hartford HealthCare Heart and Vascular Institute, Hartford, CT. <sup>5</sup>Servier Pharmaceuticals, Boston, MA. (Sponsor: Linda Pescatello, FACSM)

**BACKGROUND:** Half of US adults have  $\geq 1$  cardiovascular disease (CVD) risk factors. Exercise is first-line lifestyle therapy to prevent and treat CVD. We developed the *Prioritize Personalize Prescribe Exercise* algorithm (P3-EX), an evidence-based tool clinicians can use to prescribe exercise for patients with CVD risk factors.

**PURPOSE:** To conduct a feasibility study of user satisfaction and usability of P3-EX as an exercise prescription (ExRx) tool among healthcare providers.

**METHODS:** Clinicians enter information on the patient's medical history and CVD risk factors into P3-EX. P3-EX scores the CVD risk factor with the greatest risk and produces an ExRx for the prioritized CVD risk factor. We recruited physicians ( $N=36$ ), nurses ( $N=59$ ), and allied health professionals ( $N=223$ ) who recommend exercise to patients through professional society meetings, presentations, and newsletters and investigator networks. Participants completed a timed case study of a patient with CVD risk factors using P3-EX on a templated website. They then completed an adapted version of the Mobile Application Rating Scale, with responses

ranging from 5 completely agree to 1 completely disagree, to evaluate the ease of use, system information arrangement, and usefulness of P3-EX. Descriptive statistics determined the % response, time spent using P3-EX, and ExRx produced.

**RESULTS:** Of the 318 recruited participants, 127 completed the study (physicians N=27, nurses N=22, allied health professionals N=78). Of these, 86.9% agreed using P3-EX will make their patients healthier; 86.6% agreed feedback is immediate and understandable; 81.4% agreed P3-EX is intuitive, producing high-quality, evidenced-based, individualized ExRx; 83.5% are generally satisfied with P3-EX; 81.3% would recommend P3-EX to colleagues; and 79.2% agreed P3-EX is safe. Yet, 34.4% agreed fault tolerance could be improved. Most participants (88.8%) produced an ExRx for the same prioritized CVD risk factor. The average time spent using P3-EX was 4.6 min.

**CONCLUSION:** We found healthcare providers are satisfied with P3-EX and found it a usable ExRx tool for patients with CVD risk factors. Our results are promising because clinicians lack the time, confidence, and knowledge to recommend exercise to patients. P3-EX appears to be a potential solution to this problem.

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### Effects Of Resistance Training On Sarcopenia-related Quality Of Life

Quinten W. Pigg, Holly H. Kendall, Lindsay E. Kipp, Joni A. Mettler. *Texas State University, San Marcos, TX.* (Sponsor: John Walker, FACSM)

Older adults are at risk for sarcopenia, which can lead to reduced physical activity and quality of life (QoL).

**PURPOSE:** To determine the effects of aging and sedentary behavior on risk for sarcopenia, we compared resistance trained and nonresistance trained younger and older adults on two sarcopenia-related outcomes: QoL and physical activity level (PA).

**METHODS:** Younger ( $23.8 \pm 0.4$  years) and older ( $68.5 \pm 1.2$  years) adults ( $n=76$ ) were categorized into 4 groups: young trained (YT), young not trained (YNT), old trained (OT), and old not trained (ONT). Resistance trained, trained  $\geq 2X$  per week for  $\geq 6$  months. The Sarcopenia and Quality of Life Questionnaire (SarQoL) assessed total health-related QoL, and QoL dimensions: physical and mental health (PMH), and activities of daily living (ADLs) (e.g., difficulty, pain during physical effort); scores range from 0 (worst) to 100 (best). The Leisure Time Exercise Questionnaire (LTEQ) provided a score for PA units, based on PA in the past week (higher scores indicate more PA). ANOVAs compared group differences,  $p \leq 0.05$ . Data are reported as mean  $\pm$  SE.

