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Predictive roles of organizational and personal factors in work engagement among nurses

Original Article

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Abstract: **Objective:** To determine the work engagement levels of hospital nurses and the predictive roles that nurses' personal and organizational characteristics play.
Methods: A cross-sectional design was employed in this study, which included 549 nurses working in the Central Philippines. Nurses were selected through purposive sampling, and a self-report questionnaire outlining personal and organizational characteristics was employed. The Utrecht Work Engagement Scale (UWES) was applied to gather data about nurse engagement.
Results: The dedication score was the highest among the three dimensions of engagement while the vigor score was the lowest. Overall, Filipino nurses experienced an average level of work engagement. We observed significant relationships between a nurse's age, years of experience in nursing, years in their present unit, and their position at work and their levels of engagement, vigor, sense of dedication, and absorption. Hospital capacity was a negative predictor of vigor, dedication, absorption, and overall work engagement. Further, the type of nursing contract was a negative predictor of vigor and dedication. The type of hospital and the nurse's position were positive predictors of vigor, dedication, and absorption.
Conclusions: Filipino nurses were satisfactorily engaged at work. A number of nurses' personal and organizational characteristics play a predictive role in their work engagement. Thus, nursing administrators must support, develop, and implement activities and measures that engage nurses at work.

Keywords: *Filipino nurses • nurse personal factors • organizational factors • work engagement • work engagement predictors*

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1. Introduction

A nurse's role is indispensable in the realm of health care. The far-reaching impact of nurses on work and patient outcomes in the hospital setting is undeniable. Research reveals that engagement influences nursing practice environments, which in turn affect work output. Nurses are engaged when they feel recognized

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and involved in their organizations. In this context, nurses likely exhibit a positive attitude toward the organization and are enthusiastic about their work environment.[1]

Work engagement is defined as a positive work-related state of mind consisting of three significant dimensions: vigor, dedication, and absorption.[2] Vigor signifies mental vitality that allows individuals to be highly energetic at work; an employee displaying vigor endeavors to complete work even when faced with difficulties. Dedication entails being highly involved and connected to the job such that one's attitude toward work consists of a sense of enthusiasm, encouragement, and a perception of being meaningfully challenged. Absorption refers to being completely connected and gladly focused at work such that it becomes difficult to detach from one's job.[3] Under these circumstances, the efficacy and performance of the engaged worker are augmented and the employee is less likely to experience burnout. As the largest group in health care, nursing professionals face a demanding and stressful work environment. A steadfast commitment and dedication to their work—exemplified by engagement—is a means by which nurses can cope with these challenges.[4]

Research has continued to explore and demonstrate the impact of nurses' work engagement on work outcomes.[5–9] Understanding the factors that predict and drive work engagement has been essential in developing meaningful interventions and programs. Previous studies have identified some predictors of work engagement. For instance, Sohrabizadeh and Sayfouri[10] found that managerial and organizational support, rewards and acknowledgment, and work attributes can predict levels of work engagement, eventually leading to a higher level of job satisfaction, a sense of belonging to the institution, quality patient care, and improved work experience.

Educational preparation, age, and the number of work hours per week are significantly associated with the degree of work engagement.[11] Lepistö et al.[12] indicated that years of nursing experience, female gender, generation, and time spent weekly in managerial tasks are significantly correlated to some dimensions of work engagement. Wan et al.[13] observed that nurse job characteristics and work environments are largely significant predictors of work engagement. The authors further suggested that nurse managers must provide the means to shape or hone these factors to enhance the quality of patient care and work outcomes. More recent empirical evidence supports that occupational tenure predicts nurse work engagement levels, indicating that those with longer professional practice gain confidence in rendering care and services.[14]

The job demands–resources (JD–R) model has been used as a framework in several foreign studies on work engagement. The model posits that job resources such as work and personal or individual resources significantly affect work engagement.[15] Specifically, these job resources include physical, organizational, and social factors that play a motivational role in professional and personal development and work goal achievement.[16] The model also assumes that job resources protect against the toll—such as heavy workloads, work aggression, or burnout—associated with job demands. Hence, as job resources heavily impact staff work engagement, they are the main predictors of work engagement.[17] The JD–R model flexibly allows the incorporation of all types of work characteristics and is therefore explicitly applicable in many specific work environments.[3] Thus, we adopted the model in this study, seeking to determine the model's applicability in the nursing arena—especially for nurses working in a hospital setting.

