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Original Research Paper

Health Care

WORK ENGAGEMENT OF DENTISTS AND DENTAL ASSISTANTS IN PRIMARY HEALTHCARE CORPORATION IN QATAR

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ABSTRACT

Background: Work engagement is a positive, significant, work-related mental state that involves enthusiasm, dedication, and attention, and it has been shown to have a direct impact on care quality. Employees who are more involved in their work, usually experience less job stress and anxiety than those who are not; increased levels of work engagement can improve dental team performance, job satisfaction, emotional wellness, and minimize the likelihood of turnover. **Objective:** to evaluate work engagement of PHCC dentists and dental assistants in Qatar. **Method:** An electronic questionnaire was emailed to the whole population of PHCC (217) dentists and (192) dental assistants distributed over 27 health centers and obtained from Dentistry Department data base after securing approval. **Study design:** quantitative, correlational, and cross - sectional study using instruments reflecting sociodemographic variables and Utrecht Work Engagement Scale (UWES) that consists of three constructs: vigor, dedication, and absorption (Schaufeli et al (2002)). **Results:** 187 out of 409 dentists and dental assistant replied to the survey with response rate of 46%. 66.8% of respondents were males, 79.1% were married, 68.4% of participants were below 45 years, 51.9% had less than 5 years of work experience with PHCC. 80.2 % had general satisfaction with the profession, and 43.9% had thoughts of leaving the profession. **Conclusion:** PHCC general dentists and dental assistants demonstrated average and above of work engagement levels with total mean score of (3.99± 1.15 SD), Dental specialists (3.74±1.29 SD), GP dentists (4.22 ± 1.21 SD), dental assistants (3.95 ± 1.02 SD).

KEYWORDS : Work Engagement, Primary Health Care Corporation (PHCC), Dentists, Dental Assistants.

INTRODUCTION

Dentistry is a physically and mentally demanding profession [1,2] dentists constantly experience straining work conditions like anxious patients [3] and time pressure [4]. Based on the National Primary Health Care Strategy and aligned to the goals of the NHS 2018- 2022 [5]; PHCC dentists and dental assistants are bound to provide quality care and mitigate challenges of dental service emerging from propagation in Qatar population [6].

PHCC is a government institution that operates under Ministry of Public Health and run 28 multidisciplinary healthcare centers that spread across the state and provide array of medical and dental services; dental service is available in 27 health centers, seven days a week [7]. To build internal capacity; human and physical resources were deployed into this development. The service has extended into specialized care in strive to enhance quality of patient care through a variety of health promotion, prevention, and intervention programs. Patients are provided access to the service by walk - in and pre-booked appointments. PHCC dentist recently started to participate in student's placement and orientation program as part of partnership between PHCC and Qatar based educational organizations [8], they are also requested to engage in professional development programs and complete 35 - 40 hours of work per week. From research, we know that health care organizations that managed to foster a culture of enhanced work environment and support of staff succeeded in adopting more patient-centered care and prevailed with quality improvement [9]; this study intends to investigate work engagement as a reverberation, of health and well-being of dentists and dental assistants in PHCC.

Work engagement as separate construct was first conceptualized by Schaufeli et al. (2002, p. 74) as - a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption [10]. Job demand resource model (JD - R) is frequently used to study work environment of dentists [11]. This model describes the relation between work and personal traits and well-being and performance at work. According to JD - R theory; with the influence of personal resources, job resources favor engagement and job demand favors stress and burnout. Job resources i.e., autonomy (control over work) and supervisor support can harness positive energy and drive high work engagement; this positive energy is often confronted by the averse stronger influence of work demand like high work pressure or irregular working hours that require continuous mental and physical effort and can eventually cause burn out; a state of work-related stress that negatively relates to engagement. Engaged employees

are energetic and perform better [12,13]. Work engagement is found to predict job satisfaction [14] life satisfaction [15] job performance [16] and intention to leave work [17]. It is also related to quality of patient care [18]; simultaneously, work engagement can be influenced by a variety of factors such as pay, career opportunities, job security, team climate, positive patient contact, participation in decision making, and performance feedback [19]. Research from dental practice depicted the role of job resources in promoting work engagement. Dentists' Experienced Job Resources Scale (DEJRS) and subscales manifested direct relation with work engagement scale and subscales (vigor 36%, absorption 39%, and dedication 47% of explained variance). (Gorter et al; 2008) [20].

