

Exploring the Relationship between Work–Life Balance and Work Engagement among Staff Nurses at a Tertiary Care Centre: A Cross-Sectional Study

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ABSTRACT

Background: Work-life balance is the balance between work and personal life that is important for employee health and productivity. Nursing is a very stressful job, so keeping this balance helps nurses provide better care, stay healthy, and make their clients happier by doing better work and being more involved. **Objectives:** To identify the correlation between work-life balance and work engagement among the nursing staff in a tertiary care center. **Methods:** A cross-sectional descriptive correlational study was performed among 250 staff nurses chosen through convenience sampling from a tertiary care hospital. Data were gathered using the Work–Life Balance Scale and the Utrecht Work Engagement Scale (UWES-17) and analyzed using descriptive and inferential statistics methods. **Results:** The study determined that 48.8% of nurses reported a high level of work-life balance, and 32.8% had a moderate level. As for work engagement, 28.4% were very highly engaged and 23.6% highly engaged. The mean \pm standard deviation of the work-life balance score was 62.58 ± 14.95 , whereas the average work engagement score was 3.59 ± 1.71 . There was a statistically significant moderate positive correlation between work-life balance and work engagement ($r = 0.427, p < 0.001$). Family type ($p = 0.008$) and number of children ($p = 0.019$) were significantly related to work-life balance, whereas gender was significantly associated with work engagement ($p = 0.039$). **Conclusion:** The findings highlight the importance of promoting organizational policies and interventions, flexible scheduling, adequate staffing, and psychological support, which may enhance work-life balance and engagement, improve job satisfaction, and ensure quality care delivery.

Keywords: Staff Nurses; Tertiary Care Center; Work Engagement; Work-Life Balance

INTRODUCTION

Nurses are the most important part of healthcare systems, especially in tertiary care centers, where the clinical environment is very demanding and often involves long hours, emotional stress, and heavy workloads (Shah *et al.*, 2021). In these high-pressure situations, the importance of achieving a balance between work and personal life, known as Work-Life Balance (WLB), has become increasingly apparent. Work–life balance is associated with reduced role conflict and improved well-being among healthcare professionals (Holland *et al.*, 2019; Kowitlawkul *et al.*, 2019).

At the same time, healthcare organizations strive for a workforce that is not only physically present but also psychologically motivated and dedicated - a state that can be described by the concept of work engagement. Work engagement is a positive work-related psychological state characterized by vigor, dedication, and absorption (Holly *et al.*, 2024). Engaged nurses have been shown to bring more energy to their work, exhibit a higher sense of dedication to their job, and be more committed to patient care, thus leading to better job performance and, as a result, increased quality of care. Data derived from studies conducted in hospitals suggest that the level of a nurse's work engagement has a close relationship with the nurse's work performance, the patient's care outcomes, and reduced turnover intention (Seragon & Cruz, 2025; Vimovattana & Benjakul, 2025).

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Organizations, not just individuals, must take the role of finding a process to maintain a healthy work-life balance seriously. Nurses' work-life imbalance has brought about managing a number of negative consequences, including burnout, higher turnover intention, and lower job satisfaction. These problems have, to some extent, compromised patient safety and the quality of care, leading to increased risks of medical errors and decreased patient trust in healthcare services (Li *et al.*, 2024). On the other hand, work engagement is believed to have a major part in many positive outcomes for organizations, such as improved job performance, higher patient satisfaction, and lower employee turnover. Due to a shortage of sufficiently trained nurses worldwide, it is necessary to keep nurses productive to render healthcare services effectively and efficiently (Poku *et al.*, 2025).

The Job Demands-Resources (JD-R) model is a common theoretical framework to illustrate the relationship between work-life balance and work engagement. In this circumstance, work-life issues are seen as an important part of the job that drains a person's energy and is associated with burnout (Méndez *et al.*, 2025). On the other hand, balancing work and personal life well is a personal resource that can help you manage stress and remain motivated in a way that keeps you interested in your work. Nurses are more likely to contribute their mental and emotional energy into their work when they feel in control of their schedules and can meet their personal responsibilities.