Nursing is the largest profession in health care in the Philippines. Health institutions such as hospitals remain the most common workplace for nurses. A recent review on the country's health care system revealed that >90,000 nurses work in health care institutions.[18] Nursing was perceived to be a stressful profession[19] while hospitals—where most nurses are employed—were deemed one of the most stressful and demanding workplaces. In such a challenging health care environment, nurses tend to experience job dissatisfaction and eventually consider resigning. Retention of the nursing workforce—especially its highly trained segment—is a constant challenge faced by nurse and hospital managers in the Philippines. In addition, the rampant decades-long migration of Filipino nurses abroad[20] has been aggravated by factors related to their work environment and outcomes.[21,22] These factors have caused negative consequences in the country's health care system, especially in the distribution and production of health human resources. Therefore, addressing nurse retention and assisting nurses in engaging in their work environment are crucial. Studying Filipino nurse work engagement and its predictors is timely, as study results may help nurse and hospital administrators identify strategies and procedures to boost engagement of staff nurses at work and adopt predictors of engagement. Examining work engagement may be common in foreign settings, but the concept is rarely investigated with Filipino nurses. Ours is one of the preliminary studies of its kind in the local setting. This study investigated the work engagement levels of hospital nurses and the role that nurses' personal and organizational characteristics play in predicting engagement.

2. Methods

2.1. Aims

This study aimed to determine the work engagement levels of hospital nurses and the role that nurses' personal and organizational characteristics play in predicting engagement.

2.2. Research design

The study employed a cross-sectional design and included survey data collected from June 2018 to December 2018.

2.3. Participants and settings

The study included 549 nurses from 14 hospitals in the Central Philippines. Hospitals included general, non-specialized, government, and private-owned hospitals; bed capacity was not specified.

Participants were selected through purposive sampling using the following inclusion criteria: (1) registered nurse in the country, (2) working as a hospital nurse for at least the last 3 months, (3) working in a private or government hospital, and (4) has agreed to participate in the study. Nurses whose job did not entail direct patient care were excluded.

2.4. Instruments

The characteristics of participants were collected according to (1) personal factors including age, gender, years in nursing, years in their present unit, marital status, highest education attained, position, type of contract, and shift length and (2) organizational factors including hospital type, hospital bed capacity, unit of assignment, and location.

Nurse work engagement was determined using the Utrecht Work Engagement Scale (UWES-17) developed by Schaufeli and Bakker.[23] The scale consists of 17 items categorized into three subscales: vigor (6 items), dedication (5 items), and absorption (6 items). Participants scored each item of the questionnaire using a 7-point Likert scale ranging from 0 (never) to 6 (always). Previous studies demonstrated good internal consistency using Cronbach's α ranging from 0.88 to 0.95.[24,25]

2.5. Data collection and analysis

We secured approval letters from hospital or medical center heads through nursing service department chiefs. Nurse supervisors and head nurses coordinated to select target participants. Informed consent was secured from each participant prior to data collection. Sufficient information was provided to participants regarding the purpose, potential benefits and risks, and possible harm arising from the study. After providing participants 24 h to complete the study questionnaire, researchers collected and inspected questionnaires for completeness and accuracy. The data were statistically analyzed using Statistical Package for the Social Sciences, version 23, software (IBM Corp., Armonk, NY, USA). Descriptive statistics included frequency counts, percentages, weighted arithmetic means, and standard deviations (SDs). Pearson *r*, *t* test, and one-way Analysis of Variance (ANOVA) were used to determine correlations between variables. Multiple linear regression analysis was applied to measure the impact of nurse characteristics on their work engagement. Significance level was set at <0.05.

2.6. Ethical considerations

Ethical clearance was secured from a local ethics board prior to study implementation (SSU-91018-09). Likewise, the hospitals' respective ethics boards approved conducting the study in their vicinities. Written informed consent was obtained from each participant prior to the survey. Voluntary participation was emphasized, and every researcher provided sufficient information about the study according to its objectives, purposes, possible benefits, and potential risks and harm. Confidentiality, anonymity, and privacy of participants were maintained throughout the study. The risk of harm from this study was associated with any potential breaches of confidentiality and the consequences of such breaches. Participants were informed that they could withdraw their participation at any time during the study and that all information collected from them would be discarded thereafter. Participants were not paid to contribute to the study, and no conflict of interest existed given researchers had no authority over participants. Coding was performed during tallying and analysis of the data, and researchers had exclusive access to raw data.

