

# Cultivating Work Engagement and its Related Factors in Saudi Nurses: A Cross-Sectional Study



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## Abstract:

**Background:** Work engagement in nursing is pivotal for quality care and workforce stability. Under the healthcare goals of Vision 2030, understanding and improving the engagement of nurses is critical in Saudi Arabia. Yet, the current literature on the work engagement of Saudi nurses is scant, presenting a knowledge gap.

**Objective:** This study aimed to evaluate work engagement levels among Saudi nurses at King Abdulaziz Hospital, Jeddah, and identify key contributing factors.

**Methods:** A quantitative cross-sectional study design was utilized. A structured questionnaire assessing demographic information, work-related characteristics, and levels of work engagement using the Utrecht Work Engagement Scale was distributed electronically to 466 Saudi nurses at the hospital in November, 2019. Two hundred twenty-four nurses responded. Data were analyzed using descriptive statistics, Mann-Whitney, Kruskal-Wallis tests, and Spearman's correlation and linear regression analysis to examine relationships between engagement and factors.

**Results:** The mean engagement score was 66.16%, with absorption scoring the highest. Work engagement was significantly associated with years of experience, work position, and employment status. Engagement was higher in nurses with over 20 years of experience and managers. Income level approached a significant relationship with engagement. Demographic factors did not correlate significantly with engagement.

**Conclusion:** The study found that work engagement among Saudi nurses was significantly influenced by experience, work position, and employment status. These findings highlight the need for a strategic focus on career development and job satisfaction to boost engagement. Future research should explore interventions that enhance engagement and their effects on healthcare outcomes.

**Keywords:** Nurse engagement, Work-related factors, Saudi nurses, Employee well-being, Healthcare workforce, Healthcare goals.

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## 1. INTRODUCTION

Work engagement among healthcare professionals is fundamental in pursuing excellence within the healthcare system, particularly in nursing, a profession deeply rooted in compassion and humanity. Recent literature has illumi-

nated the crucial role of work engagement as a multi-dimensional construct encompassing vigor, dedication, and absorption, each of which significantly impacts the quality of patient care [1-3]. In Saudi Arabia, where the healthcare sector is under the microscope of Vision 2030's

transformative objectives, understanding and enhancing nurse engagement is beneficial and imperative for achieving national healthcare goals. The current healthcare environment demands that nurses not only perform their duties effectively but also exhibit a high level of psychological involvement in their work. This involvement, or work engagement, can lead to better patient care outcomes, reduced burnout, and enhanced cooperation within healthcare settings [4, 5]. It is a positive affective-cognitive state that is proactive and characterized by energy, identification with one's work, and an intense focus that is difficult to break [6]. However, the demanding nature of nursing, fraught with emotional challenges and physical fatigue, can hinder the development of such engagement, leading to high turnover rates and affecting overall healthcare delivery [1]. Work engagement has garnered considerable attention as a vital factor in healthcare settings, reflecting the quality of care and satisfaction among patients and employees. Schaufeli and Bakker [7] define it as a satisfying state of mind characterized by vigor, dedication, and absorption elements, which are essential for nurses to view their work as meaningful and inspiring. The positive relationship between work engagement and various motivational and job-related outcomes, including better health outcomes, has been firmly established in prior research [8]. This study aims to build on existing literature by exploring work engagement specifically within the context of Saudi nurses, providing insights tailored to the unique cultural and organizational environment of Saudi Arabia. Moreover, the literature suggests that high work engagement among staff nurses indicates a healthy work environment, which is crucial for the sustained delivery of patient-centered care [9]. Furthermore, engagement is the antithesis of job burnout, offering a protective barrier against the emotional exhaustion frequently experienced in high-stress jobs, such as nursing [10]. The implications of work engagement extend beyond individual well-being to organizational outcomes. Engaged employees are typified by a sense of inspiration and dedication to their work, which translates into higher patient care and productivity [11]. Studies across various countries have shown that nurses with higher engagement levels are more likely to contribute beyond their immediate responsibilities, which enhances the quality of service provided to patients [12-15]. Notably, work engagement is fostered by supportive work environments, performance feedback, autonomy, and opportunities for learning and growth, all of which are crucial in the demanding and dynamic field of nursing [16]. In the Kingdom of Saudi Arabia (KSA), where the healthcare system is striving to optimize to meet the standards of Vision 2030, the engagement of nurses is pivotal. Research within the KSA has started to shed light on the varying levels of nurse engagement across different healthcare settings and demographic profiles, indicating the existence of unique challenges and opportunities within this context [17]. The current investigation aims to enhance this understanding by identifying key demographic and work-related factors influencing nurse engagement at King Abdulaziz Hospital