Several research studies done in the healthcare sector have revealed that nurses who have a supportive work environment, flexible policies, and good social support outside work feel more satisfied with their work-life balance and are more engaged at work (Sun *et al.*, 2022). As evidence, female nurses with preschool-aged children have revealed that work engagement and social support are major factors sustaining them both personally and professionally. This highlights that different work-life balance factors in the environment are very important for this particular group. Similarly, socio-ecological reviews indicate that the WLB of nurses is a result of the interplay of individual, organizational, and policy-level factors, thereby emphasizing the necessity for context-specific investigations (Widayana *et al.*, 2025).

Affective organizational commitment and positive family-to-work spillover are the major factors that influence the engagement of hospital nurses; thus, the promotion of initiatives that support both domestic and professional spheres becomes an imperative. Being strongly attached to their organization equips nurses with the ability to cope with stress at home without it having any negative influence on their work; hence, they can maintain their full engagement in their jobs. Hospital organizations, through their concerted efforts, need to put in place measures that not only support but also motivate nurses to achieve work-life balance by, among other things, facilitating the fulfillment of domestic role obligations and thus contributing to their workplace engagement in the form of vitality, enthusiasm, and overall engagement (Fukuzaki *et al.*, 2021).

Work engagement of nurses is significantly influenced by the quality of their work life, which includes work-life balance, support from the supervisor, and opportunities for professional development in hospital settings. The correlation has real consequences for healthcare leaders who want to keep and refresh the skilled staff (Sibuea *et al.*, 2024).

In the present study setting, a large tertiary care center in Tamil Nadu, nurses care for patients with high acuity and complex conditions that require continuous monitoring and advanced technology. They frequently work rotating shifts, including nights, manage unpredictable workloads with emergency admissions and rapid patient turnover, and often do so within lean staffing patterns. These features increase physical and emotional demands and disrupt family and personal routines, making it especially difficult to maintain a healthy work-life balance while remaining engaged at work. Understanding how work-life balance is associated with work engagement in this specific tertiary care context is therefore crucial for designing effective organizational strategies.

Although many studies have linked work-life balance with work engagement of nurses, a majority of them were done in general hospital settings or abroad and mostly looked at organizational and psychosocial factors. There is hardly any research that has focused on work-life balance and work engagement of nurses in high-acuity tertiary care settings where, in addition to work pressure, staff patterns and emotional demands are also different to a great extent. Besides, family-related factors such as family type and number of children,

which are particularly significant in the Indian social context, are least studied. Health-care infrastructure, cultural expectations and resource constraints being quite different in India, these factors might have a very different impact on the ability of nurses to manage work-life balance and work engagement. Hence, this research fills this contextual and setting-specific gap by exploring the relationship between work-life balance and work engagement among nurses in a tertiary care hospital.

Research Objectives

- To assess the level of work-life balance and work engagement among staff nurses.
- To examine the relationship between work-life balance and work engagement among staff nurses.
- To assess the association between the selected demographic variables and work–life balance and work engagement.

Research Hypothesis

H1: There is a significant relationship between work–life balance and work engagement among staff nurses.

H2: There is a significant association between selected demographic variables and work–life balance among staff nurses.

H3: There is a significant association between selected demographic variables and work engagement among staff nurses.

Operational Definitions

Work-Life Balance

The ability of staff nurses to appropriately manage their work and personal lives was assessed using a self-structured work–life balance questionnaire developed and validated by the investigator.

Work Engagement

Work engagement refers to a positive work-related state characterized by vigor, dedication, and absorption, measured using a standardized Utrecht Work Engagement Scale (UWES).

Staff Nurses

Staff nurses are registered nurses who provide direct patient care in the various inpatient and outpatient departments of the selected tertiary care center during the period of data collection.

Tertiary Care Center

A tertiary care center refers to a specialized healthcare institution providing comprehensive medical and nursing services, including advanced diagnostic and therapeutic care.

Assumptions

Staff nurses participating in the study provided honest and accurate responses to the self-administered questionnaires. The tools used in the study are valid and reliable. Work-life balance has an impact on the work engagement of the nurses.

METHODOLOGY

Research Approach

A quantitative research approach was adopted for the present study.

Research Design

A cross-sectional descriptive survey design was used to assess work–life balance and work engagement

among staff nurses. This design is suitable for studying the relationship between variables at one point in time; however, it does not allow for causal inference.

Study Setting

The study was conducted at a tertiary care center in Tamil Nadu.