Perceived organizational support (POS) is the perception of employees to the extent to which the organization values their contribution and cares about their well-being (Eisenberger et al., 1986) [21,22]. Management practices and organizational culture influence employee engagement [23]. On a study among French dental dyads (dentists and dental assistants); hierarchical regression showed that organizational support and meaningfulness of work that contributed the studied psychological factors and work conditions were strongly related to work engagement, meaningfulness of work increased dentists work engagement variance from 9% to 39% while the increase in work engagement variance of dental assistants from 7% to 50% is related to organizational support and meaningfulness [24].

This variation in results between dental dyads could be related to the complex procedures performed by dentists [25]. The result also supports the notion that work engagement varies among professions [26]. Remuneration and the opportunity for enhanced training predicted retention to the profession among trainee dental nurses [27]. Stress, burnout, depression, and anxiety are common findings among dentists [28,29]. In the UK, the relation between occupational burnout and work engagement from different work settings revealed higher burnout scores and lower work engagement scores were in dentists worked for longer time in NHS, without postgraduate qualifications, and worked in small teams [30]. Burnout and work engagement can coexist; 1 of 8 surveyed dentists in the US showed to be burned-out and still active, which can be deleterious to their health and can jeopardize patient safety [31].

METHODS

This is quantitative, descriptive, correlational, and cross-sectional study, carried out through online survey.

Study Location & Instruments

An anonymous online survey was sent to the whole population of PHCC, 217 dentists and 192 dental assistants through PHCC official email by which all workers can be accessed even those outside the country or on leave, then data was collected on Excel sheets. Responses to the questionnaire were collected between 14 February – 31 March 2021. Data collecting tool consisted of two parts, the first part was the sociodemographic variables adapted from *"Occupational Stress and Engagement in Oral Health Professionals"* [32] representing the basic characteristics of PHCC care workers: specialty, role (dental lead or not a dental lead), gender, marital status, age, work years in PHCC, practice of physical activity, satisfaction with profession, thoughts about giving up the profession. The second part is "Utrecht Work Engagement Scale" (UWES – 17) consisting of three main constructs; vigor, dedication, and absorption (UWES; Schaufeli et al., 2002). Vigor is characterized by high energy, and resilience; dedication is reflected with enthusiasm, challenge, and pride; absorption reflects one's concentration and engrossment at work. Data was interpreted as 0 to 0.99 = Very Low; 1 to 1.99 = Low; 2 to 3.99 = Medium; 4 to 4.99 = High; 5 to 6 = Very High, according to Utrecht Work Engagement Scale - Preliminary Manual [33].

Statistical Analysis

Descriptive data was computed to categorize demography. The question of UWES scale was rated using 7-point likert scale with minimum '0' (Never), maximum '6' (Always). The mean scores of UWES scale and the 3 constructs were computed by arithmetic mean. The consistency of data was done using 5% Significance. Reliability statistics of Utrecht Work Engagement Scale and Sub-scales are portrayed according to the preliminary manual in terms of minimum, maximum, median, mean, statistical error, standard deviation, range. Each scale (outcome) was individually tested with sociodemographic variables (predictors) individually tested with sociodemographic variables (predictors) using t-test/ Mann-Whitney for correlating 2 groups like "age range" and One way Anova / Kruskal Wallis for more than 2 groups like " time of work at PHCC"

The correlation between the three constructs and demographics were displayed in terms of mean and standard deviation. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Statistical significance used is $p \leq .5$. The results were evaluated according to UTRECHT WORK ENGAGEMENT SCALE. The Consistency of the data was tested with Cronbach's Alpha coefficient. The internal consistency of the three scales, vigor, dedication, and absorptio tested coincides with EUWES manual of Cronbach's Alpha (between .80 and .90).