(KAH). Moreover, studies have suggested a link between organizational pressures, such as workload, and the engagement levels of healthcare practitioners, highlighting the importance of examining these relationships closely [18]. The nursing profession in KSA stands at a crossroads. Nurses reportedly face high levels of stress, with adverse effects on their psychological and physical well-being, potentially leading to decreased work engagement [19-24]. This is a cause for concern as the quality of patient care is intimately connected to the engagement levels of nurses. Therefore, it is essential to investigate the work engagement of Saudi nurses at KAH, identify the factors that affect it, and determine the relationship between these factors and the nurses' level of engagement. This study aims to fill the gaps in the literature by providing an in-depth analysis of work engagement among Saudi nurses at KAH, exploring the impact of demographic and work-related factors, and examining how these elements interplay to shape the overall work engagement in this specific setting. The insights gained from this research could offer valuable implications for healthcare leaders and policymakers in KSA, aiming to foster a conducive work environment that supports nurse engagement, aligns with the national healthcare strategy, and ultimately improves patient care outcomes.

## 2. MATERIALS AND METHODS

In this study, a quantitative cross-sectional design was utilized to assess the levels of work engagement among Saudi nurses at KAH in Jeddah, KSA. The data collection took place in November, 2019. An electronic questionnaire was distributed to all 466 Saudi nurses employed at KAH, achieving a response rate of 48%, with the participation of 224 nurses. The inclusion criteria were strictly Saudi nurses currently employed at KAH. In contrast, non-Saudi nurses were excluded from the study to maintain a homogenous study population reflective of the local workforce. The measurement of work engagement is nuanced, with the Utrecht Work Engagement Scale (UWES) being the predominant tool, segmenting into vigor, dedication, and absorption sub-metrics [7, 25]. The UWES consists of 9 items rated on a 7-point Likert scale, where higher scores indicate greater levels of engagement. The scale uses the following key: 0 = Never, 1 = Almost Never (a few times a year or less), 2 = Rarely (once a month or less), 3 = Sometimes (a few times a month), 4 = Often (once a week), 5 = Very often (a few times a week), and 6 = Always (every day). For example, items include statements, such as "At my work, I feel bursting with energy" (vigor), "I am enthusiastic about my job" (dedication), and "I get carried away when I am working" (absorption). Higher scores on these items reflect more significant levels of engagement. This tool has demonstrated that higher engagement levels are inversely related to burnout and effectively predict job performance and customer satisfaction. The Maslach Burnout Inventory (MBI) and the Oldenburg Burnout Inventory (OLBI) further delineate the contrasts between burnout and engagement, with burnout characterized as