Sample Size Estimation

The sample size was calculated using Cochran's formula (Israel, 2003):

$$N = (Z^2 \times p \times q) / e^2$$

Where $Z = 1.96$ (95% confidence level),

$p = 0.5$ (assumed prevalence for maximum variability),

$q = 1 - p = 0.5$,

$e = 0.062$.

$$N = ((1.96)^2 \times 0.5 \times 0.5) / ((0.062)^2), N = (3.8416 \times 0.25) / 0.00397, N = 0.9604 / 0.00397, N = 250$$

The inclusion criteria were staff nurses willing to participate during the study period. Based on the calculation, the estimated sample size was 250.

Sample Size

A total of 250 staff nurses were included in the study.

Sampling Technique

Convenience sampling was chosen because of practical reasons, such as duty rosters based on shifts and the availability of the participants during the period when data were being collected. This method is acknowledged to reduce the potential to generalize.

Participants

An anonymous cross-sectional questionnaire survey was administered to nurses working at a tertiary care center in Tamil Nadu, India. The participants were provided with envelopes containing explanatory documents and questionnaires describing the study's purpose, personal information protection, and data management methods. The survey was done in September 2025 over the course of one month.

Target Population

The target population comprised of all staff nurses working in tertiary care hospitals.

Accessible Population

The accessible population included staff nurses working in the selected tertiary care center in Tamil Nadu during the study period.

Instruments

Demographic Characteristics

The following items were included: age, gender, education, marital status, family type, number of children, income, current department, experiences of the nurses, and number of working hours.

The Work–Life Balance Scale

The Work–Life Balance Scale itself is a self-administered tool that nurses can use to find out how they feel about and deal with combining their professional and personal lives. The scale comprises 20 questions that are divided into three domains: 1. Work-Related Factors (9 items), 2. Home/Family/Personal Life Factors (6 items), and 3. Work–Life Balance Perception and Outcomes (5 items). Each sentence was rated on a 5-point

Likert scale, with scores varying from 1 (Strongly Disagree) to 5 (Strongly Agree). Scores were interpreted as good work-life balance (61–80), moderate balance (41–60), poor balance (21–40), and very poor work-life balance (below 20).

Utrecht Work Engagement Scale

The Utrecht Work Engagement Scale (UWES-17) is a reliable tool to measure the presence of positive work-related psychological states, which are vigor, dedication, and absorption (Schaufeli & Taris, 2014; Schaufeli *et al.*, 2006; Schaufeli & Bakker, 2003). The questionnaire comprises 17 statements, which are subdivided into three different dimensions: vigor (6 items), dedication (5 items), and absorption (6 items). Each item can be rated on a 7-point Likert scale ranging from 0 ("never") to 6 ("always/every day"). UWES was calculated to determine overall reported work engagement, with higher scores indicating higher engagement. Scores were calculated as high (4-6), moderate (2-4), and low (0-2) levels of the reported engagements. The Utrecht Work Engagement Scale is explicitly stated by the authors to be free for use in non-commercial scientific research such as academic studies, theses, and dissertations.

Data Collection

Data were collected from staff nurses working in a selected tertiary care center in Tamil Nadu over one month (September 2025). Prior permission and ethical approval were obtained before data collection. Eligible participants were provided with an information sheet, and written informed consent was obtained before participation. Data were collected using self-administered questionnaires, which included demographic details, work–life balance, and work engagement variables. Participants completed the questionnaires individually to ensure confidentiality, and all responses were collected on the same day after completion.

Reliability and Validity of the Tool

To obtain the reliability and validity of the study instruments, a pilot study was conducted among 30 staff nurses. Internal consistency reliability was assessed for the self-structured Work–Life Balance Questionnaire and the Work Engagement Scale (UWES-17). The Cronbach's alpha values obtained were 0.81 for the Work–Life Balance Questionnaire and 0.93 for the UWES-17, indicating satisfactory internal consistency. The pilot study participants were excluded from the main study. Content validity of the self-structured questionnaire was established through expert review. Overall, the instruments demonstrated acceptable reliability and validity for use in the main study.

