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Happiness among dentists: a multi-scale, multi-national study from 21 countries

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Objectives: The extent to which dentists are happy with their profession and their life has not been well studied. The present study aimed to explore the level of happiness, satisfaction with life and psychological well-being among a sample of dental professionals from 21 countries. **Materials and Methods:** The sample comprised 2,200 dentists from 21 countries. Three scales – Subjective Happiness Scale (SHS), Satisfaction With Life Scale (SWLS), and Affect Balance Scale (ABS) – were used to measure the subjective responses. Data related to demographic and social characteristics were recorded. Mann–Whitney and Kruskal–Wallis tests were used as appropriate. Scales were correlated, and multiple linear regression analyses were employed to identify the independent determinants of SHS, SWLS and ABS. Data were analysed using the SPSS software program; a value of $P < 0.05$ was considered significant. **Results:** The overall mean scores of SHS, SWLS and ABS were 18.53 ± 5.06, 23.06 ± 6.25 and 1.26 ± 2.40, respectively, with significant differences found across countries: dentists working in Croatia, Peru and Serbia recorded the highest scores, unlike dentists practicing in Yemen, Syria, and Iraq, who recorded the lowest scores. There were significant, moderately positive correlations between the various scales: SHS and SWLS: $r = 0.535$, $P < 0.001$; SHS and ABS: $r = 0.58$, $P < 0.001$; and SWLS and ABS: $r = 0.533$, $P < 0.001$. Country of practice, age, qualification and monthly income were the significant independent predictors of SHS, SWLS and ABS. **Conclusion:** Country of residence and social characteristics were associated with dentists' responses regarding their feelings and subjective well-being.

Key words: *Dental profession, happiness, subjective well-being, quality of life*

INTRODUCTION

Happiness is defined as 'the quality or state of being happy or to be satisfied that something is good or right; not anxious'[1]. It is an emotional state of well-being that represents contentment at the lowest end of the scale and intense enjoyment at the highest, and reflects the individual's subjective well-being as well as their quality of life[2–4]. Indeed, being happy improves the ability of an individual to think positively, which, in turn, ensures high income, accomplishment of set goals and affording options[5], the ability to gain support from work colleagues[6–8] and success in the workplace[9]. Being happy may help individuals perceive, interpret and adapt these life events in a different way from unhappy persons. Basically, happiness may be influenced by several social contexts, including an individual's culture, religion, environment, social values, social relationships and income, which shape the meanings we give to things and increase one's ability to make choices[5,9–15]. Moreover, it has been suggested that happy and satisfied persons are more likely to be successful in their workplace, interact positively with other people and pursue new goals[6,16].

Basically, a profession provides job security and is considered as one of the traditional objective indicators for measuring career success[17,18], which seemingly contributes to happiness (the experience of positive affect)[9]. In this context, dentists are claimed to have successful careers, and the dental profession is classified as one of the top two careers listed by Forbes[19]. However, reports on the association between a dental career and happiness are scarce. In the study by Kaipa et al.[20], in 2017, high happiness scores were reported among dentists, although such scores were higher among those who were engaged in both clinical practice and academic education. Conversely, however, the dental profession is well known to be associated with health concerns, including physical tiredness, psychological stressors (e.g., managing time, staff and patients' behaviours), pressure to earn money, and emotional exhaustion and burnout that lead to poor general and mental health and to lower levels of performance[21,22]. Primarily, dentistry is a stressful and hazardous profession, and this is supported by many reports from both developed and developing countries[23,24].

Few studies have assessed happiness among dentists[20,28,29]. To the best of our knowledge, there is no single report that has explored the level of happiness of dental practitioners across different nations. Therefore, the present study sought to address this gap through determining the level of happiness of dental practitioners from 21 countries and how such happiness might be correlated with the emotional state of well-being and satisfaction of the dentist's own life. The potential determinants of such perceived happiness were also explored.

MATERIALS AND METHODS

Study design

This was a multi-scale [owing to the use of three instruments (questionnaires)] and multi-country [owing to the inclusion of participants from different countries worldwide; details are given below] cross-sectional study conducted in March 2018. Study participants were limited to general dental practitioners and dental specialists. Dental students, assistants and technicians were excluded.

Sample recruitment

The idea was shared with interested researchers worldwide, who were asked for help with data collection. Communications were made through direct calls or emails to friends, peers and collaborators. The principal investigator (MA) eventually reached out to possible co-researchers in 25 countries, 21 (84%) of whom, representing all six World Health Organization (WHO) regions, agreed to help with the study. Each investigator was required to manage nation-specific administrative issues, including ethical clearance if applicable and recruitment of study participants according to the established guidelines for such purposes. Participation was made through an online survey. In brief, a link was created to the survey (the three questionnaires), and the sensitivity of the Internet Protocol (IP) address was made active, thereby restricting each user to a single entry. The link to the survey was sent to social network (WhatsApp, Facebook and Instagram) and Short Message Services (SMS) platforms, institutional and professional webpages, email addresses and other texting programs of the potential dentist participants. Hard copies of these questionnaires were also made available for co-investigators who could approach dentists at scientific or academic meetings.

Study instruments

Three scales (questionnaires) were used in the current study. The scales are well known, validated and reliable, and are widely used as assessment tools designed

for evaluating subjective well-being. They have been translated into many languages, and their psychometric properties have been validated for different populations[2,20,30–37]. The dentists recruited for this study were familiar with the use of English and, for this reason, data collection was in English. Translated versions of the instruments were also made available for those who requested them. The details of these scales (questionnaires) are as follows.

Subjective Happiness Scale

The Subjective Happiness Scale (SHS) was developed by Lyubomirsky and Lepper[30] to measure global subjective happiness. It consists of four self-reported items scored on a 7-point Likert scale. The first item measures how a person thinks that he/she is happy in general (scores range from 1 = not a very happy person to 7 = a very happy person), how a person is happy compared to his/her peers (scores range from 1 = less happy person to 7 = more happy person), and how one is generally very happy or generally not very happy, respectively (scores range from 1 = not at all to 7 = a great deal). To calculate the summary score of the scale (the average of the total scores), the scores of item 4 must be reversed first. The higher the score obtained, the higher the level of happiness. The maximum score is 28 and the minimum score is 4.

Satisfaction With Life Scale

The Satisfaction With Life Scale (SWLS) is a 5-item self-reported scale that was developed by Diener et al.[2] to assess satisfaction with one's own life as a whole (not to measure the positive or negative affect). Like the SHS, responses to the SWLS are scored on a 7-item Likert scale ranging from 7 = strongly agree to 1 = strongly disagree. The summary score is the average of the total scores. The higher the score obtained, the higher the level of satisfaction. The maximum score is 35 and the minimum score is 5.

