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Job Satisfaction among Health Professionals in Private Healthcare Organizations in Hail, Saudi Arabia: A Cross-Sectional Study

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ABSTRACT: Background: Job satisfaction among health professionals influences retention, performance and quality of care. Saudi evidence comes mainly from public and university hospitals, and little is known about the expanding private sector in the Hail region. This study assessed job satisfaction among health professionals in private healthcare organizations in Hail City and identified associated factors.

Methods: A cross-sectional web-based survey was conducted among 146 health professionals (allied health staff, physicians and administrators) recruited by non-probability convenience sampling from 10 private healthcare organizations in Hail City, Saudi Arabia, between 3 March and 4 May 2026. A 32-item, five-point questionnaire covered nine satisfaction domains (Cronbach's $\alpha = 0.978$). Data were analyzed with IBM SPSS Statistics version 27 using Mann–Whitney U, Kruskal–Wallis and Spearman tests and multiple linear regression.

Results: Overall, 56.2% of participants were satisfied, 28.1% neutral and 15.8% dissatisfied (overall mean 3.47 of 5, SD 0.86). Work relationships scored highest (3.73), followed by the work itself (3.58) and work culture (3.54). Pay and end-of-service benefits (3.17), working hours (3.26) and recognition and reward (3.35) scored lowest, all in the neutral range. Over a quarter (26.0%) planned to leave their organization within one year. In multivariable analysis ($R^2 = 0.250$), longer intended stay ($\beta = 0.389$, $p < 0.001$) and female gender ($\beta = 0.202$, $p = 0.020$) were associated with higher satisfaction. Higher education was associated with lower satisfaction ($\beta = -0.194$, $p = 0.041$), although this was borderline with robust standard errors.

Conclusion: Health professionals in Hail's private sector were moderately satisfied. Relationships with colleagues were a strength, while pay, benefits, working hours and recognition were weak points. Satisfaction was closely associated with intention to stay. Improving compensation, scheduling and recognition may support retention in the expanding private health sector; however, because the study was cross-sectional and used a convenience sample, these associations are not causal, and longitudinal studies are needed to establish whether satisfaction influences actual decisions to stay or leave.

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1. INTRODUCTION

Job satisfaction is commonly defined as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences (1). It is a multidimensional construct that reflects how employees evaluate the work itself, pay, supervision, co-workers, working conditions and opportunities for growth (2, 3). In most sectors, satisfaction is linked to job performance (4); in healthcare, the stakes are higher, because staff well-being is tied to patient safety and quality of care (5, 6). Dissatisfied health professionals are more likely to intend to leave and to actually leave their jobs (7, 8). Turnover disrupts continuity of care and raises recruitment and training costs. This recognition has led to the "quadruple aim", which adds the well-being of the care team to patient experience, population health and cost (9). The World Health Organization likewise places retention and decent working conditions at the center of its global workforce strategy (10). Herzberg's two-factor theory offers a useful lens for these questions (11). It distinguishes intrinsic motivators (achievement, recognition, the work itself, growth) from extrinsic hygiene factors (pay, policies, supervision, working conditions). Hygiene factors do not create satisfaction on their own, but their absence produces dissatisfaction. Reviews of healthcare staff consistently identify workload, pay, leadership, recognition and professional development as key determinants (12, 13). Reported levels of satisfaction vary widely across settings. Studies from Nigeria, Nepal and Turkey found that 60% to 90% of health workers were satisfied (14–16), while a systematic review from Ethiopia reported pooled prevalence as low as 31.7% to 54% (13). Findings on sociodemographic correlates are also inconsistent: some studies report higher satisfaction among older staff and women (17), others no association at all (14–16). Validated instruments such as the Satisfaction of Employees in Health Care survey show that teamwork is often the most positively rated aspect of work (18).

Saudi Arabia is undergoing a major transformation of its health system under Vision 2030, which aims to expand private-sector participation and restructure public provision (19). The private sector depends heavily on an expatriate and increasingly Saudi workforce whose retention is a strategic concern. Saudi studies have documented moderate satisfaction among nurses in primary care (20) and hospitals (21, 22), and pay, working conditions and supervision have emerged as key factors in a university hospital in Al-Khobar (23). However, most of this evidence comes from public, military and university hospitals in large cities. To our knowledge, no published study has examined job satisfaction across professional groups in private healthcare organizations in the Hail region in northern Saudi Arabia. This study therefore aimed to (i) assess the level of job satisfaction among health professionals working in private healthcare organizations in Hail City and (ii) identify the domains and sociodemographic and occupational factors associated with it.