an erosion of engagement where vitality is depleted and one's approach to work becomes negative [26]. We chose to use the UWES-9 for the analysis because it focuses specifically on work engagement through vigor, dedication, and absorption, which are critical components in understanding employee engagement. Unlike broader measures, such as the NJD-R, which assesses job satisfaction through job dimensions, psychological states, and work outcomes, the UWES-9 provides a more targeted assessment of engagement levels [7, 25]. The data collection tool for the study was a meticulously designed questionnaire based on theoretical frameworks and empirical research, notably the work of Alfifi *et al.* [27]. Developed to capture the nuances of nurses' work engagement, the questionnaire was bifurcated into two sections: the first solicited sociodemographic information, such as gender, age, marital status, education, and income, alongside work-related factors, including experience, work hours, employment status, and job position. The second segment employed the UWES, a recognized instrument for gauging work engagement levels, including vigor, dedication, and absorption [11], to assess the extent of nurses' work engagement through nine targeted questions. This dual-language (Arabic and English) questionnaire was distributed following ethical approval from relevant authorities, ensuring that participant rights and privacy were upheld and the data were exclusively allocated for research purposes. Participants were fully briefed on the study's objectives at the outset and provided informed consent, reinforcing the ethical integrity of the data collection process. Rigorous scrutiny was applied to the main study instrument to affirm its validity and reliability. The questionnaire was evaluated by a panel of experts, ensuring its alignment with the research goals and suitability for measuring the intended constructs. The reliability was quantitatively confirmed, with Cronbach's alpha coefficients ranging from 0.829 to 0.886 across the domains of vigor, dedication, and absorption, indicating a high level of consistency within each domain. Also, the overall reliability of the questionnaire was measured at an alpha coefficient of 0.951, demonstrating exceptional internal

consistency and qualifying the instrument as highly reliable for assessing the work engagement among nurses as intended in the study. The data analysis was conducted using SPSS version 22, including descriptive statistics, to summarize the sociodemographic characteristics and work engagement levels of the participants, and applying Mann-Whitney and Kruskal Wallis tests for group differences, with Spearman's correlation and linear regression tests assessing relationships between engagement factors. Ethical approval was obtained from the KAH Scientific Research Ethics Committee.

### 3. RESULTS

A total of 224 respondents were Saudi nurses currently employed at KAH, making them eligible and included in the study. No data was missing for any of the variables of interest. Since this was a cross-sectional study, there was no follow-up time to report. The demographic composition of respondents included a predominance of female nurses, representing 82% of the sample, with approximately half aged between 30-39 years. The marital status of the respondents was diverse; however, half of the participants reported being married. The educational background of the respondents varied, with the majority holding a bachelor's degree in nursing (45%), followed by diplomas (43%), and a minority possessing postgraduate degrees (11%).

Table 1 presents the work-related characteristics of the nurses included in the sample. Notably, most nurses have substantial experience, with 33.1% having 6-10 years and 35.7% possessing 11-20 years of experience. There is a smaller representation of nurses with over 20 years of experience, constituting 11.6% of the sample. The predominant role within the sample is that of staff nurses, making up 75.9%, while head nurses or managers account for 24.1%. Regarding working hours, more than half of the nurses (56%) work a standard 45-hour week, followed by 25% working less than 45 hours, and a smaller group (19%) exceeding 45 hours. The majority of nurses are employed full-time (98.2%), with part-time employees representing only 1.8% of the sample.

**Table 1. Profile of Saudi nurses: demographic and professional attributes (n=224).**

Variables	Count	Percentage (%)
<b>Demographic Factors</b>	-	-
<b>Gender</b>	Male	17.9
	Female	82.1
<b>Age Group</b>	Less than 30 years	29.5
	30 - 39 years	52.7
	40 - 50 years	11.6
	More than 50 years	6.3
<b>Marital Status</b>	Single	36.6
	Married	57.1
	Divorced	4.5
	Widower/ed	1.8

(Table 1) contd....

Variables		Count	Percentage (%)
Income Level	10,000 and less	64	28.6
	>10,000 - 15,000	99	44.2
	>15,000	61	27.2
Educational Level	Diploma	98	43.8
	Bachelor	102	45.5
	Postgraduate	24	10.7
Work-Related Factors	-	-	-
Years of Experience	5 years and less	44	19.6
	6 - 10 years	74	33.1
	11 - 20 years	80	35.7
	More than 20 years	26	11.6
Work Position	Staff Nurse	170	75.9
	Head nurse / Manager	54	24.1
Working Hours	<45	55	25
	45	127	56
	>45	42	19
Employment Status	Full-time	220	98.2
	Part-time	4	1.8

Table 2. Engagement levels by demographic and professional characteristics of Saudi nurses (n=224).