3. Results

A total of 549 registered nurses participated in this study. Participants' mean age was 29.80 years (SD = 7.80). Mean years in nursing was 6.75 years (SD = 6.37), and mean years in present unit was 3.55 years (SD = 4.51). The majority of nurses were female (78.7%), married (68.7%), holders of bachelor's degrees (91.1%), and worked as permanent (72.3%) nursing staff (86.9%) in hospitals located in urban areas (78.5%). The nurses who worked in private hospitals (59.2%) with bed

capacity 100 (42.8%) were assigned to medical wards (32.4%), surgical wards (16.4%), and intensive/critical care units (12.0%).

Table 1 presents the means and SDs for each subscale of work engagement. The means of the vigor, dedication, and absorption subscales were 3.70 (SD = 1.06), 4.16 (SD = 1.19), and 3.75 (SD = 1.08), respectively. The composite mean of work engagement was 3.85 (SD = 1.05). According to UWES-17 norm scores, our study indicated that nurses experienced an average level (i.e., "a few times a month") of vigor, dedication, absorption, and overall work engagement.

Table 2 presents the correlations between nurse characteristics and work engagement. We noted five nurse characteristics that positively correlated with overall job engagement and its three subscales (vigor, dedication, and absorption). Traits included nurses' age in years (r = 0.147, P = 0.001), years in the profession

Characteristics	*n*	Range	Minimum	Maximum	Mean	SD
Vigor	549	5.00	1.00	6.00	3.70	1.06
Dedication	549	5.00	1.00	6.00	4.16	1.19
Absorption	549	5.00	1.00	6.00	3.75	1.08
Total engagement	549	5.00	1.00	6.00	3.85	1.05
Valid n (listwise)	549					

Note: SD, standard deviation.

Table 1. Descriptive statistics of nurse work engagement.

Characteristics	Vigor	Dedication	Absorption	Overall job engagement
Gender				
Male	3.78 ± 1.11	4.12 ± 1.27	3.78 ± 1.16	3.88 ± 1.12
Female	3.68 ± 1.06	4.18 ± 1.18	3.75 ± 1.06	3.85 ± 1.03
t	0.855	0.457	0.269	0.235
P value	0.393	0.648	0.788	0.814
Age (years)				
r	0.171	0.112	0.133	0.147
P value	<0.001***	0.008**	0.002**	0.001**
Years in nursing				
r	0.165	0.107	0.149	0.149
P value	<0.001***	0.012*	<0.001***	<0.001***
Years on present unit				
r	0.113	0.069	0.090	0.096
P value	0.008**	0.105	0.035*	0.024*
Marital Status				
Unmarried	3.80 ± 1.14	4.21 ± 1.29	3.83 ± 1.15	3.94 ± 1.13
Married	3.66 ± 1.03	4.14 ± 1.15	3.73 ± 1.05	3.82 ± 1.01
t	1.477	0.676	1.093	1.154
P value	0.140	0.500	0.275	0.249
Work location				
Urban	3.68 ± 1.05	4.15 ± 1.19	3.73 ± 1.07	3.84 ± 1.04
Rural	3.78 ± 1.13	4.20 ± 1.22	3.87 ± 1.14	3.93 ± 1.10
t	0.915	0.346	1.204	0.879
P value	0.361	0.730	0.229	0.380
Highest education attained				
BSN	3.68 ± 1.05	4.14 ± 1.18	3.72 ± 1.07	3.83 ± 1.04
MA/MS/PhD	3.97 ± 1.19	4.42 ± 1.31	4.18 ± 1.15	4.18 ± 1.16