Affect Balance Scale

The Affect Balance Scale (ABS) is also known as Bradburn's scale of psychological well-being[38]. It consists of two components: the positive affect and the negative affect. Each component comprises five items enquiring about participants' feelings during the past few weeks. The participants answer either 'Yes' or 'No' to each item. Data are coded as 'Yes = 1' and 'No = 0'. The sum of each component is calculated. The final score of the ABS is calculated by subtracting the negative affect scores from the positive affect scores. The maximum score is +5 and the minimum score is −5.

The following sociodemographic variables were included in the questionnaire: country of practice; gender; age; marital status; years since graduation; qualification; type of work; work experience (in years); and approximate estimate of the monthly income (in $US).

Data analysis

The outcome variables for this study were SHS, SWLS and ABS. Descriptive statistics were used to present the sociodemographic profile of the study participants. Whether or not the data followed a normal distribution was assessed using the Shapiro–Wilk test. Bivariate analyses (using Mann–Whitney *U* and Kruskal–Wallis tests, as appropriate) were conducted to determine differences among SHS, SWLS and ABS according to the various sociodemographic factors investigated. Potential pairwise correlations among SHS, SWLS and ABS were also performed using Spearman's correlation coefficient test. In order to adjust for the effects of the potential confounding factors, multiple linear regression analyses were conducted with the aim to determine the independent determinants for the scales used (SHS, SWLS, and ABS). The potential collinearity was assessed using 'Tolerance' and 'Variance Inflation Factor' (VIF). Categorical independent variables were converted into dummy variables for ease of analysis. All statistical tests were conducted using IBM SPSS Statistics for Windows, Version 25.0 (Released 2017; IBM Corp., Armonk, NY, USA), with $P < 0.05$ being considered as significant.

RESULTS

A total of 2,200 dentists from 21 countries located in four continents were recruited for the study. Cronbach's alpha (min.–max.) values (a measure of internal consistency) for the questionnaires used in this study were 0.75 (0.59–0.85) for SHS, 0.84 (0.68–0.90) for SWLS, 0.67 (0.59–0.74) for the positive effect component of ABS and 0.68 (0.49–0.75) for the negative effect component of ABS. The data did not follow a normal distribution. *Table 1* highlights the sociodemographic characteristics of the study participants. More than half of the participants were female (58.3%), married (56.5%) and general practitioners (59.1%). Less than half had more than 5 years of clinical experience (42%), worked in private dental facilities (30.6%) and earned more than $1,000 per month (44.1%). Further details on the distribution of demographic variables among the participating countries are given in Appendix 1.

Table 2 shows the summary scores for SHS, SWLS and ABS according to country of practice. The overall mean score for SHS was 18.53 ± 5.06, with

participants from Peru (21.40 ± 3.88), Croatia (21.11 ± 4.28) and Nigeria (20.83 ± 5.69) recording the highest scores. The overall mean score for SWLS was 23.06 ± 6.25, with participants from Croatia (26.86 ± 4.39), Peru (25.79 ± 5.86) and Serbia (24.96 ± 5.25) recording the highest scores. The overall mean score for ABS was 1.26 ± 2.40, with participants from Croatia (2.62 ± 1.78), Peru (2.63 ± 1.94) and Serbia (2.08 ± 1.86) recording the highest scores. Statistically significant differences were found across countries ($P < 0.001$).

As shown in *Table 3*, SHS and ABS were positively associated with the following variables: participants' age (the subgroup ≥50 years had the highest scores: 20.17 ± 4.85 for SHS and 2.28 ± 2.30 for ABS); years since graduation (the subgroup >10 years had the highest scores: 19.21 ± 5.15 for SHS and 1.66 ± 2.37 for ABS); qualification (specialists had the highest scores: 19.31 ± 4.98 for SHS and 1.60 ± 2.34 for ABS); type of work setting [working in both public clinics and academic education had the highest score (19.56 ± 5.86) for SHS, and working in both private clinics and academic education had the highest score (1.60 ± 2.35) for ABS]; duration of experience (the subgroup >10 years had the highest scores: 19.24 ± 5.14 for SHS and 1.70 ± 2.33 for ABS); and monthly income (the subgroup >$3,000 had the highest scores: 19.64 ± 4.81 for SHS and 1.77 ± 2.35 for ABS). Satisfaction with one's own life (SWLS) was revealed to be positively associated with the same variables mentioned in the previous sentence, in addition to marital status (being married and working in both private clinics and academic education had higher scores: 23.60 ± 6.11 and 24.60 ± 5.93, respectively).

There were significant, moderately positive correlations between the various scales: SHS and SWLS ($r = 0.54$, $P < 0.001$); SHS and ABS ($r = 0.58$, $P < 0.001$); and SWLS and ABS ($r = 0.53$, $P < 0.001$).

Results of the multiple linear regression analyses are presented in *Tables 4–6*. The results revealed that country of practice, age, qualification, type of work setting and monthly income were statistically significant independent determinants of SHS (*Table 4*). For SWLS, country of practice, qualification, age, marital status, type of work setting and monthly income were the statistically significant independent determinants (*Table 5*). Country of practice, qualification, age and monthly income were the statistically significant determinants of ABS (*Table 6*). Upon statistical adjusting, 'years since graduation' and 'years of experience' had no further effects on any of the scales. The 'gender' variable was not included in any multiple linear regression analysis, simply because it was not statistically significant in the bivariate analyses.

Table 1 Personal and professional background of participants ($N = 2,200$)

Variable	*n*	%
Country		
Brazil	99	4.5
Croatia	66	3.0
Egypt	116	5.3
India	76	3.5
Iraq	88	4.0
Jordan	92	4.2
KSA	134	6.1
Kuwait	126	5.7
Lebanon	100	4.5
Libya	106	4.8
Malaysia	94	4.3
Nepal	54	2.5
Nigeria	108	4.9
Pakistan	63	2.9
Peru	172	7.8
Serbia	118	5.4
South Africa	196	8.9
Sudan	88	4.0
Syria	73	3.3
Turkey	96	4.4
Yemen	135	6.1
Gender		
Male	918	41.7
Female	1,282	58.3
Age group		
<30 years	904	41.1
30–39 years	754	34.3
40–50 years	347	15.8
≥50 years	195	8.9
Marital status		
Single	855	38.9
Married	1,244	56.5
Separated	25	1.1
Divorced	65	3.0
Widowed	11	0.5
Years since graduation		
<5 years	835	38.0
5–10 years	509	23.1
>10 years	856	38.9
Qualification		
General practitioner	1,300	59.1
Specialist	900	40.9
Type of work		
None	117	5.3
Private	673	30.6
Public	406	18.5
Academic	172	7.8
Both private and public	269	12.2
Both private and academic	371	16.9
Both public and academic	142	6.5
Other	50	2.3
Experience		
<5 years	925	42.0
5–10 years	496	22.5
>10 years	779	35.4
Monthly income ($US)		
<$1,000	970	44.1
$1,000–$3,000	662	30.1
>$3,000	568	25.8