RESULTS

Initially there was 192 logins into the survey, 5(3%) of them quit the survey and 187 (97%) completed the survey out of the whole population 409 and all questions were answered. Out of the 187, dental assistant participation was (N=86, 46.0%); general dentists (N=62, 33.2%), specialist dentists (N=39, 20.9%). 17 (9%) were dental leads. The total participation rate was 46%, which is considerably good noting that the study was carried out during COVID - 19 outbreak and dental teams were occupied with accreditation. There were 125 (66.8%) males, married majority 148 (79.1%), 128 (68.4%) were ≤ 45 years age, 97 (51.9%) up to 5 years of work experience with PHCC. 137 (73.3%) practiced physical activity, 150 (80.2%) were satisfied with the profession, and 82 (43.9%) have thoughts of leaving the profession. (See Table 1).

The age groups were distributed into 4 levels, but the data did not show significant differences, so, they were regrouped into (Up to 45 years), (Above 45 years). (See Table II).

All PHCC dental specialists (Endodontists; Oral Surgeon; Pediatric Dentist, Periodontists, Restorative Dentists) were investigated in this study because at the time of the survey, specialists were enlisted in general dental practice or Walk – In clinic. By the time this study was published, specialists were assigned in specialty clinics only.

Data from specialist dentists was not reliable because the response was weak; so, they were put into one group; the dental specialists. (See Table III).

Working experience with PHCC was grouped into up to 5 years, 6 - 10 years, 11 - 15 years, longer than 15 years because the original data was not reliable (See Table IV).

Table I: Sociodemographic Variables of PHCC General & Specialist Dentists and Dental Assistants, 2021.(N=187)

Variables	N	%
Specialty Groups		
Dental Assistants	86	46
GP	62	33

Dental Specialists	39	21
Dental Leads		
Yes	17	9
No	170	91
Gender		
Male	125	66.8
Female	62	33.2
Marital Status		
Married	148	79.1
Single	35	18.7
Other (divorced, widowed)	4	2.1
Age Range		
Up to 45 Years	128	68.4
Above 45 Years	59	31.6
Time of Work in PHC		
Up to 5 Years	97	51.9
6 - 10 Years	37	19.8
11 - 15 Years	32	17.1
Longer than 15 Years	21	11.2
Physical Activity		
Yes	137	73.3
No	50	26.7
Satisfaction with Profession		
Yes	150	80.2
No	37	19.8
Profession Give up		
Yes	82	43.9
No	105	56.1

Table II: Age Groups of PHCC Dentists & Dental Assistants

Less than 30 Years	2	1.1
Age Groups	Frequency	Percent
30 – 45 Years	126	67.4
46 - 60 Years	56	29.9
Above 60 Years	3	1.6
Total	187	100.0

Table III: PHCC Dental Specialists

	Frequency	Percent
Endodontist	15	8.0
Oral Surgeon	4	2.1
Pediatric Dentist	15	8.0
Periodontist	4	2.1
Restorative Dentistry	1	.5
Total	39	20.7

TABLE IV: WORKING EXPERIENCE WITH PHCC

	Frequency	Percent
Less than 1 Year	3	1.6
1 - 5 Years	94	50.3
6 - 10 Years	37	19.8
11 - 15 Years	32	17.1
Longer Than 15 Years	21	11.2
Total	187	100.0

Table V: *Reliability Statistics of Utrecht Work Engagement Scale for PHCC Dentists and Dental Assistants 2021. (N=187)

UWES Dimensions	Cronbach's Alpha	Min	Max	Md	M	SE	SD	R	Interpretation
Vigor	.868	0	6	4	3.91	.089	1.23	6	Medium
Dedication	.882	0	6	4.4	4.33	.092	1.27	6	High
Absorption	.841	0	6	3.66	3.75	.088	1.21	6	Medium
Total score	.942	.28	6	4	3.99	.084	1.16	5.72	Medium

Min; minimum value, Max; maximum value, Md; median, M; Mean, SE; statistical error, SD; standard deviation, R; Range.