Factor	Number	Percentage (%)	Average Engagement
Demographic Factors	-	-	-
Gender	Male	40	17.9
	Female	184	82.1
Age Group	Less than 30 years	66	29.5
	30 - 39 years	118	52.7
	40 - 50 years	26	11.6
	More than 50 years	14	6.3
Marital Status	Single	82	36.6
	Married	128	57.1
	Divorced	10	4.5
	Widower/ed	4	1.8
Income Level	10,000 and less	64	28.6
	>10,000 - 15,000	99	44.2
	>15,000	61	27.2
Educational Level	Diploma	98	43.8
	Bachelor	102	45.5
	Postgraduate	24	10.7
Work-Related Factors	-	-	-
Years of Experience	5 years and less	44	19.6
	6 - 10 years	74	33.1
	11 - 20 years	80	35.7
	More than 20 years	26	11.6
Work Position	Staff Nurse	170	75.9
	Head nurse/ Manager	54	24.1
Working Hours	<45	55	25
	45	127	56
	>45	42	19
Employment Status	Full-time	220	98.2
	Part-time	4	1.8
	-	-	-

Table 2 presents the demographic and work-related characteristics of Saudi nurses and their corresponding levels of work engagement. Male nurses report higher

average engagement (4.2) than their female counterparts (3.9). Engagement appears to increase with age, with nurses over 50 scoring the highest average engagement at

4.3. Regarding marital status, married nurses show more engagement (4.1) than single or divorced nurses, with widowed nurses reporting significantly lower engagement (1.1). A positive correlation is observed between income level and engagement, with those earning over 15,000 exhibiting the highest engagement levels (4.4). Educational attainment also shows a similar trend; postgraduate nurses have higher engagement (4.2) than those with a bachelor's or a diploma.

Work-related factors further reveal that nurses with more than 20 years of experience are the most engaged (4.8), suggesting a potential accumulation of engagement over time. Head nurses or managers are more engaged (4.3) than staff nurses (3.9). Working hours influence engagement, with those working exactly 45 hours per week reporting higher engagement (4.1) than those

working less or more. Full-time nurses have higher engagement levels (4.0) than part-time nurses (2.3), indicating that employment status significantly impacts engagement.

Table 3 displays the mean scores, standard deviations (SD), and mean percentages for individual items and subtotals of work engagement among nursing staff. For the 'Vigor' component, scores are consistently high with the items "At my work, I feel bursting with energy" and "At my job, I feel strong and vigorous," both averaging 4.05 out of 6, translating to a mean percentage of 67.5%. The item "When I get up in the morning, I feel like going to work" scored slightly lower, with a mean of 3.48 and a mean percentage of 58%. The subtotal mean percentage for 'Vigor' stands at 64.33%.

**Table 3. Mean work engagement among nursing staff.**

No	Work Engagement	Mean	SD	Mean % *
<b>Vigor</b>				
1	At my work, I feel bursting with energy	4.05	1.54	67.5
2	At my job, I feel strong and vigorous	4.05	1.49	67.5
3	When I get up in the morning, I feel like going to work	3.48	1.82	58.0
-	Vigor average	3.86	1.46	64.33
<b>Dedication</b>				
4	I am enthusiastic about my job	4.04	1.43	67.33
5	My job inspires me	3.50	1.67	58.33
6	I am proud of the work that I do	4.21	1.67	70.16
-	Dedication average	3.92	1.43	65.33
<b>Absorption</b>				
7	I feel happy when I am working intensely	3.74	1.79	62.33
8	I am immersed in my work	4.27	1.52	71.16
9	I get carried away when I am working	4.37	1.70	72.83
-	Absorption average	4.13	1.44	68.83
-	Average	3.97	1.38	66.16