2. MATERIALS AND METHODS

2.1 Study design

A cross-sectional study using a web-based, self-administered questionnaire was conducted. The study was designed and reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies (24) and the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) (25).

2.2 Study setting and study period

The study was conducted in 10 private healthcare organizations in Hail City, the capital of the Hail region in northern Saudi Arabia. These comprised Salamat Hospital, Saudi German Hospital, Alanwar Hospital, Alahli Medical, Salamat Complex, Alsafa Complex, Ibn Sina Complex, Zamzam Complex, Enayati Clinics, and Riyadh Medical Center. Together, these facilities represent the main private healthcare providers in the city. Data were collected between 3 March and 4 May 2026.

2.3 Study population and eligibility criteria

The target population comprised approximately 2,120 health professionals employed in private healthcare organizations in Hail City. Participants were eligible if they (i) were physicians, allied health professionals, including nurses, technicians, and other specialists, or health administrators; (ii) were actively employed in a private healthcare organization in Hail City during the data collection period; (iii) had at least one year of professional work experience; (iv) were able to read and understand either Arabic or English; and (v) provided electronic informed consent before participation. Individuals were excluded if they (i) worked exclusively in governmental healthcare facilities; (ii) were students, interns, or trainees without a formal employment contract; (iii) were non-healthcare support staff, such as housekeeping, security, or maintenance personnel; (iv) were on extended leave during the data collection period; or (v) did not provide informed consent.

2.4 Sample size and sampling technique

The target population comprised approximately 2,120 health professionals working in private healthcare organizations in Hail City. Before data collection, a pragmatic target of 10% of this population (n = 212) was set on the basis of feasibility within the two-month data collection period; no formal a priori sample size calculation was performed, so the precision and power of the achieved sample were evaluated as described below. A total of 146 eligible health professionals completed the web-based questionnaire, and all were included in the analysis. The precision of the achieved sample was estimated with Cochran's formula with finite population correction (26):

$n_0 = Z^2 \cdot p(1 - p) / e^2$ and $n = n_0 / [1 + (n_0 - 1) / N]$

where Z = 1.96 for a 95% confidence level, p = 0.5 (maximum variability), e is the margin of error and N = 2,120. On this basis, a sample of 326 would have been required for a margin of error of ±5%. Rearranging the formula for the achieved sample gives:

$e = Z \cdot \sqrt{[p(1 - p) / n] \cdot [(N - n) / (N - 1)]} = 1.96 \cdot \sqrt{(0.25 / 146) \cdot (1{,}974 / 2{,}119)} \approx 0.078$

Under the assumption of simple random sampling, the sample of 146 would therefore correspond to a margin of error of approximately ±7.8%; because a convenience sample was used, this value should be regarded as an approximate indicator of precision only. Because the main analysis was a multivariable linear regression, the adequacy of the sample for this model was also assessed with a sensitivity power analysis, with effect size expressed as Cohen's f^2 (27):

$f^2 = R^2 / (1 - R^2)$

With 11 predictors, a two-sided α of 0.05 and 80% power, the sample of 146 could detect an overall model effect as small as $f^2 = 0.12$ (between small and medium). For an individual predictor, the sample could detect a partial effect of $f^2 \geq 0.055$ with 80% power; smaller individual associations may therefore have been missed. The observed model effect ($f^2 = 0.250 / 0.750 = 0.33$) is reported for descriptive purposes only. The sample provided about 13 observations per predictor, although its modest size relative to the population remains a limitation.

A non-probability convenience sampling technique was applied at two levels. First, the 10 organizations were included because they are the main private healthcare providers in Hail City and their administrations agreed to participate. Second, within each organization, no individual selection, randomization or quota was applied: after permission had been obtained, the survey link was forwarded by the administration of each organization to its staff through internal channels, including staff communication groups, and any staff member who met the eligibility criteria could respond. Participation was voluntary, and all eligible professionals who completed the questionnaire during the data collection period were included in the analysis; no completed questionnaire was excluded. Because the number of staff who received the link was not recorded, a response rate could not be calculated. Owing to this non-probability design, the sample may over-represent staff who were more reachable through these channels or more motivated to respond; selection and non-response bias therefore cannot be excluded, and the findings should be generalized with caution.