Continued

Table 2. Continued

Characteristics	Vigor	Dedication	Absorption	Overall job engagement
t	1.836	1.555	2.871	2.210
P value	0.067	0.120	0.004**	0.027*
Position				
Staff nurse	3.64 ± 1.07	4.10 ± 1.22	3.68 ± 1.08	3.79 ± 1.06
Manager nurse	4.10 ± 0.99	4.59 ± 0.96	4.27 ± 0.95	4.30 ± 0.90
t	3.415	3.860	4.372	4.380
P value	0.001**	<0.001***	<0.001***	<0.001***
Type of contract				
Permanent	3.77 ± 1.05	4.24 ± 1.20	3.81 ± 1.05	3.92 ± 1.04
Casual/part-time	3.52 ± 1.09	3.97 ± 1.17	3.62 ± 1.16	3.69 ± 1.07
t	2.437	2.349	1.786	2.339
P value	0.015*	0.019*	0.075	0.020*
Last shift length (h)				
<10	3.74 ± 0.99	4.23 ± 1.13	3.80 ± 1.03	3.91 ± 0.97
≥10	3.66 ± 1.15	4.08 ± 1.27	3.71 ± 1.14	3.81 ± 1.14
t	0.842	1.443	0.904	1.113
P value	0.400	0.149	0.366	0.266
Type of hospital				
Private	3.64 ± 1.06	4.14 ± 1.22	3.73 ± 1.09	3.82 ± 1.06
Public	3.80 ± 1.08	4.19 ± 1.16	3.81 ± 1.07	3.92 ± 1.04
t	1.704	0.458	0.831	1.067
P value	0.089	0.647	0.406	0.286
Hospital capacity				
≤100	3.91 ± 1.14	4.35 ± 1.30	3.93 ± 1.18	4.05 ± 1.15
101–250	3.59 ± 1.01	3.98 ± 1.11	3.67 ± 0.98	3.74 ± 0.97
>250	3.47 ± 0.94	4.11 ± 1.06	3.55 ± 1.00	3.69 ± 0.92
F	8.112	5.363	5.595	6.655
P value	<0.001***	0.005**	0.004**	0.001**
Unit of assignment				
Surgical ward	3.60 ± 1.22	3.86 ± 1.32	3.57 ± 1.11	3.66 ± 1.17
Medical ward	3.64 ± 1.08	4.07 ± 1.20	3.73 ± 1.11	3.80 ± 1.06
Gynecology/obstetric ward	3.83 ± 1.02	4.31 ± 1.06	3.87 ± 1.06	3.99 ± 0.98
Emergency unit	3.84 ± 0.89	4.33 ± 1.05	3.86 ± 0.93	3.99 ± 0.89
Intensive/critical care unit	3.84 ± 1.03	4.58 ± 1.10	3.91 ± 1.11	4.09 ± 1.01
Dialysis	4.10 ± 0.86	4.63 ± 0.78	4.35 ± 0.95	4.34 ± 0.79
Outpatient	4.26 ± 0.73	4.68 ± 1.08	4.42 ± 0.84	4.44 ± 0.83
Operating room	3.79 ± 0.72	4.05 ± 0.96	3.97 ± 0.81	3.93 ± 0.75
Pediatrics unit	3.39 ± 1.12	3.93 ± 1.31	3.43 ± 1.08	3.57 ± 1.11
F	1.822	3.055	2.506	2.507
P value	0.070	0.002**	0.011*	0.011*

Note: SD, standard deviation.
*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$.

Table 2. Correlations between nurse characteristics and work engagement (M ± SD).

(r = 0.149, P = 001), the number of years in the present unit (r = 0.096, P = 0.024), position occupied (t = 4.380, P = 0.001), and hospital bed capacity (F = 6.655, P = 0.001). Two nurse characteristics showed a significant positive correlation with overall job engagement. Only two of the engagement subscales displayed correlation: type of contract (t = 2.339, P = 0.020) and unit assignment (F = 2.507, P = 0.011). Moreover, nurses' educational attainment positively correlated with overall job engagement (t = 2.210, P = 0.027) and the absorption subscale (t = 2.871, P = 0.004).

Table 3 includes results of the multiple linear regression analysis to determine the predictors of work engagement. Independent variables included nurses' position, type of work contract, type of hospital, and hospital capacity. The dependent variable was nurse work engagement, which consisted of vigor, dedication, and absorption subscales. Statistically significant positive predictors of the vigor subscale included position (β = 0.400, P = 0.003) and type of hospital (β = 0.233, P = 0.019). Staff nurses working in private hospitals were more likely to report a high rating in the