**Note:** \*The mean percentage is calculated based on the maximum score of 6 for each item.

**Table 4. Group differences in work engagement among Saudi nurses based on demographic and work-related factors (n=224).**

Variables	p-value <sup>a b</sup>
<b>Demographic Factors</b>	-
Gender	0.56 <sup>a</sup>
Age Group	0.29 <sup>b</sup>
Marital Status	0.01** <sup>b</sup>
Income Level	0.02* <sup>b</sup>
Educational Level	0.52 <sup>b</sup>
<b>Work-Related Factors</b>	-
Years of Experience	<0.01** <sup>b</sup>
Work Position	0.043 * <sup>a</sup>
Working Hours	0.35 <sup>b</sup>
Employment Status	0.056 * <sup>a</sup>

**Note:** a: Mann-Whitney test.

b: Kruskal Wallis test.

\* Indicates statistical significance (p-value <0.05).

\*\* Indicates statistical significance (p-value <0.01).

“Absorption” scores suggest the highest level of engagement, with “I am immersed in my work” and “I get carried away when I am working,” scoring 4.27 and 4.37, respectively, equating to mean percentages above 70%. This indicates a high degree of concentration and absorption in work tasks among nurses. The subtotal mean percentage for 'Absorption' is 68.83%, the highest among the categories, leading to an overall mean work engagement score of 3.97 out of 6, or 66.16%. This comprehensive data indicates a strong level of engagement across all domains, with 'Absorption' being particularly pronounced.

Utilizing the Mann-Whitney and Kruskal Wallis tests to identify differences among groups, the study found marital status to have a statistically significant difference in work engagement, with married nurses showing higher scores than their unmarried counterparts (p=0.01\*\*) (Table 4). Similarly, a substantial difference in engagement levels was observed with income, where nurses earning over 15,000 exhibited the highest engagement (p=0.02\*). Years of experience also showed a significant difference; nurses with more than 20 years in the field had the highest engagement scores (p<0.01\*\*). However, no significant differences in engagement were detected when analyzing the data by gender, age, or educational level. For work-

related positions, head nurses or managers reported higher engagement than staff nurses with a slight difference (p=0.043\*), and full-time employment status was on the verge of showing a significant difference in engagement levels compared to part-time status (p=0.056\*).

In the “Dedication” category, the item “I am proud of the work that I do” scored the highest, with a mean of 4.21 and a mean percentage of 70.16%, reflecting a strong sense of professional pride among nurses. The other items related to job enthusiasm and inspiration scored slightly lower, contributing to a subtotal mean percentage for “Dedication” of 65.33%.

The study utilized Spearman's correlation to examine the strength and direction of relationships between demographic and work-related factors and the work engagement of Saudi nurses (Table 5). The findings indicated no significant correlation between work engagement and gender (p=0.56), age groups (p=0.72), marital status (p=0.83), educational level (p=0.53), and working hours (p=0.52). However, there was a significant correlation between work engagement and years of experience (p=0.032\*), suggesting that nurses with more years of service tended to have higher engagement levels. Similarly, work positions showed a significant correlation

**Table 5. Spearman correlation analysis of engagement factors.**

Variables	Spearman Correlation Coefficient
<b>Demographic Factors</b>	-
Gender	0.56
Age Group	0.72
Marital Status	0.83
Income Level	0.07
Educational Level	0.53
<b>Work-Related Factors</b>	-
Years of Experience	0.032*
Work Position	0.043*
Working Hours	0.52
Employment Status	0.05*

Note: \* Indicates statistical significance (p-value <0.05).