2.5 Data collection

Data were collected with a self-administered questionnaire developed by the authors after reviewing previous studies of job satisfaction in healthcare (3, 18, 23). The questionnaire was built in Google Forms with bilingual Arabic–English wording. Its first page explained the purpose of the study, and participants had to give electronic consent before viewing the questions. The survey was a closed survey: the link was shared only through the internal channels of the participating organizations and was not posted publicly. Participation was voluntary, and no incentives were offered.

The first section collected sociodemographic and occupational characteristics: age group, gender, marital status, educational level, specialty, years of work experience, monthly income in Saudi riyals (SAR), intended length of stay with the current organization, working days per week and working hours per day. Working hours were entered as free text and coded as hours per day. Values above 24 were treated as weekly hours and divided by the participant's reported working days, and mixed schedules were averaged.

The second section measured job satisfaction with 32 items grouped into nine domains: the work itself (4 items), physical work environment (3), leadership and management support (4), recognition and reward (4), work relationships (5), pay

and end-of-service benefits (3), job training and career development (3), work culture (4), and working hours and schedule (2). Each item was rated on a five-point scale from 1 (strongly dissatisfied) to 5 (strongly satisfied). Two work culture items (items 27 and 28) assess perceived links between job satisfaction and performance or quality of care rather than satisfaction with a specific facet of work; they were retained to preserve the prespecified structure of the instrument, and this is addressed in the limitations. Domain scores were calculated as the mean of their items. The total score, which served as the dependent variable, was the sum of all 32 items and could range from 32 to 160. Mean scores were interpreted using equal-width intervals of 0.8 (28): 1.00–1.79 very low, 1.80–2.59 low (dissatisfied), 2.60–3.39 neutral, 3.40–4.19 satisfied and 4.20–5.00 highly satisfied. For the overall classification, participants with a mean item score of 3.40 or higher were classified as satisfied, those with 2.60–3.39 as neutral and those below 2.60 as dissatisfied.

2.6 Validity and reliability

Because the questionnaire was developed for this study and had not been validated previously, its psychometric properties were examined in the study sample, and this evidence should be regarded as preliminary. The items were drawn from established job satisfaction research to ensure content relevance (3, 18, 23), and exploratory analyses in the study sample provided preliminary evidence of construct validity. Sampling adequacy was excellent (Kaiser–Meyer–Olkin = 0.939), and Bartlett's test of sphericity was significant (χ^2 = 5,232.6, df = 496, $p < 0.001$), indicating that the items were suitable for factor analysis. A dominant first factor explained 59.7% of the total variance, and all items loaded on this factor (loadings 0.48–0.90), which supports the use of a composite total score but indicates that the nine domains were not empirically distinct. Corrected domain–total correlations ranged from 0.72 to 0.90. Known-groups validity was also supported: participants intending to leave their organization within one year scored significantly lower than those intending to stay longer ($p < 0.001$). Because intended stay was also a covariate in the regression model, this finding is supportive rather than independent evidence. Internal consistency was excellent for the full scale (Cronbach's α = 0.978; Spearman–Brown split-half coefficient = 0.984) and good to excellent for each domain (α = 0.830–0.945) (29). Corrected item–total correlations ranged from 0.48 to 0.89, and deleting any single item did not increase the overall alpha. The very high overall coefficient, together with a mean inter-item correlation of 0.58, suggests some item redundancy. Test–retest reliability was not assessed.

2.7 Bias

Several steps were taken to reduce social desirability bias. The survey was anonymous, no identifying information was collected, and participants were assured that their responses would have no consequences for their employment. Potential selection bias arising from convenience sampling is discussed in the limitations.

2.8 Statistical analysis

Data were analyzed using IBM SPSS Statistics, version 27 (IBM Corp., Armonk, NY, USA). Categorical variables were summarized as frequencies and percentages. Items and domains were described using means, standard deviations (SD) and the percentage of participants who were satisfied (satisfied or strongly satisfied). Only one item response was missing (0.02% of all item responses); it was replaced with the participant's mean on the remaining items of the same domain (person-mean imputation). Given the negligible amount of missing data, this procedure was not expected to influence the results, and no participant was excluded because of missing responses. Normality of the total score was assessed with the Shapiro–Wilk test and the Kolmogorov–Smirnov test with Lilliefors correction. Because the Shapiro–Wilk test indicated a departure from normality, bivariate comparisons used non-parametric tests. The Mann–Whitney U test was used for gender and the Kruskal–Wallis test for the other characteristics, followed by Bonferroni-corrected pairwise Mann–Whitney tests where the overall test was significant. Associations with ordered variables were assessed with Spearman's rank correlation coefficient (ρ). Factors associated with job satisfaction were examined with multiple linear regression using the enter method, with the total score as the dependent variable. The predictors were age group, gender, marital status (married vs. not married), educational level, specialty (physician and administrator vs. allied health, entered as dummy variables), work experience, monthly income, intended length of stay, working days per week and working hours per day. Intended length of stay, which is closely related to turnover intention and is often regarded as a consequence rather than a determinant of job satisfaction, was included to describe its association with satisfaction independently of the other characteristics; its coefficient should not be interpreted causally. Ordered categories were entered as ordinal codes. Linear regression is robust to moderate non-normality in samples of this size (30, 31). Regression assumptions were checked with variance inflation factors (VIF) for multicollinearity, the Durbin–Watson