DISCUSSION

Although dentistry is recognised as one of the most prestigious and financially rewarding professions, a dental career is a very stressful and hazardous job

Table 2 Mean scores for the Subjective Happiness Scale (SHS), Satisfaction With Life Scale (SWLS) and Affect Balance Scale (ABS), according to country of practice

Country	*n*	SHS	SWLS	ABS
All	2,200	18.53 ± 5.06	23.06 ± 6.25	1.26 ± 2.40
Brazil	99	17.65 ± 5.26	21.21 ± 7.24	0.81 ± 2.51
Croatia	66	21.11 ± 4.28	26.86 ± 4.39	2.62 ± 1.78
Egypt	116	17.35 ± 4.28	21.97 ± 6.01	0.29 ± 2.18
India	76	19.14 ± 4.64	22.80 ± 5.71	1.71 ± 2.35
Iraq	88	14.93 ± 4.50	22.19 ± 5.49	0.24 ± 2.44
Jordan	92	17.88 ± 4.75	22.90 ± 6.20	0.53 ± 2.43
KSA	134	17.08 ± 4.68	22.77 ± 5.54	0.78 ± 2.36
Kuwait	126	18.63 ± 4.95	23.65 ± 5.77	1.02 ± 2.50
Lebanon	100	18.58 ± 4.78	24.47 ± 5.76	1.78 ± 2.29
Libya	106	16.37 ± 5.15	23.06 ± 6.72	0.80 ± 2.44
Malaysia	94	19.28 ± 3.73	22.81 ± 5.59	1.53 ± 2.47
Nepal	54	20.13 ± 5.03	22.69 ± 5.48	2.00 ± 2.09
Nigeria	108	20.83 ± 5.69	19.49 ± 7.30	1.69 ± 2.37
Pakistan	63	17.97 ± 4.78	23.29 ± 6.06	1.00 ± 2.67
Peru	172	21.40 ± 3.88	25.79 ± 5.86	2.63 ± 1.94
Serbia	118	20.79 ± 4.93	24.96 ± 5.25	2.08 ± 1.86
South Africa	196	19.93 ± 4.72	23.52 ± 7.00	1.56 ± 2.44
Sudan	88	17.82 ± 4.59	22.72 ± 5.66	1.11 ± 1.96
Syria	73	17.42 ± 5.32	20.59 ± 6.60	0.41 ± 2.66
Turkey	96	17.52 ± 5.03	22.25 ± 6.22	0.99 ± 2.39
Yemen	135	15.74 ± 4.77	22.33 ± 5.68	0.45 ± 2.20
P-value		<0.001	<0.001	<0.001

Values are given as mean ± SD.
KSA, Kingdom of Saudi Arabia.

which is associated with several physical and mental stressors that ultimately affect a dentist's overall quality of life[20,21,39–45]. It is unknown whether such a prestigious profession is a source of happiness or is associated with unhappiness resulting from the physical and mental stressors. Studies on the state of happiness and job satisfaction among dental professionals are scarce worldwide[20,46–48]. The present, cross-sectional multiscale study investigated the state of subjective happiness and associated factors among dental practitioners from 21 different countries (representing eight regions in four continents), diverse socio-economic backgrounds and varied work environments. To the best of our knowledge, this is the first and largest study worldwide among dental practitioners. Therefore, comparison with other studies in the literature will be limited.

Different scales have been used widely to measure subjective well-being[49]. The relationship between SHS, SWLS and ABS was evident in our study and has been reported in the literature. Tatarkiewiez stated that happiness requires total satisfaction, that is, satisfaction with life as a whole[50]. In one definition of ABS: 'it is a measure of subjective well-being and can be used as an indicator for overall happiness'[50]. Happiness is also known as 'life satisfaction and subjective well-being'[51,52]. Further obvious evidence supporting the relationship between SHS, SWLS and ABS is that in all of those three scales, the highest scores were reported by dentists from Croatia, Peru and Serbia. Although some reports were not conclusive regarding whether ABS is suitable for use across nations[53], others reported that ABS is indicated for different societies around the world and reflects mainly differences in their cultures[54]. The internal consistency of the selected scales revealed acceptable values of reliability,

Table 3 Univariate analysis of the scales according to the study variables

Variable	*n*	Study scales		
		SHS	SWLS	ABS
Gender				
Male	918	18.37 ± 4.97	22.92 ± 6.51	1.31 ± 2.44
Female	1,282	18.64 ± 5.12	23.15 ± 6.06	1.22 ± 2.38
P-value		0.117	0.524	0.375
Age group				
<30 years	904	17.94 ± 4.93	22.32 ± 6.18	0.94 ± 2.39
30–39 years	754	18.39 ± 5.07	22.64 ± 6.35	1.11 ± 2.41
40–50 years	347	19.46 ± 5.15	24.60 ± 6.13	1.81 ± 2.26
≥50 years	195	20.17 ± 4.85	25.32 ± 5.38	2.28 ± 2.30
P-value		<0.001	<0.001	<0.001
Marital status				
Single	855	18.38 ± 4.87	22.33 ± 6.40	1.18 ± 2.37
Married	1,244	18.62 ± 5.17	23.60 ± 6.11	1.30 ± 2.44
Separated	25	18.96 ± 4.75	21.20 ± 6.68	1.20 ± 2.36
Divorced	65	18.46 ± 5.52	22.71 ± 6.16	1.34 ± 2.34
Widowed	11	19.18 ± 5.34	23.45 ± 4.11	2.27 ± 2.10
P-value		0.865	<0.001	0.495
Years since graduation				
<5 years	835	17.79 ± 4.88	22.09 ± 6.09	0.90 ± 2.36
5–10 years	509	18.60 ± 5.02	22.71 ± 6.32	1.17 ± 2.44
>10 years	856	19.21 ± 5.15	24.21 ± 6.19	1.66 ± 2.37
P-value		<0.001	<0.001	<0.001
Qualification				
General practitioner	1,300	17.99 ± 5.04	22.36 ± 6.34	1.02 ± 2.42
Specialist	900	19.31 ± 4.98	24.06 ± 5.98	1.60 ± 2.34
P-value		<0.001	<0.001	<0.001
Type of work				
None	117	15.88 ± 4.69	20.87 ± 5.98	0.31 ± 2.18
Private	673	18.73 ± 5.15	22.95 ± 6.47	1.36 ± 2.50
Public	406	18.34 ± 4.83	22.42 ± 6.17	1.07 ± 2.34
Academic	172	18.33 ± 4.71	23.27 ± 5.68	1.45 ± 2.39
Both private and public	269	18.29 ± 4.93	22.76 ± 6.19	1.11 ± 2.34
Both private and academic	371	19.17 ± 4.76	24.60 ± 5.93	1.60 ± 2.35
Both public and academic	142	19.56 ± 5.86	23.65 ± 6.45	1.44 ± 2.30
Other	50	17.84 ± 5.72	22.48 ± 6.21	0.64 ± 2.41
P-value		<0.001	<0.001	<0.001
Experience				
<5 years	925	17.71 ± 4.94	22.01 ± 6.16	0.86 ± 2.38
5–10 years	496	18.94 ± 4.93	22.93 ± 6.28	1.29 ± 2.44
>10 years	779	19.24 ± 5.14	24.38 ± 6.11	1.70 ± 2.33
P-value		<0.001	<0.001	<0.001
Monthly income ($US)				
<$1,000	970	17.44 ± 5.08	21.71 ± 6.27	0.84 ± 2.36
$1,000–$3,000	662	19.17 ± 4.91	23.69 ± 5.87	1.42 ± 2.42
>$3,000	568	19.64 ± 4.81	24.60 ± 6.18	1.77 ± 2.35
P-value		<0.001	<0.001	<0.001