**Table 6. Linear regression analysis of engagement factors.**

Model	Unstandardized Coefficients	Standard Error	Standardized Coefficients	p
H <sub>0</sub>	(Intercept)	3.972	0.093	42.887
H <sub>1</sub>	(Intercept)	9.375	1.371	6.838
-	Gender	-0.365	0.230	-1.586
-	Age	-0.030	0.018	-1.680
-	Marital Status	-0.525	0.173	-3.026
-	Income	-0.001	0.001	-1.337
-	Education	0.165	0.138	1.194
-	Years of Experience	0.081	0.022	3.729
-	Position	0.564	0.209	2.691
-	Employment Status	-2.086	0.722	-2.888
-	Working Hours	-0.055	0.018	-3.107

( $p=0.043^*$ ), with those in higher positions, like head nurses or managers, reporting greater engagement. Employment status also significantly correlated with engagement ( $p=0.05^*$ ), indicating that full-time nurses might be more engaged than their part-time colleagues. Income level approached significance ( $p=0.07$ ), hinting at a potential relationship with engagement that would benefit from further investigation. These correlations suggest that while factors like years of experience, work position, and employment status are related to nurse engagement, others, such as gender and age, are not (Table 6).

The linear regression analysis further confirmed the significance of years of experience ( $p<0.001$ ), work position ( $p=0.008$ ), employment status ( $p=0.004$ ), and working hours ( $p=0.002$ ) as predictors of work engagement among Saudi nurses. Marital status also emerged as a significant predictor ( $p=0.003$ ). The model explained 16.5% of the variance in work engagement ( $R^2=0.165$ ), indicating that while these factors are important, a substantial portion (approximately 83.5%) of the variance is attributed to other factors not included in this study, highlighting the need for further exploration in future research.

#### 4. DISCUSSION

This study has revealed nuanced relationships that align with existing literature while presenting unique findings that contribute to a broader understanding of nurses' work engagement. The primary objective was to assess the levels of work engagement among Saudi nurses and identify the demographic and work-related factors contributing to their engagement. Spearman's correlation test, a non-parametric measure of rank correlation, was employed to evaluate these relationships.

The demographic factors, including gender, age, marital status, and educational level, did not exhibit statistically significant correlations with work engagement. This is consistent with the findings reported by Seada [18], suggesting that these individual characteristics may not play a decisive role in how engaged nurses feel at work. Contrary to expectations and some previous studies [28], age did not significantly differentiate engagement levels, indicating that enthusiasm for nursing is not confined to a specific age group.

However, work-related factors painted a different picture. Nurses with over 20 years of experience exhibited significantly higher engagement levels ( $p=0.032^*$ ), suggesting a possible cumulative effect where engagement deepens with time spent in the profession. This aligns with studies by Alfifi *et al.* [27] and Hontake and Ariyoshi [11], reinforcing the idea that prolonged exposure to the nursing field may bolster a sense of commitment and passion for one's work.

Interestingly, nurse managers demonstrated higher engagement than staff nurses ( $p=0.043^*$ ), which could be attributed to their leadership roles and the corresponding sense of responsibility and influence they wield within their teams. This finding resonates with the work carried

out by Seada [18] but contrasts with Hontake and Ariyoshi [11], suggesting that the impact of work position on engagement may be context-dependent.

Furthermore, full-time nurses reported significantly higher engagement than their part-time counterparts ( $p=0.05^*$ ), as supported previously [29-31]. This could be due to the greater immersion in the work environment and stronger ties to the workplace culture that full-time status affords [32, 33].

While not showing a significant correlation with engagement, income level approached significance ( $p=0.07$ ), hinting at a trend that echoes the findings of Lu [34], where financial compensation may intersect with job satisfaction and overall engagement. Higher-income could potentially alleviate financial stress, allowing nurses to focus more on their professional fulfillment.

Contrary to these findings, marital status revealed a significant difference in engagement levels, with married nurses scoring higher than singles ( $p=0.01^{**}$ ). This is in line with the results by Kairanna and Sneha [35] but contradicts the findings reported by Seada [18], indicating that the support system marriage may provide could play a role in one's work life, albeit this relationship merits further investigation to understand the underlying dynamics fully.