statistic for independence of residuals, the Breusch–Pagan test for heteroscedasticity, the Shapiro–Wilk test for normality of residuals and Cook's distance for influential observations. As a sensitivity analysis, and because tests for heteroscedasticity may have limited power in samples of this size, the model was re-estimated with heteroscedasticity-consistent standard errors using the HC3 estimator, which is recommended for samples smaller than 250 (32). This procedure leaves the regression coefficients unchanged and recalculates only their standard errors and p values; both sets of p values are reported. Results are reported as unstandardized coefficients (B) with standard errors and 95% confidence intervals, standardized coefficients (β), R^2 and adjusted R^2. A two-sided p value < 0.05 was considered statistically significant.

2.9 Ethical considerations

The study was approved by the Research Ethics Committee of the University of Ha'il (approval no. H-2025-269; 22 October 2025). Permission was obtained from each participating organization before data collection. The first page of the online form explained the study's aims, voluntary participation, the right to withdraw at any time, anonymity and confidentiality; participants gave electronic informed consent before accessing the questions. The study complied with the Declaration of Helsinki.

3. RESULTS AND DISCUSSION

3.1 Participant characteristics

All 146 participants submitted complete questionnaires apart from one missing item. Most were female (61.6%), married (53.4%), aged 21–40 years (87.0%) and held a bachelor's degree (63.7%). Allied health professionals made up 67.1% of the sample, administrators 21.9% and physicians 11.0%. Over half (51.4%) worked six days per week; mean daily working time was 9.14 hours (SD 1.71), and 24.0% worked 12 hours or more per day. More than a quarter (26.0%) intended to stay with their organization for one year or less (Table 1).

Table 1. Participant characteristics and total job satisfaction score by group (n = 146)

Characteristic	Category	n (%)	Total score, mean (SD)	Median (IQR)	P value
Age (years)	21–30	59 (40.4)	111.1 (28.1)	116 (94–128)	0.091[b]
	31–40	68 (46.6)	108.0 (25.8)	110 (92–124)	
	41–50	17 (11.6)	123.2 (32.6)	132 (119–142)	
	>50	2 (1.4)	112.5 (23.3)	112 (104–121)	
Gender	Male	56 (38.4)	109.1 (27.3)	112 (90–128)	0.437[a]
	Female	90 (61.6)	112.3 (28.0)	116 (96–128)	
Marital status	Single	62 (42.5)	108.7 (26.5)	105 (93–126)	0.121[b]
	Married	78 (53.4)	114.6 (27.4)	120 (96–129)	
	Divorced	6 (4.1)	90.3 (36.3)	88 (61–124)	
Educational level	Diploma	20 (13.7)	115.2 (28.1)	128 (97–136)	0.488[b]
	Bachelor's	93 (63.7)	111.6 (27.3)	116 (96–128)	
	Master's	29 (19.9)	106.2 (29.3)	102 (85–127)	
	Doctoral	4 (2.7)	114.5 (27.6)	122 (108–128)	
Specialty	Allied health	98 (67.1)	111.5 (26.7)	115 (95–128)	0.444[b]
	Physician	16 (11.0)	116.9 (31.8)	121 (97–139)	
	Health administrator	32 (21.9)	107.0 (28.7)	108 (90–128)	