Values are given as mean ± SD.
ABS, Affect Balance Scale; SHS, Subjective Happiness Scale; SWLS, Satisfaction With Life Scale.

Table 4 Multiple linear regression analysis of the Subjective Happiness Scale (SHS), according to the study variables

Variable	Coefficient (*B*)	SE (*B*)	95% CI		*P*-value
			lower	upper	
Qualification					
General practitioner	0.91	0.26	0.40	1.41	**0.000**
Specialist	Reference				
Country					
Brazil	−3.22	0.76	−4.71	−1.73	**0.000**
Egypt	−2.00	0.76	−3.49	−0.51	**0.009**
India	−1.05	0.81	−2.63	0.53	0.191
Iraq	−4.98	0.78	−6.50	−3.45	**0.000**
Jordan	−2.22	0.77	−3.72	−0.71	**0.004**
KSA	−2.97	0.73	−4.39	−1.55	**0.000**
Kuwait	−2.18	0.75	−3.65	−0.70	**0.004**
Lebanon	−3.00	0.76	−4.49	−1.52	**0.000**
Libya	−2.75	0.76	−4.24	−1.26	**0.000**
Malaysia	−1.30	0.78	−2.84	0.23	0.096
Nepal	0.58	0.87	−1.14	2.29	0.509
Nigeria	1.05	0.74	−0.40	2.50	0.154
Pakistan	−1.60	0.84	−3.25	0.06	0.059
Peru	1.49	0.70	0.12	2.86	**0.034**
Serbia	1.61	0.75	0.14	3.08	**0.032**
South Africa	−0.86	0.69	−2.23	0.50	0.214
Sudan	−2.06	0.78	−3.58	−0.54	**0.008**
Syria	−2.06	0.82	−3.67	−0.45	**0.012**
Turkey	−2.88	0.75	−4.35	−1.41	**0.000**
Yemen	−3.56	0.73	−5.00	−2.13	**0.000**
Croatia	Reference				
Age					
<30 years	−0.03	0.59	−1.18	1.13	0.965
30–39 years	−1.10	0.45	−1.99	−0.21	**0.015**
40–49 years	−0.36	0.43	−1.20	0.47	0.394
≥50 years	Reference				
Graduation					
<5 years	−0.18	0.62	−1.39	1.04	0.777
5–10 years	−0.24	0.49	−1.21	0.73	0.631
>10 years	Reference				
Work					
None	−1.31	0.55	−2.39	−0.23	**0.018**
Private	−0.41	0.33	−1.07	0.24	0.216
Public	−0.79	0.39	−1.55	−0.03	**0.042**
Academic	−0.70	0.44	−1.56	0.17	0.116
Both private and public	−0.17	0.39	−0.94	0.60	0.671
Both public and academic	−0.15	0.48	−1.09	0.78	0.749
Others	−0.11	0.72	−1.53	1.30	0.876
Both private and academic	Reference				
Experience					
<5 years	0.05	0.63	−1.19	1.29	0.939
5–10 years	0.74	0.52	−0.27	1.76	0.153
>10 years	Reference				
Income ($US)					
<$1,000	−2.38	0.36	−3.07	−1.68	**0.000**
$1,000–$3,000	−0.90	0.29	−1.48	−0.33	**0.002**
>$3,000	Reference				

KSA, Kingdom of Saudi Arabia; SE, standard error.
Bold values indicate significance at $P < 0.05$.

knowing that the internal consistency of the two domains of the ABS questionnaire was tested independently because of the contradictory aspects they measure[52,55].

Table 5 Multiple linear regression analysis of Satisfaction With Life Scale (SWLS), according to the study variables

Variable	Coefficient (*B*)	SE (*B*)	95% CI		*P*-value
			lower	upper	
Qualification					
General practitioner	0.85	0.33	0.21	1.49	**0.010**
Specialist	Reference				
Country					
Brazil	−5.16	0.96	−7.05	−3.27	**0.000**
Egypt	−2.38	0.96	−4.26	−0.49	**0.014**
India	−3.00	1.02	−5.00	−0.99	**0.003**
Iraq	−3.79	1.00	−5.75	−1.82	**0.000**
Jordan	−2.80	0.97	−4.71	−0.89	**0.004**
KSA	−2.71	0.92	−4.51	−0.91	**0.003**
Kuwait	−2.81	0.95	−4.68	−0.94	**0.003**
Lebanon	−3.38	0.96	−5.26	−1.50	**0.000**
Libya	−0.93	0.96	-2.81	0.96	0.335
Malaysia	−3.17	0.99	−5.11	−1.23	**0.001**
Nepal	−2.07	1.10	−4.24	0.10	0.061
Nigeria	−5.72	0.94	−7.56	−3.88	**0.000**
Pakistan	−1.24	1.07	−3.33	0.86	0.246
Peru	1.03	0.89	−0.71	2.78	0.246
Serbia	0.76	0.95	−1.10	2.62	0.423
South Africa	−3.10	0.88	−4.82	−1.38	**0.000**
Sudan	−2.65	0.98	−4.58	−0.72	**0.007**
Syria	−4.74	1.05	−6.80	−2.68	**0.000**
Turkey	−3.72	0.95	−5.58	−1.86	**0.000**
Yemen	−2.07	0.93	−3.89	−0.26	**0.025**
Croatia	Reference				
Age					
<30 years	−0.26	0.75	−1.74	1.22	0.730
30–39 years	−1.88	0.58	−3.01	−0.74	**0.001**
40–49 years	−0.71	0.54	−1.78	0.35	0.191
≥50 years	Reference				
Marital status					
Single	−1.17	0.32	−1.80	−0.54	**0.000**
Separated	−3.76	1.20	−6.11	−1.41	**0.002**
Divorced	−2.00	0.76	−3.50	−0.51	**0.008**
Widowed	−0.59	1.79	−4.10	2.92	0.742
Married	Reference				
Graduation					
<5 years	0.34	0.79	−1.21	1.89	0.670
5–10 years	−0.09	0.63	−1.31	1.14	0.890
>10 years	Reference				
Work					
None	−1.12	0.70	−2.49	0.24	0.108
Private	−0.83	0.42	−1.66	−0.01	**0.048**
Public	−1.24	0.49	−2.20	−0.28	**0.012**
Academic	−0.59	0.56	−1.69	0.50	0.290
Both private and public	−0.77	0.50	−1.74	0.21	0.123
Both public and academic	−0.45	0.60	−1.64	0.73	0.455
Other	−0.71	0.91	−2.50	1.07	0.434
Both private and academic	Reference				
Experience					
<5 years	−1.09	0.80	−2.66	0.48	0.173
5–10 years	−0.26	0.65	−1.54	1.03	0.695
>10 years	Reference				
Income ($US)					
<$1,000	−3.06	0.45	−3.94	−2.17	**0.000**
$1,000–$3,000	−1.06	0.37	−1.79	−0.33	**0.004**
>$3,000	Reference				