Data Analysis

Data was analyzed using SPSS version 20. Demographic characteristics and study variables (work–life balance and work engagement) were described by the mean, standard deviation, frequency, and percentage. Additionally, median values were calculated to assess the distribution of data and identify the skewness in the work-life balance and work engagement scores, so both mean and median are reported to give a more complete picture of central tendency. The relationship between work–life balance and work engagement was tested by inferential statistics, i.e., Pearson's correlation coefficient. Also, the relationships between demographic variables and the main outcomes were tested by the chi-square test. The *p*-value of 0.05 or less was considered statistically significant.

Ethical Consideration

The research obtained ethical clearance from the Ethical Review Committee, SRM Medical College and Hospital and Research Centre, India with Reference Number ECR/8869/INST/TN/2013/RR-19 on 23rd July 2024.

RESULTS

Table 1 highlights that the majority of respondents in this study were female nurses, primarily aged 21 to 30 and holding a B.Sc. in Nursing. A high percentage of them were from nuclear families and were without children. The majority of the nurses had ≤ 5 years of work experience and worked ≤ 8 hours per day, which describes a profile of a young nursing workforce.

Table 1: Frequency and Percentage Distribution of Demographic Variables of the Staff Nurses (n = 250)

Variable	Category	n	Percentage (%)
Age (Years)	21–30	177	70.8
	31–40	45	18.0
	41 – 50	20	8.0
	Above 50	8	3.2
Gender	Male	31	12.4
	Female	219	87.6
Marital Status	Single	140	56.0
	Married	108	43.2
	Divorced / Widowed	2	0.8
Education	Diploma	36	14.4
	B.Sc Nursing	204	81.6
	M.Sc & above	10	4.0
Income	₹15,000 – ₹30,000	197	78.8
	₹30,000 – ₹45,000	29	11.6
	More than ₹45,000	24	9.6
Family Type	Nuclear	174	69.6
	Joint	74	29.6
	Extended	2	0.8
Children	None	143	57.2
	≥1	107	42.8
Experience	≤5 years	203	81.2
	>5 years	47	18.8
Working Hours	≤8 hrs	234	93.6
	>8 hrs	16	6.4
Current Department/Unit	Critical care unit	91	36.4
	Specialized area	72	28.8
	Gynaecology /Obstetrics	19	7.6
	General ward	68	27.2

Table 2 shows that nearly half of the staff nurses reported a very good level of work–life balance (48.8%), followed by a moderate level (32.8%). A similar pattern was observed for work engagement, with most nurses demonstrating very high (28.4%) and high (23.6%) levels. Among the dimensions of work engagement, the highest proportion was observed in the 'very high' level of dedication (39.6%), indicating that nurses are strongly committed to their profession.”

Table 2: Frequency and Percentage Distribution of Level of Work–Life Balance and Work Engagement among Staff Nurses (n = 250)

Level of Work-Life Balance	Very low		Low		Moderate		High		Excellent	
	F	%	F	%	F	%	F	%	F	%
Work-related factors	-	-	29	11.6	57	22.8	129	51.6	35	14.0
Home/Family/Personal life factors	-	-	33	13.2	60	24.0	98	39.2	59	23.6
Work-life balance perception & outcomes	-	-	6	2.4	74	29.6	156	62.4	14	5.6
Overall Work-life balance	-	-	25	10.0	82	32.8	122	48.8	21	8.4
Level of Work Engagement	Very low		Low		Moderate		High		Very High	
	F	%	F	%	F	%	F	%	F	%
Vigor	21	8.4	31	12.4	83	33.2	59	23.6	56	22.4
Dedication	18	7.2	33	13.2	64	25.6	36	14.4	99	39.6
Absorption	20	8.0	34	13.6	70	28.0	49	19.0	77	30.8
Overall Work Engagement	23	9.2	30	12.0	67	26.8	59	23.6	71	28.4

Table3 depicts the work-life balance mean total score at 62.58 ± 14.95 , while work-related factors have the highest mean, which means that the main factors of work-life balance for nurses are the different aspects of their jobs. The mean overall work engagement score was 3.59 ± 1.71 . Among various aspects of work engagement, the mean score for dedication was also the highest, indicating that they have a strong desire to give their best and be highly engaged in their .

