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## Feature Article

# Exercise habits of licensed nurses and nursing assistants: Are they meeting national guidelines?

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## A B S T R A C T

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Research shows licensed practical nurses and nursing assistants (NAs) have high rates of obesity and hypertension, potentially from limited engagement in physical activity (PA). Therefore, the purpose of this paper was to describe the self-reported exercise engagement, of licensed nurses (i.e., registered and licensed practical nurses) and NAs. We performed a secondary data analysis of two studies that used the Behavioral Risk Factor Surveillance System – PA questionnaire to assess PA levels. The sample consisted of 31 NAs and 40 licensed nurses. Our findings show 50 (56.9%) NAs and licensed nurses report they engage in enough exercise to meet national guidelines. Our sample reported engaging in more exercise than the general population. We suspect measurement biases as over half of our sample reported engaging in at least 300 min of exercise each week. The potential over-reporting could be due to the perception of their work since they do not have sedentary jobs.

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## Background

Although, physical activity (PA) can help prevent numerous chronic diseases, reduce all cause mortality up to 45%,<sup>1</sup> increase work productivity, reduce employee absenteeism and decrease employer health care spending,<sup>2–4</sup> many adults in the United States (US) do not regularly engage in PA.<sup>5</sup> However, most Americans are employed and spend at least 8 h at work.<sup>6</sup> Therefore, Healthy People 2020<sup>7</sup> along with the Institute of Medicine<sup>8</sup> and the Centers for Disease Control and Prevention<sup>6</sup> encourage worksites to offer programs that encourage and engage employees in PA.

Health care providers are one of the largest employee groups in the US<sup>9</sup> and high turnover rates, job strain, physically demanding work as well as the increasing life expectancy of patients<sup>10,11</sup> have created a demand for licensed nurses and nursing assistants (NAs).<sup>12</sup> Thus, it is important to keep these health professionals healthy and in the health care workforce. Unfortunately, these individuals often prematurely leave their jobs due to health reasons.<sup>13,14</sup>

Recent studies have begun to look at the health of health care workers<sup>15–17</sup> because of their large workforce, their work environment, and their impact on patients. Prior research has found licensed practical nurses and NAs have surprisingly high rates of obesity and hypertension.<sup>15–18</sup> However, it is unclear why health professionals experience obesity and hypertension at rates that are equally unhealthy and/or more unhealthy than the US population. Nursing assistants are more likely to have less education, make a lower wage, and be a member of a minority group than licensed nurses.<sup>19–21</sup> These factors have been shown to negatively influence exercise engagement.<sup>5</sup> Understanding the PA levels of these individuals is not only important from a public health prospective but physical inactivity can have implications for employers<sup>2</sup> as well as implications for how these individuals encourage patients to engage in PA.<sup>22</sup>

Therefore, the purpose of this paper was to describe the self-reported exercise engagement, defined as moderate or vigorous exercise lasting at least 10 min, of licensed nurses (i.e., licensed practical nurses and registered nurses) and NAs. These data will be valuable for future health promotion program development with this population. This paper also assesses if licensed nurses' and nursing assistants' exercise reports differ. We hypothesize that licensed nurses will engage in more exercise than NAs.

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## Methods

This study was a descriptive secondary data analysis using baseline data from two pilot intervention studies that measured self-reported exercise levels of licensed nurses and NAs. Exercise engagement was assessed by combining data from two pilot studies. The first study consisted of 47 participants of which 39 were NAs and eight were licensed nurses. These participants were minority female licensed nurses and NAs from two long-term care facilities in the Baltimore, Maryland metropolitan area.<sup>18</sup> The second study consisted of 33 licensed nurses<sup>23</sup> from a single acute care trauma unit in a tertiary care hospital in suburban Pennsylvania.<sup>23</sup> Partial baseline exercise data were available for 71 participants and complete exercise data were available for 65 participants. Therefore, the secondary data analysis presented in the paper includes the baseline exercise data of 71 licensed nurses and NAs. Both studies were approved by their organizations' institutional review board.<sup>18,23</sup>

Each study collected different demographic data with the exception of job title and age. Both studies used the Behavioral Risk Factor Surveillance System – Physical Activity questionnaire (BRFSS-PA)<sup>24</sup> to assess exercise frequency, intensity and duration. The measure includes seven-items and assesses moderate and vigorous PA in 10 min increments. The BRFSS-PA also asks participants how they spend the majority of their workday (e.g., sitting, walking). Prior research has shown the BRFSS-PA has sufficient evidence of test-retest reliability and construct validity.<sup>25</sup>

All data analysis was done using SPSS versions 17 & 19.<sup>26</sup> Descriptive statistics were used to assess frequency, intensity and duration of PA as well as demographics and how participants spent a majority of their workday. Using a standard formula, one minute of vigorous PA equals two minutes of moderate PA,<sup>27</sup> total weekly engagement in PA was calculated. Once weekly engagement of PA was calculated, participants were dichotomized into groups (e.g., ≥150 min a week of moderate PA or its equivalent per week) to determine if participants met weekly aerobic PA guidelines<sup>27</sup> and to what extent they reported exceeding weekly aerobic PA guidelines. Due to missing data, valid percent was reported; therefore, all percents will not equal 100. An independent *t*-test and chi-square analysis was used to assess the difference between licensed nurses and NAs exercise reports.