KSA, Kingdom of Saudi Arabia; SE, standard error.
Bold values indicate significance at $P < 0.05$.

Table 6 Multiple linear regression analysis of Affect Balance Scale (ABS), according to the study variables

Variable	Coefficient (*B*)	SE (*B*)	95% CI		*P*-value
			lower	upper	
Qualification					
General practitioner	0.27	0.13	0.03	0.52	**0.031**
Specialist	Reference				
Country					
Brazil	−1.73	0.37	−2.46	−1.00	**0.000**
Egypt	−1.59	0.37	−2.32	−0.86	**0.000**
India	−0.55	0.39	−1.32	0.22	0.165
Iraq	−1.95	0.38	−2.69	−1.20	**0.000**
Jordan	−1.68	0.37	−2.41	−0.94	**0.000**
KSA	−1.38	0.35	−2.07	−0.68	**0.000**
Kuwait	−1.53	0.37	−2.25	−0.81	**0.000**
Lebanon	−1.13	0.37	−1.86	−0.41	**0.002**
Libya	−1.00	0.37	−1.72	−0.27	**0.007**
Malaysia	−0.93	0.38	−1.67	−0.18	**0.015**
Nepal	0.02	0.43	−0.82	0.85	0.970
Nigeria	−0.43	0.36	−1.14	0.27	0.230
Pakistan	−0.98	0.41	−1.79	−0.18	**0.017**
Peru	0.53	0.34	−0.14	1.20	0.120
Serbia	0.10	0.37	−0.62	0.82	0.780
South Africa	−1.02	0.34	−1.69	−0.36	**0.003**
Sudan	−1.03	0.38	−1.77	−0.29	**0.006**
Syria	−1.65	0.40	−2.43	−0.86	**0.000**
Turkey	−1.34	0.37	−2.06	−0.63	**0.000**
Yemen	−1.43	0.36	−2.13	−0.73	**0.000**
Croatia	Reference				
Age					
<30 years	−0.43	0.29	−0.99	0.14	0.138
30–39 years	−0.86	0.22	−1.29	−0.42	**0.000**
40–49 years	−0.33	0.21	−0.74	0.07	0.109
≥50 years	Reference				
Graduation					
<5 years	0.11	0.30	−0.48	0.70	0.717
5–10 years	0.00	0.24	−0.47	0.47	0.997
>10 years	Reference				
Work					
None	−0.39	0.27	−0.91	0.14	0.152
Private	−0.08	0.16	−0.40	0.24	0.632
Public	−0.21	0.19	−0.58	0.16	0.270
Academic	0.04	0.22	−0.38	0.46	0.851
Both private and public	−0.05	0.19	−0.43	0.33	0.799
Both public and academic	−0.27	0.23	−0.73	0.19	0.252
Other	−0.36	0.35	−1.05	0.33	0.306
Both private and academic	Reference				
Experience					
<5 years	−0.29	0.31	−0.90	0.31	0.347
5–10 years	0.05	0.25	−0.45	0.55	0.842
>10 years	Reference				
Income ($US)					
<$1,000	−0.94	0.17	−1.28	−0.60	**0.000**
$1,000–$3,000	−0.54	0.14	−0.82	−0.26	**0.000**
>$3,000	Reference				

KSA, Kingdom of Saudi Arabia; SE, standard error.
Bold values indicate significance at $P < 0.05$.

Overall, the dentists surveyed showed a moderate level of happiness; however, there was great variability across countries. Dentists in Peru, Croatia and Serbia reported the highest happiness scores, whereas such scores were lowest for dentists in Iraq, Yemen and Syria. Such a wide discrepancy can be explained largely by variability in socio-economic backgrounds, cultural factors and diverse working environments[46,56,57]. Similar findings have been reported among healthcare workers other than dentists[58]. It can be argued that such differences in happiness perceived by dentists, both within a country and between countries, may affect their performance, and may be reflected in self-care and even in patient care, indicating an urgent need for training programmes on stress management and achieving professional satisfaction.

Not surprisingly, the very low scores in war-torn countries like Yemen, Iraq, Syria and Libya clearly indicate the devastating effects of war on people's lives at different levels, including the health sector. What is surprising, however, is the low SWLS scores reported by dentists in Nigeria, despite rather high SHS scores, indicating how these participants made a clear distinction between being happy and satisfied with life. Basically, the effect of war on happiness is expected and obvious, despite the scarceness of the relevant studies in the literature[59–61]. The catastrophic consequences of war on society (e.g., loss of lives, permanent disability, destruction of infrastructures and decline in average income) will negatively and directly reflect on one's feelings, behaviour and well-being. Moreover, during conflicts, the proper health achievements and care decrease significantly, which in turn results in lower levels of well-being in the population[62]. In general, the differences in happiness across nations have been attributed to variations in characteristics such as social security, social equality, political freedom and economic prosperity[12].