Table 3: Assessment of Mean and Standard Deviation of Work–Life Balance and Work Engagement among Staff Nurses (n = 250)

Variable	Mean ± SD	Median
Work–Life Balance		
Work-related factors	28.63 ± 7.66	30.0
Personal life factors	18.88 ± 5.39	19.0
WLB perception	15.07 ± 3.68	15.0
Overall Work–Life Balance	62.58 ± 14.95	63.0
Work Engagement		
Vigor	3.42 ± 1.65	3.67
Dedication	3.81 ± 1.86	4.40
Absorption	3.59 ± 1.75	4.00
Overall Work Engagement	3.59 ± 1.71	4.0

Table 4 explains the relationship between work–life balance and work engagement. A moderate positive correlation was observed between work–life balance and work engagement ($r = 0.427, p = 0.0001$), which was statistically significant. This indicates that higher levels of work–life balance are associated with higher levels of work engagement among staff nurses.

Table 4: Correlation between Work–Life Balance and Work Engagement among Staff Nurses (n = 250)

Variables	Mean	S.D.	Karl Pearson’s Correlation “r” & p-value
Work-Life Balance	62.58	14.95	$r = 0.427$ $p = 0.0001, S^*$
Work Engagement	3.59	1.71	

S* = Statistically significant at $p < 0.05$

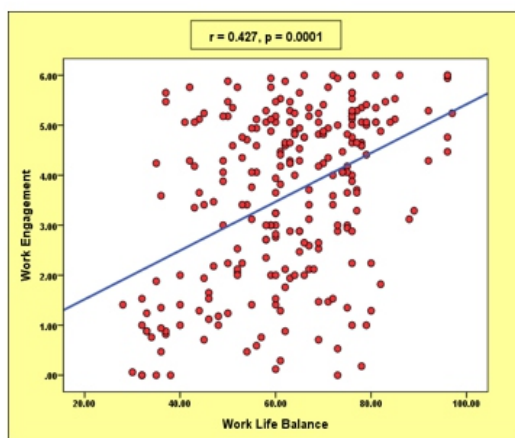


Figure 1: Scatter Diagram Showing the Correlation between Work–Life Balance and Work Engagement among Staff Nurses

Figure 1 shows a moderate positive correlation between work–life balance and work engagement of staff nurses ($r = 0.427, p = 0.0001$), indicating that better work–life balance is associated with higher levels of work engagement.

Table 5 highlights the relationship between demographic variables and the degree of work-life balance among staff nurses. Of all the variables, family type ($\chi^2 = 17.395, p = 0.008$) and number of children ($\chi^2 = 15.129, p = 0.019$) were the only ones to have statistically significant correlations. Nurses who are members of nuclear families and those without children expressed higher levels of work-life balance, which could be attributed to fewer family obligations and more effective time management. Other variables like age, gender, marital status, income, education, work experience, working hours, and department were not significantly associated ($p > 0.05$), suggesting that work-life balance is largely determined by family factors rather than professional or demographic characteristics.

Table 5: Association of Level of Work-Life Balance among the Staff Nurses with their Selected Demographic Variables (n = 250)