Table VI: Work Engagement of PHCC Dentists and Dental Assistants, 2021. (N=187)

Specialty	N	%	Vigor	Dedication	Absorption	Total Score
			Mean (±SD)	Mean (±SD)	Mean (±SD)	
Dental Assistants	86	46	3.97±1.03	4.25±1.25	3.62 ±1.02	3.95 ± 1.02
GP	62	33	4.06±1.32	4.55±1.26	4.06 ±1.27	4.22 ± 1.21
Dental Specialists	39	21	3.55± 1.42	4.12± 1.27	3.55 ± 1.37	3.74±1 .29
Total	187	100	3.91±1.22	4.32±1.26	3.75 ±1.20	3.99± 1.15
p-value			.15	.126	.047	.107

SD, standard deviation

Table VII: Characteristics Of Sociodemographic Variables For Phcc General & Specialist Dentists and Dental Assistants, 2021. (N-187).

Variables	n	%	Vigor Mean (±SD)	Dedication Mean (±SD)	Absorption Mean(±SD)	Total Mean (±SD)
Specialty Groups						
Dental Assistants	86	46	3.97±1 .03	4.25±1.25	3.62 ±1.02	3.95 ± 1.02
GP	62	33	4.06±1 .32	4.55±1.26	4.06 ±1.27	4.22 ± 1.21
Dental Specialists	39	21	3.55± 1.42	4.12± 1.27	3.55 ± 1.37	3.74± 1.29
p - value			.150	.126	.047	.107
Dental Leads						
Yes	17	9	4.23±1 .30	4.51±1.38	4.24±1.22	4.33± 1.18
No	170	91	3.88±1 .22	4.30±1.25	3.70±1.19	3.96± 1.15
p - value			.227	.411	.07	.19
Gender						
Male	125	66.8	3.86±1 .26	4.30±1.31	3.65±1.196	3.94± 1.14
Female	62	33.2	4.00 ±1.16	4.37±1.16	3.96±1.20	4.11± 1.09
p - value			.77	.926	.165	.311
Marital Status						
Married	148	79.1	3.92±1 .23	4.37±1.27	3.77±1.22	4.02 ±1.17
Single	35	18.7	3.93±1 .12	4.17±1.21	3.73±.98	3.94 ±1.03
Other (divorced, widowed)	4	2.1	3.12±1 .90	4.00±1.42	3.04±2.04	3.38 ±1.78
p - Value			.76	.48	.82	.71
Age Range						
Up to 45 Years	128	68.4	3.70±1 .20	4.21±1.26	3.59±1.20	3.83± 1.14
Above 45 years	59	31.6	4.36±1 .16	4.57±1.24	4.09±1.15	4.34± 1.12
p - Value			p<.01	.050	.008	.004

Time of Work in PHC						
Up to 5 Years	97	51.9	3.82±1.31	4.37±1.30	3.64±1.25	3.94±1.12
6 - 10 Years	37	19.8	3.63±.88	4.05±1.03	3.62±.92	3.77±.87
11 - 15 Years	32	17.1	3.94±1.27	3.96±1.39	3.70±1.27	3.87±1.24
Longer than 15 Years	21	11.2	4.74±.94	5.15±.86	4.55±1.07	4.81±.87
p - value			.007	.006	.014	.005
Physical Activity						
Yes	137	73.3	4.08±1.23	4.46±1.26	3.90±1.23	4.15 ±1.16
No	50	26.7	3.43±1.08	3.96±1.196	3.34±1.01	3.58 ±1.02
p - Value			p<.01	.009	.003	p<.01
Satisfaction with profession						
Yes	150	80.2	4.21±1.03	4.63±1.09	4.01±1.06	4.28±.97
No	37	19.8	2.70±1.24	3.09±1.189	2.70±1.18	2.83±1.13
p - Value			p<.01	p<.01	p<.01	p<.01
Profession Give up						
Yes	82	43.9	3.46±1.19	3.72±1.17	3.34±1.15	3.51±1.10
No	105	56.1	4.26±1.14	4.80±1.12	4.07±1.15	4.38 ±1.05
p - Value			p<.01	p<.01	p<.01	p<.01
p<.05 statistical significance						