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Characteristic	Category	n (%)	Total score, mean (SD)	Median (IQR)	P value
Work experience (years)	1–3	37 (25.3)	105.3 (29.2)	103 (88–126)	0.040[b]
	4–6	32 (21.9)	102.8 (28.8)	105 (82–126)	
	7–9	21 (14.4)	111.6 (29.5)	110 (91–133)	
	>9	56 (38.4)	119.4 (23.3)	122 (100–133)	
Monthly income (SAR)	1,000–3,000	12 (8.2)	97.6 (29.4)	102 (71–119)	0.095[b]
	3,001–6,000	60 (41.1)	109.2 (29.0)	110 (88–128)	
	6,001–9,000	38 (26.0)	108.9 (25.4)	113 (97–127)	
	>9,000	36 (24.7)	121.1 (25.0)	122 (104–138)	
Intended stay (years)	≤1	38 (26.0)	92.5 (25.3)	92 (74–114)	<0.001[b]
	2–5	65 (44.5)	114.3 (26.2)	119 (98–129)	
	6–9	16 (11.0)	119.1 (20.3)	116 (100–130)	
	>9	27 (18.5)	124.8 (25.8)	127 (108–146)	
Working days per week	3	4 (2.7)	116.8 (14.2)	118 (112–124)	0.215[b]
	4	27 (18.5)	115.0 (24.8)	119 (98–128)	
	5	40 (27.4)	116.2 (29.4)	122 (100–131)	
	6	75 (51.4)	106.7 (27.9)	104 (88–128)	
Working hours per day	Mean (SD)	9.14 (1.71)	ϱ = 0.064	—	0.441[c]

Total score range 32–160. [a] Mann–Whitney U test; [b] Kruskal–Wallis test; [c] Spearman correlation. IQR, interquartile range; SAR, Saudi riyal.

3.2 Overall and domain-level job satisfaction

The mean total score was 111.1 (SD 27.7; median 115, IQR 94–128), corresponding to an overall mean item score of 3.47 (SD 0.86), in the lower part of the satisfied range. Overall, 56.2% of participants were satisfied, 28.1% neutral and 15.8% dissatisfied. Six domains reached the satisfied range, led by work relationships, the work itself and work culture. Recognition and reward, working hours and pay and end-of-service benefits were in the neutral range, with pay lowest (Table 2).

Table 2. Job satisfaction by domain, ranked by mean score (n = 146)

Rank	Domain (items)	Mean	SD	Cronbach's α	Level
1	Work relationships (5)	3.73	0.85	0.929	Satisfied
2	Work itself (4)	3.58	0.94	0.887	Satisfied
3	Work culture (4)	3.54	0.89	0.830	Satisfied
4	Leadership and management support (4)	3.47	1.08	0.927	Satisfied
5	Job training and career development (3)	3.44	1.05	0.931	Satisfied
6	Physical environment (3)	3.44	0.99	0.884	Satisfied
7	Recognition and reward (4)	3.35	1.07	0.922	Neutral

Rank	Domain (items)	Mean	SD	Cronbach's α	Level
8	Working hours and schedule (2)	3.26	1.16	0.945	Neutral
9	Pay and end-of-service benefits (3)	3.17	1.18	0.928	Neutral
—	Overall (32)	3.47	0.86	0.978	Satisfied

Level cut-offs: 2.60–3.39 neutral; 3.40–4.19 satisfied.

3.3 Item-level results

The highest-rated items were "My manager/supervisor treats me with respect" (mean 3.79; 69.2% satisfied), "Overall, my satisfaction with work relationships is good" (3.79; 69.9%) and "Quality of care is affected by employee job satisfaction" (3.78; 69.9%), closely followed by "It is easy to get along with my colleagues" (3.77; 73.3%). The lowest were the end-of-service benefits package (3.14; 32.2% dissatisfied), overall satisfaction with pay and benefits (3.18) and fair compensation (3.20; 31.5% dissatisfied). Trust in what management communicates was the lowest-rated leadership item (3.23), with 30.1% dissatisfied, despite high ratings for supervisor respect (Table 3).

Table 3. Item-level job satisfaction scores (n = 146)