Demographic Variables	Low		Moderate		High		Excellent		Chi-Square Test & p-value
	No.	%	No.	%	No.	%	No.	%	
Age in Years									
21 – 30	17	6.8	61	24.4	88	35.2	11	4.4	$\chi^2=15.129$ $df=9$ $p=0.087$ N.S.
31 – 40	2	0.8	14	5.6	22	8.8	7	2.8	
41 – 50	3	1.2	7	2.8	8	3.2	2	0.8	
Above 50	3	1.2	0	0	4	1.6	1	0.4	
Gender									
Male	6	2.4	9	3.6	14	5.6	2	0.8	$\chi^2=3.506$ $df=3$ $p=0.320$ N.S.
Female	19	7.6	73	29.2	108	43.2	19	7.6	
Marital Status									
Single	17	6.8	44	17.6	73	29.2	6	2.4	$\chi^2=9.503$ $df=6$ $p=0.147$ N.S.
Married	8	3.2	37	14.8	48	19.2	15	6.0	
Divorced / Widowed	0	0	1	0.4	1	0.4	0	0	
Income									
₹15,000 – ₹30,000	17	6.7	63	25.2	100	40.0	17	6.8	$\chi^2=3.921$ $df=6$ $p=0.687$ N.S.
₹30,000 – ₹45,000	4	1.6	9	3.6	14	5.6	2	0.8	
More than ₹45,000	4	1.6	10	4.0	8	3.2	2	0.8	
Educational Qualification									
ANM	3	1.2	10	4.0	18	7.2	5	2.0	$\chi^2=3.904$ $df=6$ $p=0.690$ N.S.
Diploma in Nursing	10	8.0	68	27.2	101	40.4	15	6.0	
Bachelor of Science in Nursing (B.Sc. or P.B.B.Sc.)	2	0.8	4	1.6	3	1.2	1	0.4	
Postgraduate (M.Sc. Nursing or higher)	-	-	-	-	-	-	-	-	
Family Type									
Nuclear family	15	6.0	61	24.4	90	36.0	8	3.2	$\chi^2=17.395$ $df=6$ $p=0.008$ S*
Joint family	9	3.6	20	8.0	32	12.8	13	5.2	
Extended family	1	0.4	1	0.4	0	0	0	0	
Number of Children									
0	19	7.6	44	17.6	74	29.6	6	2.4	$\chi^2=15.129$ $df=6$ $p=0.019$ S*
1	0	0	19	7.6	22	8.8	6	2.4	
More than 2	6	2.4	19	7.6	26	10.4	9	3.6	
Experience of the Nurses Working in Intensive Care Unit									
1 – 5 years	20	8.0	63	25.2	103	41.2	17	6.8	$\chi^2=6.114$ $df=9$ $p=0.728$ N.S.
6 – 10 years	1	0.4	8	3.2	9	3.6	3	1.2	
11 – 15 years	1	0.4	5	2.0	3	1.2	0	0	
More than 15 years	3	1.2	6	2.4	7	2.8	1	0.4	
Number of Working Hours									
6 hours	5	2.0	24	9.6	39	15.6	5	2.0	$\chi^2=4.859$ $df=6$ $p=0.562$ N.S.
8 hours	18	7.2	55	22.0	75	30.0	13	5.2	
12 hours	2	0.8	3	1.2	8	3.2	3	1.2	
Current Department/Unit									
Critical care unit	8	3.2	37	14.8	44	17.6	2	0.8	$\chi^2=16.031$ $df=9$ $p=0.066$ N.S.
Specialized area	8	3.2	22	8.8	36	14.4	6	2.4	
Gynaecology / Obstetrics	0	0	5	2.0	12	4.8	6	2.4	
General ward	9	3.6	18	7.2	30	12.0	11	4.4	

Table 6 presents the link between demographic characteristics and work engagement levels of staff nurses. Males ($\chi^2 = 10.112, p = 0.039$) were the only variable that had a statistically significant association with work engagement. Female nurses disclosed higher levels of engagement than male nurses. Nevertheless, this result should be taken carefully because of the imbalanced gender composition of the sample. No significant

relationships were found between work engagement and other demographic variables such as age, marital status, income, education, family type, number of children, work experience, working hours, and department ($p > 0.05$).

Table 6: Association of the Level of Work Engagement among Staff Nurses with Their Selected Demographic Variables