Another result that needs to be highlighted is the gender differences in all scores. The literature argues that women are always more satisfied with their work and environment[63,64]. Nevertheless, the scores for women contradict such a generalisation as they were not much happier or more satisfied than their male counterparts, and their emotional well-being was affected to a greater degree. Another important finding is the significant associations between the level of happiness and many variables, such as years of experience, qualification, monthly income and type of work setting. These results corroborate previous studies conducted among dentists in Europe, China, Australia and Canada[46,47,56,57]. Indeed, subjective mental well-being can be influenced by a multitude of factors, including financial, familial, cultural and professional. Irrespective of differences in happiness and its determinants that were clearly found amongst dentists in the current study, some studies showed that about 50% of the individual differences in happiness are related to genes, only 10% are linked to life circumstances and 40% are determined by our intentional activities and behaviours[65].

The study is important in that it explored the subjective well-being among dentists which was associated

directly with their life and professional performance. Another key strength is that this study explored the level of happiness using three different scales rather than only one. Otherwise, the present study has some limitations that should be considered. First, this cross-sectional study targeted a convenience sample of dentists and hence the generalisability of the results is limited. Second, like most questionnaire-based surveys, the responses are self-reported and thus might not precisely reflect the real feeling of the respondents. Finally, some variables were not considered during the study, such as reimbursement system, years of education, hours of work, use of auxiliaries, having children and type of religion. These variables could represent potential hypotheses for further research projects. Despite these limitations, the present study provides an insight into the differences, among countries, in subjective happiness, psychological well-being and satisfaction with life, and how social and environmental variables may impact these domains. Well-designed future studies should explore, in depth, subjective and objective responses obtained from a larger and randomly selected sample.

CONCLUSION

The surveyed dentists showed a moderate level of subjective happiness, psychological well-being and satisfaction with life, although with considerable differences across countries. Age, qualifications, years of experience, marital status and monthly income were the significant independent determinants of such feelings among dentists.

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Conflict of interest

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Study conception and design: MNA, RO, YK, AC, ME-T, MOF, SAA-M, EH. ALL authors of this paper received the pre-final study design and any comments/suggestions from them were addressed. ALL authors of this paper approved the final study design. Acquisition of data: MNA, RO, YK, AC, ME-T, MOF, SAA-M, EH, AAA, MDS-N, AV, AA, IAI, AGA, AGA, SK, ZA, HK, SK, JRM, MA, IB, JEM, APD, AHM, BBB, AA, RC, SP, FM. Analysis and interpretation of data: MNA, RO, YK, AC, ME-T, MOF, SAA-M, EH, AV, AA. ALL authors of this paper received the primary analysis and interpretation of data and any comments/suggestions from them were addressed. Drafting of manuscript: MNA, RO, YK, AC, ME-T, MOF, SAA-M, EH, AV, AA. ALL authors of this paper received the drafted manuscript and any comments/suggestions from them were addressed. ALL authors have read and approved the final submitted version. Critical revision: MNA, RO, YK, AC, ME-T, MOF, SAA-M, EH.

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Appendix 1

Country	Gender	Female	Age group			
	Male		<30 years	30–39 years	40–50 years	≥50 years
All (*N* = 2,200)	918 (41.7)	1,282 (58.3)	904 (41.1)	754 (34.3)	347 (15.8)	195 (8.9)
Brazil (*n* = 99)	40 (40.4)	59 (59.6)	44 (44.4)	27 (27.3)	18 (18.2)	10 (10.1)
Croatia (*n* = 66)	17 (25.8)	49 (74.2)	12 (18.2)	17 (25.8)	22 (33.3)	15 (22.7)
Egypt (*n* = 116)	39 (33.6)	77 (66.4)	91 (78.4)	23 (19.8)	2 (1.7)	0 (0.0)
India (*n* = 76)	30 (39.5)	46 (60.5)	19 (25.0)	31 (40.8)	26 (34.2)	0 (0.0)
Iraq (*n* = 88)	47 (53.4)	41 (46.6)	52 (59.1)	14 (15.9)	9 (10.2)	13 (14.8)
Jordan (*n* = 92)	20 (21.7)	72 (78.3)	27 (29.3)	42 (45.7)	19 (20.7)	4 (4.3)
KSA (*n* = 134)	75 (56.0)	59 (44.0)	71 (53.0)	49 (36.6)	14 (10.4)	0 (0.0)
Kuwait (*n* = 126)	53 (42.1)	73 (57.9)	51 (40.5)	50 (39.7)	17 (13.5)	8 (6.3)
Lebanon (*n* = 100)	61 (61.0)	39 (39.0)	17 (17.0)	26 (26.0)	27 (27.0)	30 (30.0)
Libya (*n* = 106)	27 (25.5)	79 (74.5)	43 (40.6)	54 (50.9)	7 (6.6)	2 (1.9)
Malaysia (*n* = 94)	35 (37.2)	59 (62.8)	58 (61.7)	20 (21.3)	1 (1.1)	15 (16.0)
Nepal (*n* = 54)	33 (61.1)	21 (38.9)	23 (42.6)	26 (48.1)	4 (7.4)	1 (1.9)
Nigeria (*n* = 108)	54 (50.0)	54 (50.0)	21 (19.4)	45 (41.7)	21 (19.4)	21 (19.4)
Pakistan (*n* = 63)	29 (46.0)	34 (54.0)	48 (76.2)	13 (20.6)	2 (3.2)	0 (0.0)
Peru (*n* = 172)	83 (48.3)	89 (51.7)	76 (44.2)	77 (44.8)	16 (9.3)	3 (1.7)
Serbia (*n* = 118)	16 (13.6)	102 (86.4)	24 (20.3)	44 (37.3)	26 (22.0)	24 (20.3)
South Africa (*n* = 196)	75 (38.3)	121 (61.7)	77 (39.3)	61 (31.1)	36 (18.4)	22 (11.2)
Sudan (*n* = 88)	36 (40.9)	52 (59.1)	19 (21.6)	32 (36.4)	29 (33.0)	8 (9.1)
Syria (*n* = 73)	43 (58.9)	30 (41.1)	38 (52.1)	11 (15.1)	15 (20.5)	9 (12.3)
Turkey (*n* = 96)	33 (34.4)	63 (65.6)	32 (33.3)	34 (35.4)	24 (25.0)	6 (6.3)
Yemen (*n* = 135)	72 (53.3)	63 (46.7)	61 (45.2)	58 (43.0)	12 (8.9)	4 (3.0)