DISCUSSION

Vigor, dedication, and absorption showed statistical reliability; Cronbach's α coefficient values of vigor were (.868), dedication (.882), and absorption (.841). The α –value for the Total Score was (0.94). (See Table V). In general, the three-professional showed medium UWES – 17 score of (3.99±1.16) compared to dentists from UK (3.84±0.78) [34], Brazil (4.7±1.0) [35], Finland 4.32±1.03) [36] results from USA ranged between 4.5 and 5.0 [37]. The results showed high levels of Dedication (4.33), and medium levels of vigor (3.91) and absorption (3.75), displaying statistical significance with absorption (p=.047). (See table VI). A percentage of 56.5 general dentists, 43.5 specialist dentists, and 50.0 dental assistants had total work engagement score 4-6.

Work engagement level among PHCC dental staff is fairly acceptable, it reflects the high commitment and dedication of the dentists and dental assistants to their profession and persistence to pursuit high levels of dental care. Government primary care setting entails a challenging work environment, high patient influx, continuous working hours and weekend duties that can hamper power and energy distracting Dental teams from being immersed in their work. Work culture and design can negatively impact work engagement [38,39] the challenge from accreditation could have been an additional drain. General dentists showed the highest engagement levels, total UWES – 17 score (4.22 ± 1.21). Dental specialists showed the least mean total score (3.74±1.29) and the 3 constructs. 10% of dental specialists had Low (1 - 1.99) total work engagement score. The way work design is tailored and the available job resources such as , professional skills, relations with peers, work role, and positive patient contacts can diminish the negative influence of job demands on work engagement. Additional working hours can reduce work life balance. high job demands, and low job resources will eventually endure burnout. Insufficient resources expedite withdrawal behaviour that can lead to work disengagement (Demerouti et al.,2001) [40]. Having a less engaged team member can adversely affect the rest of the team.

Dental assistants had medium engagement levels (3.95 ± 1.02), These results can be attributed to local work factors, organizational culture, interpersonal relationships, ability to tolerate stress, shortage in resources and manpower or lower job title. Studies showed that work engagement can predict the intention to leave work among dental nurses [41,42]. 50.0% of PHCC dental assistants had a total score of 4-6 compared to about 75% of Spanish Primary Care nurses achieved a mean percentage of 5 or 6; the same study showed that 41% of primary and emergency Spanish nurses could develop mental disorders. [43]. There should be more focus on the needs of dental assistants especially professional development through an overall teamwork engagement. PHCC dental leads can be general or specialist dentist, they have a compound roll, and their leadership styles are critical to work engagement and work outcomes of Dentists and dental assistants under their direct supervision. Although the study did not show statistical significance between a "dental lead" and "not a dental lead" dental leads showed higher scores in the 3 constructs and the total score. The higher engagement level of dental leads can be explained by the fact that most responses from dental leads came from GP dental leads. Gender or marital status did not show statistical significance in any of the 3 constructs.

Results from this study also display the correlation between age and work engagement, professional groups above 45 years of age showed higher total engagement levels (4.34±1.12), (p=.004), vigor (4.36±1.16) (p<.01). absorption (4.09±1.15) (p=.008) and dedication (4.57±1.24) (p=.5) which confirms the relation between work engagement and older age. (See Table VII).

The Results show the correlation between work engagement and years of experience in PHCC (P=.005), like other studies; work engagement increases with personnel working for longer years in a workplace (>15 years). Dental staff who have been at work for 6-10 years showed the least score. This can be explained by work related factors (i.e., patients, boredom, etc.) or personal factors considering that this is the age of having young children who need more attention. (See Figure 1).