Demographic Variables	Very Low		Low		Moderate		High		Very High		Chi-Square Test & p-value
	No.	%	No.	%	No.	%	No.	%	No.	%	
Age in Years											
21–30	20	8.0	21	8.4	49	19.6	37	14.8	50	20.0	$\chi^2=17.064$ $df=12$ $p=0.147$ N.S.
31–40	2	0.8	3	1.2	13	5.2	10	4.0	17	6.8	
41–50	1	0.4	5	2.0	3	1.2	9	3.6	2	0.8	
Above 50	0	0	1	0.4	2	0.8	3	1.2	2	0.8	
Gender											
Male	3	1.2	4	1.6	15	6.0	3	1.2	6	2.4	$\chi^2=10.112$ $df=4$ $p=0.039$ S*
Female	20	8.0	26	10.4	52	20.8	56	22.4	65	26.0	
Marital Status											
Single	14	5.6	15	6.0	40	16.0	31	12.4	40	16.0	$\chi^2=3.105$ $df=8$ $p=0.928$ N.S.
Married	9	3.6	15	6.0	27	10.8	27	10.8	30	12.0	
Divorced / Widowed	0	0	0	0	0	0	1	0.4	1	0.4	
Income											
₹15,000–₹30,000	19	7.6	22	8.8	50	20.0	44	17.6	62	24.8	$\chi^2=13.182$ $df=8$ $p=0.106$ N.S.
₹30,000–₹45,000	1	0.4	4	1.6	6	2.4	11	4.4	7	2.8	
More than ₹45,000	3	1.2	4	1.6	11	4.4	4	1.6	2	0.8	
Educational Qualification											
ANM	3	1.2	4	1.6	5	2.0	9	3.6	15	6.0	$\chi^2=6.514$ $df=8$ $p=0.590$ N.S.
Diploma in Nursing	19	7.6	24	9.6	60	24.0	47	18.8	54	21.6	
Bachelor of Science in Nursing (B.Sc. or P.B.B.Sc.)	1	0.4	2	0.8	2	0.8	3	1.2	2	0.8	
Postgraduate (M.Sc. Nursing or higher)	-	-	-	-	-	-	-	-	-	-	
Family Type											
Nuclear family	14	5.6	22	8.8	48	19.2	48	19.2	42	16.8	$\chi^2=12.876$ $df=8$ $p=0.116$ N.S.
Joint family	8	3.2	8	3.2	19	7.6	11	4.4	28	11.2	
Extended family	1	0.4	0	0	0	0	0	0	1	0.4	
No. of Children											
0	17	6.8	16	6.4	41	16.4	29	11.6	40	16.0	$\chi^2=6.569$ $df=8$ $p=0.584$ N.S.
1	1	0.4	6	2.4	12	4.8	15	6.0	13	5.2	
More than 2	5	2.0	8	3.2	14	5.6	15	6.0	18	7.2	
Experience of the Nurses Working in Intensive Care Unit											
1 – 5 years	19	7.6	27	10.8	52	20.8	46	18.4	59	23.6	$\chi^2=14.259$ $df=12$ $p=0.284$ N.S.
6 – 10 years	0	0	1	0.4	9	3.6	4	1.6	7	2.8	
11 – 15 years	2	0.8	2	0.8	1	0.4	2	0.8	2	0.8	
More than 15 years	2	0.8	0	0	5	2.0	7	2.8	3	1.2	
Number of Working Hours											
6 hours	7	2.8	11	4.4	24	9.6	13	5.2	18	7.2	$\chi^2=11.803$ $df=8$ $p=0.160$ N.S.
8 hours	16	6.4	15	6.0	37	14.8	42	16.8	51	20.4	
12 hours	0	0	4	1.6	6	2.4	4	1.6	2	0.8	
Current Department/Unit											
Critical care unit	7	2.8	16	6.4	28	11.2	20	8.0	20	8.0	$\chi^2=10.921$ $df=12$ $p=0.536$ N.S.
Specialized area	7	2.8	8	3.2	19	7.6	18	7.2	20	8.0	
Gynaecology / Obstetrics	1	0.4	1	0.4	3	1.2	6	2.4	8	3.2	
General ward	8	3.2	5	2.0	17	6.8	15	6.0	23	9.2	

N.S.: Non-Significant

DISCUSSION

The present study extends existing literature not by establishing a new relationship but by contextualizing it within a high-demand tertiary care environment and identifying family-related determinants as significant contributors. The study found that staff nurses reported moderate to high levels of work–life balance and moderate to high levels of work engagement. A statistically significant moderate positive correlation ($r = 0.427$, $p < 0.001$) was found between work–life balance and work engagement, indicating that better work–life balance is associated with higher work engagement in their work.

This cross-sectional study examined the relationship between work–life balance and work engagement among staff nurses working in a tertiary care center. The results demonstrated that most nurses indicated a high level of work–life balance and moderate to very high work engagement, which suggests that their overall experience at work was positive even though the clinical setting was demanding. However, the cross-sectional design limits the ability to establish a causal relationship between these variables.

Recent research highlights the importance of work-life balance in predicting nurses' work engagement, particularly in highly stressful clinical environments. Articles published in the last couple of years document that if organizations provide support through work environments, flexible working timetables, and sufficient psychological assistance, nurses will have higher work engagement and lesser burnout levels (Abuhammad *et al.*, 2025; Jotare *et al.*, 2025). The results show that work-life balance is not just the individual duty of nurses but equally their organizational support. Creating a conducive work environment with supportive conditions is a key factor in retaining nursing staff and in the provision of quality patient care.