## Results

The mean age of licensed nurses was 39.10 (SD = 11.10) years old and NAs were 42.34 (SD = 12.84) years old. The sample consisted of 31 NAs and 40 licensed nurses (i.e., 34 registered nurses and six licensed practical nurses).

Out of the 65 participants that provided the necessary data to calculate weekly PA duration and intensity, 50 (76.9%) reported engaging in enough PA to meet national guidelines (Table 1). Five (7.6%) participants reported engaging in PA but at levels that did not meet PA guidelines (range 45–140 min/week). Seven (10%) participants denied engaging in any moderate PA and one (1.4%) participant reported she was unsure if she engaged in moderate PA. Thirty-one (45.6%) participants denied engaging in any vigorous PA, whereas, four (5.9%) participants reported they were unsure if they engaged in vigorous PA. Only five (7.7%) participants reported engaging in no PA.

More than half of participants ( $n = 32$ , 54.2%) reported engaging in more than 300 min (double the recommended guidelines) of moderate PA or its equivalent each week and of the same group 14 (23.7%) participants reported engaging in more than 840 min (14 h) of moderate PA or its equivalent each week.

**Table 1**  
Self-reported exercise habits of nursing assistants and licensed nurses ( $n = 71$ ).

	Nursing assistants ( $n = 31$ )	Licensed nurses <sup>b</sup> ( $n = 40$ )
Mean (SD)		
Average minutes spent engaging in PA <sup>a</sup> /week	886.09 (1374.75)	525.07 (464.92)
	N (%)	
Reported meeting national PA guidelines <sup>27</sup>	17 (60.7%)*	33 (89.2%)*
Reported engaging in at least 300 min of moderate level PA or its equivalent each week	13 (56.5%)	19 (52.8%)
Reported engaging in at least 840 min of moderate level PA or its equivalent each week	7 (30.4%)	7 (19.4%)
Denied engagement in any moderate or vigorous PA	4 (14.3%)	1 (2.7%)
Reported mostly sitting or standing at work	3 (11.5%)	6 (16.2%)
Reported mostly walking at work	15 (57.7%)	27 (73.0%)
Reported mostly physically demanding labor at work	6 (23.1%)	4 (10.8%)

\* $p \leq .05$ .

<sup>a</sup> PA = physical activity.

<sup>b</sup> Licensed practical nurses and registered nurses.

Licensed nurses reported meeting national PA guidelines significantly more than NAs ( $n = 33$ ,  $n = 17$ ,  $p = .022$ ). There was no difference in reporting of work related PA between the two groups.

## Discussion

Our findings show many NAs and licensed nurses report they engage in enough exercise to meet national guidelines. In fact, we found our sample reported engaging in more exercise than the general population. For example, 50 (76.9%) participants reported meeting exercise guidelines, whereas, nationally 51.6% of individuals reported meeting exercise guidelines.<sup>28</sup> We also found our sample denied physical inactivity less than the general population. Only six (8.6%) participants denied engaging in any exercise, whereas, in the general population 24% of individuals denied engaging in exercise.<sup>29</sup> The data supported our hypothesis that licensed nurses reported engaging in more exercise than NAs.

Prior research has shown, when measured objectively, typical adult engagement in daily exercise ranges from 6 to 22 min depending on age and race. Also, when objectively measured less than 5% of individuals engage in at least 150 min of moderate PA or its equivalent each week.<sup>30</sup> Additionally, one of the pilot studies,<sup>18</sup> used for this secondary data analysis, measured exercise objectively (using pedometers) and subjectively. For that sample, the correlation between the subjective amount of time in total PA engagement and the objective average daily steps and average daily engagement in aerobic exercise was  $r = -.011$ ,  $p = .957$  and  $r = -.011$ ,  $p = .965$ , respectively. This is generally lower than prior studies, which show small to moderate positive correlations between objective and subjective reports.<sup>31,32</sup> Also, in that same sample, despite 17 (60.7%) licensed nurses and NAs claiming to meet exercise guidelines, when objectively measured only one participant met exercise guidelines.<sup>18</sup> Other researchers have also found discrepancies between objective and subjective reports of exercise engagement.<sup>30,33</sup> This combined with the fact that over half of our sample reported engaging in at least 300 min of exercise each week cause us to suspect measurement biases in the BRFSS self-reported exercise engagement of our sample.

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