Dependent variables	Independent variables	B	SE	95% CI	*P*-value
Vigor[a]	Constant (α)	3.465	0.251	2.972–3.959	<0.001
	Position (staff nurse = reference)				
	Manager nurse	0.400	0.134	0.136–0.663	0.003
	Type of work contract (permanent = reference)				
	Casual/part time	−0.282	0.109	−0.497 to −0.068	0.010
	Type of hospital (Private = reference)				
	Public	0.233	0.099	0.038–0.428	0.019
	Hospital capacity (100 = reference)				
	101–250	−0.289	0.100	−0.486 to −0.092	0.004
	>250	−0.380	0.124	−0.624 to −0.136	0.002
Dedication[b]	Constant (α)	4.152	0.260	3.640–4.663	<0.001
	Position (staff nurse = reference)				
	Manager nurse	0.431	0.152	0.133–0.729	0.005
	Type of contract (permanent = reference)				
	Casual/part time	−0.228	0.115	−0.455 to −0.002	0.048
	Hospital capacity (100 = reference)				
	101–250	−0.385	0.111	−0.604 to −0.166	0.001
	>250	−0.194	0.140	−0.469 to 0.081	0.166
Absorption[c]	Constant (α)	3.274	0.167	2.946–3.601	<0.001
	Position (staff nurse = reference)				
	Manager nurse	0.577	0.134	0.315–0.840	<0.001
	Hospital capacity (100 = reference)				
	101–250	−0.265	0.100	−0.461 to −0.068	0.008
	>0250	−0.351	0.126	−0.599 to −0.104	0.005
Overall work engagement[d]	Constant (α)	3.474	0.162	3.155–3.793	<0.001
	Position (staff nurse = reference)				
	Manager nurse	0.503	0.130	0.248–0.759	<0.001
	Hospital capacity (100 = reference)				
	101–250	−0.315	0.097	−0.507 to −0.124	0.001
	>250	−0.334	0.122	−0.575 to −0.094	0.007

Note: CI, confidence interval; SE, standard error.
[a]Adjusted R^2 = 5.5% (F = 7.420, P < 0.001).
[b]Adjusted R^2 = 3.8% (F = 6.452, P < 0.001).
[c]Adjusted R^2 = 4.7% (F = 10.063, P < 0.001).
[d]Adjusted R^2 = 4.5% (F = 9.532, P < 0.001).

Table 3. Multiple linear regression analysis for the predictors of work engagement

vigor subscale. Conversely, the type of work contract (β = −0.282, *P* = 0.010), hospital bed capacity of 101–250 (β = −0.289, *P* = 0.004), and hospitals with >250 beds (β = −0.380, *P* = 0.002) were significant negative predictors of vigor. Nurses with permanent employment status working in hospitals with higher patient capacity were more likely to report low scores in the vigor subscale. The statistically significant positive predictor of dedication was position (β = 0.431, *P* = 0.005), with staff nurses more likely to report high scores in the dedication subscale. The negative predictors of dedication were type of contract (β = −0.228, *P* = 0.048) and hospital bed capacity of 101–250 (β = −0.385, *P* = 0.001). Nurses with permanent employment status working in hospitals with bed capacity of 101–250 were more likely to report low scores in the dedication subscale. The positive predictor of absorption and overall work engagement was position (β = 0.577, *P* = <0.001; β = 0.503, *P* = <0.001, respectively), while negative predictors were hospital bed capacity of 101–250 (β = −0.265, *P* = 0.008; β = −0.315, *P* = 0.001) and bed capacity of >250 (β = −0.351, *P* = 0.005; β = −0.334, *P* = 0.007, respectively). This indicates that staff nurses were more likely to report high scores in the absorption subscale and overall work engagement while nurses working in hospitals with higher bed capacity were more likely to report low ratings of absorption and overall work engagement. However, the range of variation in scores in the models was narrow at only 3.8%–5.5%.

4. Discussion

This study identified work engagement and its predictors among hospital nurses in the Central Philippines. Generally, the findings indicate an average level of work engagement despite known work conditions in the country. A variety of nurses' personal and organizational characteristics were observed to play a significant role in predicting engagement at work.