Thus, H1 was supported, indicating that nurses who manage to harmonize their work and personal lives effectively are generally more energetic, committed, and deeply involved in their work. This finding is consistent with earlier studies that have shown a well-maintained work-life balance to be a motivating factor for the healthcare workers' engagement (De Simone *et al.*, 2018; Fukuzaki *et al.*, 2021). In fact, some data indicate that work-life balance acts as a positive factor in work engagement via family-to-work spillover and serves as a mediator in nurses' intentions to stay at their jobs.

The positive relationship between work-life balance and work engagement observed in this study is consistent with previous findings (Fukuzaki *et al.*, 2021; Rony *et al.*, 2023). This study sheds light on the very important influence of family aspects such as family composition and number of children in the Indian tertiary care setting, which has received limited attention in previous research. The data revealed that, of all the aspects of work engagement, dedication had a much higher mean than the other two aspects, absorption and vigor. A possible explanation would be that nurses keep their emotional bond with the profession even at times when they are under pressure at work, and this finding is consistent with previous nursing research where intrinsic motivation and professional commitment have been identified as the main elements of the nursing profession (Alasiry *et al.*, 2025).

The study has pinpointed the family types and the number of children as the major factors that affect work-life balance. Based on these findings, H2 was partially accepted for family type and number of children and not supported for the remaining demographic variables. Nurses from a nuclear family background and those without children indicate that their work-life balance is better; probably, they have fewer household chores, and thus, they have more time for recovery. These findings support previously published studies that revealed family pressure as the major factor leading to work-family conflict and the failure to achieve work-life balance among nurses (Yao *et al.*, 2024). Additionally, recent evidence suggests that work–life balance plays a crucial role in improving psychological well-being and job satisfaction, which further supports nurses' ability to manage both professional and personal responsibilities effectively (Zhang *et al.*, 2024).

Gender was significantly related to work engagement, as female nurses were more engaged. But such a finding needs to be interpreted with caution since the majority of the sample was female (87.6% female, 12.4% male), and the uneven sizes of the groups can be one of the reasons for the observed difference in . H3 was partially accepted only for gender and not for other demographic variables. Studies published earlier have also shown that female nurses tend to exhibit greater engagement and organizational commitment, especially if they are backed up by work environments that are conducive and pleasant (Nakagawa *et al.*, 2025). Our results of female engagement being higher align only partially with the research literature, although they are limited due to the small male sample ($n=31$, 12.4%).

The overall findings are consistent with the Job Demands-Resources (JD-R) model, which suggests that personal resources such as work-life balance are very important in increasing work engagement even when job demands are high. Organizational strategies promoting flexible scheduling, supportive supervision, and equitable workload distribution in tertiary care settings could help nurses to maintain a work-life balance, remain engaged, and be retained.

Limitations

This research used a cross-sectional study method that did not allow for a cause-and-effect relationship between work-life balance and work engagement. Moreover, the findings of the study could have limited generalizability, as it was conducted at a single tertiary care center and the sample was selected through convenience sampling. Additionally, a self-report questionnaire might have caused the participants to be prevalent, particularly in how they shape the expectations and roles of caregivers within families. i.e., give socially desirable answers. The research work failed to address other organizational as well as psychological factors that could have a profound impact on work-life balance and engagement.

Future Scope

Future research is encouraged to use longitudinal designs to monitor the changes in engagement over time. Studies comparing public and private tertiary care centers would be very valuable and could reveal more detailed aspects. Moreover, research studies that involve interventions to test how effective specific organizational policies (such as flexible rostering or on-site childcare) are in fostering nurse engagement are highly suggested.

CONCLUSION

The study found a significant positive association between work–life balance and work engagement among staff nurses. Family-related factors significantly influenced work–life balance, while gender showed an association with work engagement, which should be interpreted cautiously. These findings suggest the need for organizational strategies to support nurses in balancing professional and personal roles.

CRedit Authorship Contribution Statement

K.B: Conceived the idea, conducted the study and wrote the original version of the manuscript. H.S.J.C: Supervised the project and reviewed and edited the manuscript.

AI Assistance Declaration

The authors used AI-based tools for grammar and language editing. The scientific content, analysis, and conclusions are entirely the work of the authors.

Conflict of Interest

The authors declare that they have no competing interests.

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