The limitations of this study, such as sample size and composition, must be considered when interpreting these results. The differences observed might be influenced by specific cultural or organizational contexts within KAH, which may not be generalizable to other settings. Potential sources of bias include self-reported data, which may be influenced by social desirability or recall bias. The cross-sectional design likewise limits the ability to establish causality.

In summary, demographic factors showed no substantial correlation with work engagement, work-related experiences, position, and employment status. These insights suggest that organizational policies and management practices focusing on career development, job design, and full-time employment opportunities could be instrumental in enhancing nurses' engagement. The findings emphasize the multifaceted nature of work engagement, driven by both personal fulfillment and professional dynamics and underline the importance of a supportive work environment that acknowledges the value of experience and leadership roles in fostering a committed nursing workforce. The generalizability of the study results is limited by the specific setting and population, with findings most applicable to Saudi nurses working in similar hospital settings. Future research should include a more diverse sample and explore longitudinal designs to better understand the dynamics of work engagement over time.

#### CONCLUSION

This study explores the work engagement of Saudi nurses at KAH in Jeddah and provides valuable insights into the factors that contribute to a nurse's sense of

dedication and commitment to their profession. It reveals that personal demographic characteristics, such as gender, age, and marital status, do not significantly correlate with work engagement, professional experience, roles, and full-time employment status. Nurses with extended years of service, those in managerial positions, and full-time employees exhibit higher levels of engagement, underscoring the influence of professional development and work environment on engagement. These findings suggest that fostering work engagement in nursing staff requires attention to career progression opportunities, recognition of leadership roles, and supportive full-time work arrangements. As the healthcare sector continues to evolve, understanding these dynamics becomes crucial for healthcare organizations aiming to improve patient care through a more engaged and motivated nursing workforce. The study underscores the need for hospital administrations to craft policies and practices that bolster work engagement, which is essential for both nurse well-being and the delivery of high-quality healthcare services.

### AUTHORS' CONTRIBUTION

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

### LIST OF ABBREVIATIONS

MBI	=	Maslach Burnout Inventory
KAH	=	King Abdulaziz Hospital
KSA	=	Kingdom of Saudi Arabia
OLBI	=	Oldenburg Burnout Inventory
UWES	=	Utrecht Work Engagement Scale

### ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from the KAH Scientific Research Ethics Committee (IRB registration Number with KACST, KSA: H-02-J-002, Research Number: 01130, REDACTED on 25/11/2019).

### HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

### CONSENT FOR PUBLICATION

Informed consent was obtained from the participants.

### STANDARDS OF REPORTING

STROBE guidelines were followed.

### AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available at Zenodo Repository, at the following link:

[https://zenodo.org/records/13736033?token=eyJhbGciOiJIUzUxMiJ9.eyJpZCI6IjE3MmJlY2Q5LWU0NjAtNGM0MC05YzQyLTlkZWl2YTYxNmZkZCIsImRhdGEiOiOnt9LjYw5kb20iOiJiNDJhN2RkNmI5OWUyMDE0Mjk5YjlxMTY3NWVjZWVkNyJ9.cNTH2UABoUQQBKKia5WZ2t\\_0nyUKP0gG5V3w mobemrwouWa2Xh9JtQH3CzpMGyeD0j28o39c7LwJMcso7g2e\\_A](https://zenodo.org/records/13736033?token=eyJhbGciOiJIUzUxMiJ9.eyJpZCI6IjE3MmJlY2Q5LWU0NjAtNGM0MC05YzQyLTlkZWl2YTYxNmZkZCIsImRhdGEiOiOnt9LjYw5kb20iOiJiNDJhN2RkNmI5OWUyMDE0Mjk5YjlxMTY3NWVjZWVkNyJ9.cNTH2UABoUQQBKKia5WZ2t_0nyUKP0gG5V3w mobemrwouWa2Xh9JtQH3CzpMGyeD0j28o39c7LwJMcso7g2e_A) DOI: 10.5281/zenodo.13736033.

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### CONFLICT OF INTEREST

The author(s) declare no conflict of interest, financial or otherwise.

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