Country	Marital status				
	Single	Married	Separated	Divorced	Widowed
All (*N* = 2,200)	855 (38.9)	1,244 (56.5)	25 (1.1)	65 (3.0)	11 (0.5)
Brazil (*n* = 99)	45 (45.5)	50 (50.5)	2 (2.0)	2 (2.0)	0 (0.0)
Croatia (*n* = 66)	19 (28.8)	37 (56.1)	3 (4.5)	7 (10.6)	0 (0.0)
Egypt (*n* = 116)	63 (54.3)	52 (44.8)	0 (0.0)	1 (0.9)	0 (0.0)
India (*n* = 76)	17 (22.4)	56 (73.7)	2 (2.6)	0 (0.0)	1 (1.3)
Iraq (*n* = 88)	0 (0.0)	87 (98.9)	0 (0.0)	1 (1.1)	0 (0.0)
Jordan (*n* = 92)	18 (19.6)	71 (77.2)	0 (0.0)	3 (3.3)	0 (0.0)
KSA (*n* = 134)	58 (43.3)	69 (51.5)	2 (1.5)	5 (3.7)	0 (0.0)
Kuwait (*n* = 126)	40 (31.7)	79 (62.7)	1 (0.8)	5 (4.0)	1 (0.8)
Lebanon (*n* = 100)	25 (25.0)	73 (73.0)	0 (0.0)	2 (2.0)	0 (0.0)
Libya (*n* = 106)	52 (49.1)	49 (46.2)	1 (0.9)	4 (3.8)	0 (0.0)
Malaysia (*n* = 94)	57 (60.6)	34 (36.2)	0 (0.0)	3 (3.2)	0 (0.0)
Nepal (*n* = 54)	23 (42.6)	31 (57.4)	0 (0.0)	0 (0.0)	0 (0.0)
Nigeria (*n* = 108)	37 (34.3)	66 (61.1)	2 (1.9)	0 (0.0)	3 (2.8)
Pakistan (*n* = 63)	41 (65.1)	20 (31.7)	1 (1.6)	1 (1.6)	0 (0.0)
Peru (*n* = 172)	124 (72.1)	44 (25.6)	2 (1.2)	1 (0.6)	1 (0.6)
Serbia (*n* = 118)	36 (30.5)	64 (54.2)	6 (5.1)	10 (8.5)	2 (1.7)
South Africa (*n* = 196)	75 (38.3)	111 (56.6)	0 (0.0)	10 (5.1)	0 (0.0)
Sudan (*n* = 88)	26 (29.5)	59 (67.0)	0 (0.0)	2 (2.3)	1 (1.1)
Syria (*n* = 73)	70 (95.9)	0 (0.0)	0 (0.0)	3 (4.1)	0 (0.0)
Turkey (*n* = 96)	43 (44.8)	49 (51.0)	1 (1.0)	3 (3.1)	0 (0.0)
Yemen (*n* = 135)	56 (41.5)	73 (54.1)	2 (1.5)	2 (1.5)	2 (1.5)

Country	Years since graduation			Qualification	
	<5 years	5–10 years	>10 years	General practitioner	Specialist
All (*N* = 2,200)	835 (38.0)	509 (23.1)	856 (38.9)	1,300 (59.1)	900 (40.9)
Brazil (*n* = 99)	40 (40.4)	18 (18.2)	41 (41.4)	38 (38.4)	61 (61.6)
Croatia (*n* = 66)	12 (18.2)	10 (15.2)	44 (66.7)	15 (22.7)	51 (77.3)
Egypt (*n* = 116)	74 (63.8)	25 (21.6)	17 (14.7)	82 (70.7)	34 (29.3)
India (*n* = 76)	22 (28.9)	16 (21.1)	38 (50.0)	13 (17.1)	63 (82.9)

(continued)

Appendix continued

Country	Years since graduation			Qualification	
	<5 years	5–10 years	>10 years	General practitioner	Specialist
Iraq (*n* = 88)	44 (50.0)	12 (13.6)	32 (36.4)	54 (61.4)	34 (38.6)
Jordan (*n* = 92)	23 (25.0)	22 (23.9)	47 (51.1)	37 (40.2)	55 (59.8)
KSA (*n* = 134)	81 (60.4)	22 (16.4)	31 (23.1)	91 (67.9)	43 (32.1)
Kuwait (*n* = 126)	45 (35.7)	32 (25.4)	49 (38.9)	89 (70.6)	37 (29.4)
Lebanon (*n* = 100)	16 (16.0)	16 (16.0)	68 (68.0)	21 (21.0)	79 (79.0)
Libya (*n* = 106)	39 (36.8)	44 (41.5)	23 (21.7)	78 (73.6)	28 (26.4)
Malaysia (*n* = 94)	57 (60.6)	15 (16.0)	22 (23.4)	82 (87.2)	12 (12.8)
Nepal (*n* = 54)	27 (50.0)	15 (27.8)	12 (22.2)	30 (55.6)	24 (44.4)
Nigeria (*n* = 108)	27 (25.0)	27 (25.0)	54 (50.0)	59 (54.6)	49 (45.4)
Pakistan (*n* = 63)	45 (71.4)	12 (19.0)	6 (9.5)	48 (76.2)	15 (23.8)
Peru (*n* = 172)	60 (34.9)	62 (36.0)	50 (29.1)	111 (64.5)	61 (35.5)
Serbia (*n* = 118)	31 (26.3)	23 (19.5)	64 (54.2)	67 (56.8)	51 (43.2)
South Africa (*n* = 196)	66 (33.7)	40 (20.4)	90 (45.9)	170 (86.7)	26 (13.3)
Sudan (*n* = 88)	11 (12.5)	25 (28.4)	52 (59.1)	32 (36.4)	56 (63.6)
Syria (*n* = 73)	33 (45.2)	9 (12.3)	31 (42.5)	39 (53.4)	34 (46.6)
Turkey (*n* = 96)	26 (27.1)	26 (27.1)	44 (45.8)	42 (43.8)	54 (56.3)
Yemen (*n* = 135)	56 (41.5)	38 (28.1)	41 (30.4)	102 (75.6)	33 (24.4)