The level of work engagement among nurses was satisfactory, indicating that nurses were engaged "at least a few times a month." This implied that despite the exodus of skilled Filipino nurses leaving to work abroad, the consequences of staff shortages in localities, and the various unfavorable factors in the practice environment,[21,22,26] nurses remaining in the Philippines—especially staff nurses in private hospitals who were engaged at some point in time—appeared to achieve significant meaning in their jobs, a level of involvement with patients, and satisfying experiences with collegial relationships. These nurses also possessed an identifiable level of professional competencies or were able to adapt positively to the challenges of their practice environment. However, results from our samples supported lower scores in work engagement compared to findings in previous studies.[12,27] The relatively low mean engagement score in our study may be related to the heavy workload, low compensation, or shortage of the nursing workforce. As underlined by study results, lower engagement may be especially prevalent among permanent nurses working in hospitals with higher bed capacity. However, some previous studies have revealed still lower mean scores than the current study;[13,28] findings from these studies were attributed to similar adverse work conditions. Among work engagement dimensions, dedication had the highest mean score while vigor had the lowest. Previous studies revealed similar results,[12,13] indicating that workers with high dedication but low vigor were associated with increased turnover intention.[29] However, dedication is believed to be the most valuable dimension of work engagement since it positively impacts workers and the work itself.[27] A worker who is dedicated values their work and views work-related adversities as challenges rather than problems.

A high level of work engagement among nurses promotes positive work outcomes while reducing negative work outcomes. Work engagement is affected by various factors. Our study revealed that personal factors such as age, years in nursing, years in current unit, and work position were significant predictors of overall work engagement and of the engagement dimensions of vigor, dedication, and absorption. Previous studies confirmed that the significant relationship of age to engagement was supported by the career development theory, which posits that nurses aged 25 years and younger are in the exploration stage of career development while those aged >40 years are in the stable stage and are therefore more likely to exhibit engagement and positive involvement in their organizations.[13,30] Further, previous study findings were consistent with our study with regard to the positive relationship between work engagement and years in nursing, years in current unit, and work position.[12,31] Work experience increases as age advances; nurses with more years of employment are able to leverage their experience and are more adept at fulfilling tasks responsibly, which in turn promotes engagement at work.[12] Hospital bed capacity and the type of work contract were negative predictors of engagement. Patient occupancy in Filipino hospitals—especially those in the public healthcare sector—commonly exceeds the ideal capacity of hospitals, leading to heavy workloads, burnout, and, seemingly, reduced work engagement among nurses. However, our findings supported that nurses in private hospitals exhibited positive work engagement, which may be attributable to a more ideal practice environment or a lighter workload compared with those working in government hospitals. In addition, nurses with more

work experience were more likely to acquire permanent employment status. Nurses with more work tenure are more inclined to perform tasks and clinical procedures professionally and confidently.[14] Gender, marital status, location of work, highest education attained, and length of last shift were not significant predictors of work engagement. These findings were contrary to previous studies demonstrating that gender,[12] education,[11] marital status,[27] and location of work were significant predictors.[32] However, Simpson[11] further underlined that work shift had no significant relationship to a nurse's work engagement, consistent with the present study.

Our findings established that the personal and organizational factors of hospital nurses influenced and predicted their level of work engagement and further demonstrated the applicability of the JD–R model, thus highlighting the significance of identifying and understanding the relationship between nurses' engagement at work, their work setting, and their personal characteristics is critical. Our results further underline that the work engagement of nurses is not driven exclusively by the nurses themselves but is influenced broadly by the organization, the practice environment, and the health care system. Hence, hospital and nursing administration must develop and implement strategies to promote nurses' personal and professional status and enhance supportive and cohesive interaction at work—thereby strengthening work engagement.

5. Conclusions

We investigated the predictive role of the personal and organizational characteristics of Filipino nurses in their level of work engagement. To our knowledge, this is the first study involving a large number of participants that explored work engagement and its predictors. Study findings demonstrated that Filipino nurses are satisfactorily engaged at work. The dedication score was the highest in the three dimensions of engagement. Significant relationships existed between a nurse's age, years of experience in nursing, years in their present unit, and their position and work engagement overall and the specific dimensions of vigor, dedication, and absorption. Hospital bed capacity was a negative predictor of vigor, dedication, absorption, and overall work engagement. Likewise, the type of nursing contract was a negative predictor of vigor and dedication.

Limitations

We recognize certain study limitations. First, as self-report questionnaires were used to collect data, results may have been influenced by bias. Second, the causality of the identified relationships cannot be fully established given the cross-sectional design of the study. Third, the purposive sampling technique used does not allow the generalizability or representativeness of the results. Nevertheless, our study contributes to the existing global literature and represents one of the preliminary studies of its kind in the Philippine settings.

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Ethical approval

The study protocol was approved by the Review Ethics Board of Samar State University (No. SSU-91018-09).

Conflicts of interest

All contributing authors declare no conflicts of interest

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