**RESULTS:** Group differences emerged for all variables ( $p \leq 0.05$ ). For total QoL, YT ( $94.5 \pm 1.4$ ) was higher than all other groups (YNT:  $86.4 \pm 1.6$ ,  $p < 0.001$ ; OT:  $87.1 \pm 1.6$ ,  $p = 0.001$ ; ONT:  $81.9 \pm 1.4$ ,  $p < 0.001$ ). OT ( $p = 0.017$ ) and YNT ( $p = 0.039$ ) were higher than ONT. For PMH, YT ( $94.2 \pm 2.4$ ) was higher than all groups (YNT:  $82.2 \pm 2.8$ ,  $p = 0.002$ ; OT:  $85.8 \pm 2.7$ ,  $p = 0.022$ ; ONT:  $77.9 \pm 2.4$ ,  $p < 0.001$ ). OT was higher than ONT ( $p = 0.035$ ). For ADLs, YT ( $95.4 \pm 1.7$ ) was higher than all groups (YNT:  $87.3 \pm 1.9$ ,  $p = 0.002$ ; OT:  $87.9 \pm 1.9$ ,  $p = 0.004$ ; ONT:  $84.7 \pm 1.7$ ,  $p < 0.001$ ). For all QoL variables, OT did not differ from YNT ( $p > 0.05$ ). For PA, YT ( $58.5 \pm 6.1$  AU) had the same activity level as OT ( $50.0 \pm 6.9$  AU,  $p = 0.356$ ). YT was significantly higher than YNT ( $31.1 \pm 7.3$  AU,  $p = 0.005$ ) and ONT ( $32.4 \pm 6.4$  AU,  $p = 0.004$ ). All other group comparisons were not different ( $p > 0.05$ ).

**CONCLUSION:** Trained older adults scored higher than nontrained older adults and were similar to younger adults on several variables, suggesting resistance training may be an effective modality to improve or maintain QoL with age. Funded by Texas American College of Sports Medicine Student Research Development Award to H. Kendall, J. Mettler, & L. Kipp and Thesis Fellowship Award to H. Kendall.

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## B-43 Health Equity: Other

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### Participation In Specific Leisure-time Physical Activities Among US Adults By Race/ethnicity: BRFSS- 2019

Eugene C. Fitzhugh<sup>1</sup>, Christiaan Abildso<sup>2</sup>, Lyndsey M. Hornbuckle-Lampkin, FACSM<sup>3</sup>. <sup>1</sup>University of Tennessee, Knoxville, TN. <sup>2</sup>West Virginia University, Morgantown, WV. <sup>3</sup>University of Tennessee, Knoxville, TN.

Comparisons of physical activity (PA) among adults in the US, including race/ethnic groups, has been limited to broad domains of PA. Within the leisure-time PA (LTPA) domain, identifying specific types of LTPA participation across race/ethnic groups may allow for the development of more culturally relevant interventions promoting PA.

**PURPOSE:** The purpose of this study was to compare US adults' participation in specific types of LTPA by race/ethnic groups.

**METHODS:** 2019 Behavior Risk Factor Surveillance System data from adults ( $N=396,261$ ) were analyzed. Respondents that indicated they engaged in any LTPA in the previous month could report up to two LTPAs they engaged in the most from 75 options, including "other." These were condensed to 13 categories using the Compendium of PAs. Age-adjusted prevalence of engaging in specific LTPAs, overarching PA categories, and meeting the PA guidelines were compared by race/ethnicity in 5 groups: non-Hispanic White (NHW), non-Hispanic Black (NHB), non-Hispanic other race, non-Hispanic multi-racial, and Hispanic. Proc Regress in SUDAAN was used to contrast differences of prevalences across race/ethnic groups.

**RESULTS:** The 10 most common LTPAs for US adults overall were walking (43.9%), running (11.6%), other PAs (9.2%), gardening (5.8%), bicycling (3.8%), yardwork (2.8%), household activities (2.6%), calisthenics (2.4%), yoga (2.2%), and biking indoors (2.2%). Compared to all other race/ethnic groups, NHB and Hispanic adults consistently had significantly lower prevalences across all of these LTPAs. NHB and Hispanic adults were also significantly less likely to meet the aerobic PA guidelines and report doing household-related and outdoor activities in their leisure time. Unique top-10 PAs for NHBs included basketball (#5; 3.2%) and aerobics (#9; 1.9%); while soccer (#7; 2.1%) was unique to Hispanics.

**CONCLUSIONS:** While there are more similarities than differences in LTPA, the notably lower rates of LTPA among NHBs and Hispanics may contribute to health disparities in these groups. To reduce these disparities, investigators developing PA interventions should consider which LTPA activities may or may not appeal to specific populations.

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### Stress And Metabolic Factors In Minoritized Communities: A First Analysis Of A Pilot Study