Country	Type of work							
	None	Private	Public	Academic	Both private and public	Both private and academic	Both public and academic	Other
All (*N* = 2,200)	117 (5.3)	673 (30.6)	406 (18.5)	172 (7.8)	269 (12.2)	371 (16.9)	142 (6.5)	50 (2.3)
Brazil (*n* = 99)	5 (5.1)	61 (61.6)	4 (4.0)	3 (3.0)	17 (17.2)	5 (5.1)	1 (1.0)	3 (3.0)
Croatia (*n* = 66)	0 (0.0)	9 (13.6)	7 (10.6)	8 (12.1)	6 (9.1)	17 (25.8)	19 (28.8)	0 (0.0)
Egypt (*n* = 116)	2 (1.7)	4 (3.4)	32 (27.6)	9 (7.8)	40 (34.5)	23 (19.8)	5 (4.3)	1 (0.9)
India (*n* = 76)	0 (0.0)	17 (22.4)	0 (0.0)	17 (22.4)	4 (5.3)	36 (47.4)	2 (2.6)	0 (0.0)
Iraq (*n* = 88)	13 (14.8)	5 (5.7)	11 (12.5)	8 (9.1)	25 (28.4)	20 (22.7)	3 (3.4)	3 (3.4)
Jordan (*n* = 92)	1 (1.1)	40 (43.5)	21 (22.8)	6 (6.5)	2 (2.2)	14 (15.2)	2 (2.2)	6 (6.5)
KSA (*n* = 134)	31 (23.1)	37 (27.6)	25 (18.7)	9 (6.7)	4 (3.0)	11 (8.2)	10 (7.5)	7 (5.2)
Kuwait (*n* = 126)	1 (0.8)	19 (15.1)	84 (66.7)	2 (1.6)	11 (8.7)	2 (1.6)	5 (4.0)	2 (1.6)
Lebanon (*n* = 100)	1 (1.0)	38 (38.0)	1 (1.0)	1 (1.0)	6 (6.0)	49 (49.0)	2 (2.0)	2 (2.0)
Libya (*n* = 106)	10 (9.4)	22 (20.8)	17 (16.0)	13 (12.3)	20 (18.9)	14 (13.2)	6 (5.7)	4 (3.8)
Malaysia (*n* = 94)	0 (0.0)	25 (26.6)	49 (52.1)	6 (6.4)	6 (6.4)	6 (6.4)	1 (1.1)	1 (1.1)
Nepal (*n* = 54)	3 (5.6)	21 (38.9)	3 (5.6)	12 (22.2)	6 (11.1)	8 (14.8)	1 (1.9)	0 (0.0)
Nigeria (*n* = 108)	4 (3.7)	23 (21.3)	32 (29.6)	6 (5.6)	14 (13.0)	3 (2.8)	26 (24.1)	0 (0.0)
Pakistan (*n* = 63)	1 (1.6)	17 (27.0)	3 (4.8)	13 (20.6)	9 (14.3)	14 (22.2)	6 (9.5)	0 (0.0)
Peru (*n* = 172)	2 (1.2)	96 (55.8)	10 (5.8)	5 (2.9)	19 (11.0)	35 (20.3)	1 (0.6)	4 (2.3)
Serbia (*n* = 118)	10 (8.5)	50 (42.4)	35 (29.7)	3 (2.5)	10 (8.5)	2 (1.7)	5 (4.2)	3 (2.5)
South Africa (*n* = 196)	2 (1.0)	73 (37.2)	37 (18.9)	23 (11.7)	15 (7.7)	26 (13.3)	17 (8.7)	3 (1.5)
Sudan (*n* = 88)	6 (6.8)	17 (19.3)	7 (8.0)	5 (5.7)	14 (15.9)	24 (27.3)	13 (14.8)	2 (2.3)
Syria (*n* = 73)	12 (16.4)	25 (34.2)	5 (6.8)	1 (1.4)	14 (19.2)	15 (20.5)	0 (0.0)	1 (1.4)
Turkey (*n* = 96)	4 (4.2)	29 (30.2)	13 (13.5)	17 (17.7)	2 (2.1)	18 (18.8)	10 (10.4)	3 (3.1)
Yemen (*n* = 135)	9 (6.7)	45 (33.3)	10 (7.4)	5 (3.7)	25 (18.5)	29 (21.5)	7 (5.2)	5 (3.7)

Country	Work experience			Monthly income ($US)		
	<5 years	5–10 years	>10 years	<$1,000	$1,000–$3,000	>$3,000
All (*N* = 2,200)	925 (42.0)	496 (22.5)	779 (35.4)	970 (44.1)	662 (30.1)	568 (25.8)
Brazil (*n* = 99)	42 (42.4)	16 (16.2)	41 (41.4)	18 (18.2)	38 (38.4)	43 (43.4)
Croatia (*n* = 66)	11 (16.7)	13 (19.7)	42 (63.6)	6 (9.1)	45 (68.2)	15 (22.7)
Egypt (*n* = 116)	84 (72.4)	15 (12.9)	17 (14.7)	98 (84.5)	13 (11.2)	5 (4.3)

(continued)

Appendix continued

Country	Work experience			Monthly income ($US)		
	<5 years	5–10 years	>10 years	<$1,000	$1,000–$3,000	>$3,000
India (*n* = 76)	24 (31.6)	23 (30.3)	29 (38.2)	44 (57.9)	27 (35.5)	5 (6.6)
Iraq (*n* = 88)	47 (53.4)	11 (12.5)	30 (34.1)	52 (59.1)	21 (23.9)	15 (17.0)
Jordan (*n* = 92)	29 (31.5)	22 (23.9)	41 (44.6)	41 (44.6)	31 (33.7)	20 (21.7)
KSA (*n* = 134)	84 (62.7)	23 (17.2)	27 (20.1)	40 (29.9)	44 (32.8)	50 (37.3)
Kuwait (*n* = 126)	46 (36.5)	35 (27.8)	45 (35.7)	2 (1.6)	32 (25.4)	92 (73.0)
Lebanon (*n* = 100)	18 (18.0)	16 (16.0)	66 (66.0)	6 (6.0)	34 (34.0)	60 (60.0)
Libya (*n* = 106)	58 (54.7)	29 (27.4)	19 (17.9)	80 (75.5)	21 (19.8)	5 (4.7)
Malaysia (*n* = 94)	59 (62.8)	16 (17.0)	19 (20.2)	10 (10.6)	32 (34.0)	52 (55.3)
Nepal (*n* = 54)	31 (57.4)	15 (27.8)	8 (14.8)	33 (61.1)	18 (33.3)	3 (5.6)
Nigeria (*n* = 108)	30 (27.8)	28 (25.9)	50 (46.3)	54 (50.0)	46 (42.6)	8 (7.4)
Pakistan (*n* = 63)	46 (73.0)	12 (19.0)	5 (7.9)	46 (73.0)	11 (17.5)	6 (9.5)
Peru (*n* = 172)	66 (38.4)	61 (35.5)	45 (26.2)	87 (50.6)	61 (35.5)	24 (14.0)
Serbia (*n* = 118)	35 (29.7)	28 (23.7)	55 (46.6)	96 (81.4)	22 (18.6)	0 (0.0)
South Africa (*n* = 196)	67 (34.2)	41 (20.9)	88 (44.9)	9 (4.6)	60 (30.6)	127 (64.8)
Sudan (*n* = 88)	20 (22.7)	25 (28.4)	43 (48.9)	60 (68.2)	20 (22.7)	8 (9.1)
Syria (*n* = 73)	37 (50.7)	8 (11.0)	28 (38.4)	61 (83.6)	7 (9.6)	5 (6.8)
Turkey (*n* = 96)	29 (30.2)	23 (24.0)	44 (45.8)	24 (25.0)	55 (57.3)	17 (17.7)
Yemen (*n* = 135)	62 (45.9)	36 (26.7)	37 (27.4)	103 (76.3)	24 (17.8)	8 (5.9)