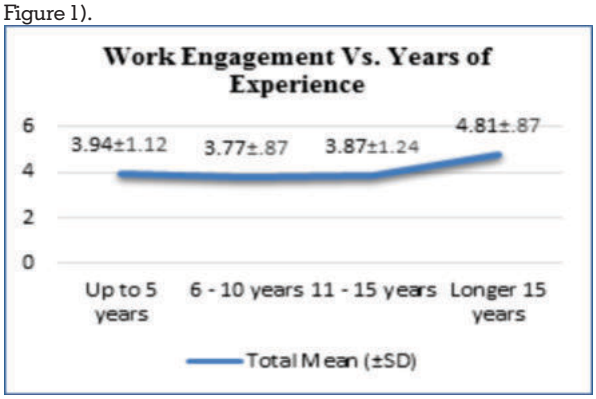

FIGURE I: Work Engagement Vs. Years of Experience

Physical activity, job satisfaction and thoughts of leaving work displayed statistical significance with vigor, dedication, absorption, and total score. Those who practiced sport had higher total engagement score (4.15 ±1.16) than who did not (3.58 ±1.02). 43.9 % of studied population had thoughts of leaving work with total engagement score, (3.51±1.10) while staff who intend to stay had high engagement score (4.38 ±1.05). The considerably high score comes out from their morale to provide good services. These figures call to put out

strategies to retain experienced professionals. The contrast in total score between satisfied (4.28±.97) and dissatisfied (2.83±1.13) dental staff is explicit. The results emphasize the direct relation between job satisfaction and work engagement. (See Figure II).

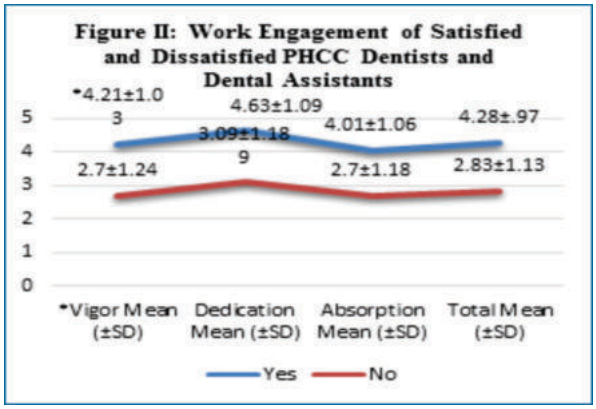

FIGURE II: Work Engagement of Satisfied and Dissatisfied PHCC Dentists and Dental Assistants.

*Mean and SD, values, Yes=satisfied, No=unsatisfied

CONCLUSION & RECOMMENDATIONS

Within the limitation of this study, work engagement of general dentists of PHCC showed the highest engagement levels compared to dental assistants and specialists dentists .

Specialists dentists are the least engaged at work. 20% of dentists and dental assistants are dissatisfied with the profession with 2.83 total engagement score. Dentists and dental assistants above 45 years of age who intended to stay in the clinical practice to provide good services showed high vigor, absorption and dedication which confirms the relation between work engagement and older age. Job resources such as positive clinical interactions, role at work, peer relations can help to mitigate the negative impact of job demand and enhance work engagement. Increased working hours may result in a loss of work-life balance. Burnout will occur because of excessive job demand and limited resources. Inadequate resources hasten withdrawal behaviour, which might result in work disengagement. More attention should be paid to the needs of dental assistants, particularly professional growth through an overall teamwork involvement, because a disengaged team member can have a negative impact on the rest of the team. Research recommends building a robust health care system through consolidating a level where patient care and health and wellbeing of practitioners intersect [44] stimulate job and personal resources through profession specific tailored intervention [45] and to disengage when out of work to maintain health and wellbeing [46].

Limitations

1. The study does not include dentists and dental assistants from private sector or other government health institutions, so it cannot be generalized to represent work engagement of all dental dyads in Qatar.
2. It does not explore variables that contribute to work engagement. i.e., work conditions.

Practical implications

this study can be benefitting to several departments at PHCC; develop targeted professional development programs, create tailored work engagement programs for dentists and dental assistants, provide training in leadership and management that incorporate work engagement strategies, and investigate other ill health and occupational health hazards at workplace.

Ethical aspects

The study is approved by Department of Clinical Research with ref. no. PHCC/DCR/2020/10/126, the voluntary participation and anonymity was well explained, the investigators are workers for PHCC, but this study was done for the sake of research.

Conflict of Interest

The authors declare that there is no conflict of interest.

Funding Sources

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