Domain	Item	Mean (SD)	Satisfied, %	Dissatisfied, %
Work itself	I like the type of work I do and the people I work with	3.71 (1.02)	65.1	12.3
	I believe my job is secure	3.40 (1.21)	56.2	25.3
	I am proud to work for this hospital	3.57 (1.08)	58.2	17.1
	Overall, I am satisfied with my work	3.66 (1.04)	63.7	15.1
Physical environment	The space for work is comfortable	3.49 (1.09)	59.6	20.5
	Everything I need to do my work is available	3.29 (1.13)	49.3	26.7
	Overall, the physical work conditions are good	3.53 (1.06)	58.9	17.1
Leadership and management	I can trust what I am told by management	3.23 (1.25)	45.9	30.1
	My supervisor gives me adequate support	3.44 (1.22)	53.4	23.3
	My manager/supervisor treats me with respect	3.79 (1.09)	69.2	13.0
	Overall, leadership/management support is satisfactory	3.42 (1.19)	53.4	22.6
Recognition and reward	I feel appreciated at this hospital	3.35 (1.18)	49.3	21.9
	My good work is recognized appropriately	3.38 (1.17)	52.1	21.9
	My supervisor actively listens to my suggestions	3.41 (1.14)	52.7	21.9
	Overall, I am satisfied with recognition and reward	3.26 (1.24)	50.7	28.1
Work relationships	It is easy to get along with my colleagues	3.77 (0.94)	73.3	10.3
	I feel part of the team I work with	3.68 (1.02)	65.8	13.0
	People in my department communicate sufficiently	3.68 (1.02)	64.4	12.3

Domain	Item	Mean (SD)	Satisfied, %	Dissatisfied, %
	I accept, and am accepted by, colleagues and manager despite differences	3.73 (0.94)	66.4	9.6
	Overall, my satisfaction with work relationships is good	3.79 (0.91)	69.9	8.9
Pay and benefits	I am fairly compensated (salary, paid public holidays)	3.20 (1.32)	51.4	31.5
	My job offers a good end-of-service benefits package	3.14 (1.27)	45.2	32.2
	Overall, pay and end-of-service benefits are good	3.18 (1.18)	44.5	29.5
Training and development	I have the training I need to do my job	3.39 (1.16)	52.7	21.9
	My job gives me the opportunity to learn	3.46 (1.11)	56.2	21.2
	Overall, I am satisfied with job training	3.48 (1.09)	57.5	19.9
Work culture	My performance is affected by my job satisfaction	3.62 (1.03)	59.6	13.0
	Quality of care is affected by employee job satisfaction	3.78 (1.07)	69.9	13.0
	I am given timely feedback on my performance	3.40 (1.12)	54.1	19.9
	I am provided with adequate equipment for my tasks	3.34 (1.15)	50.0	24.0
Working hours	I am satisfied with my working hours	3.25 (1.20)	50.7	28.8
	Overall, my satisfaction with working hours is good	3.27 (1.18)	54.1	26.7

Satisfied = "satisfied" or "strongly satisfied"; dissatisfied = "dissatisfied" or "strongly dissatisfied".

3.4 Factors associated with job satisfaction

The total score departed slightly from normality on the Shapiro–Wilk test ($W = 0.976$, $p = 0.011$) but not on the Kolmogorov–Smirnov test ($D = 0.070$, $p = 0.114$). In bivariate analysis, satisfaction differed by intended stay ($H = 24.88$, $p < 0.001$) and work experience ($H = 8.31$, $p = 0.040$) (Table 1). Participants planning to leave within one year scored lower than every other intended-stay group (Bonferroni-adjusted $p < 0.001$ vs. 2–5 years, $p = 0.008$ vs. 6–9 years, $p < 0.001$ vs. >9 years); no pairwise difference by experience survived correction. Satisfaction correlated positively with intended stay ($\varrho = 0.389$, $p < 0.001$), experience ($\varrho = 0.224$, $p = 0.007$) and income ($\varrho = 0.185$, $p = 0.025$). The multiple regression model was significant ($F(11, 134) = 4.06$, $p < 0.001$) and explained 25.0% of the variance (adjusted $R^2 = 0.188$) (Table 4). Longer intended stay showed the strongest independent association ($\beta = 0.389$, $p < 0.001$): each one-category increase in intended stay was associated with a 10.4-point higher total score (95% CI 5.25 to 15.57), after adjustment for the other characteristics. Women scored 11.4 points higher than men after adjustment ($\beta = 0.202$, $p = 0.020$), although gender was not associated with satisfaction in bivariate analysis. Higher educational level was associated with lower satisfaction ($\beta = -0.194$, $p = 0.041$). Age, marital status, specialty, work experience, income, working days and daily hours were not independently associated. Diagnostics showed no problematic collinearity (VIF 1.31–2.77), independent residuals (Durbin–Watson = 1.81), no evidence of heteroscedasticity (Breusch–Pagan $\chi^2 = 10.58$, $p = 0.480$), normally distributed residuals (Shapiro–Wilk $p = 0.829$) and no influential observations (maximum Cook's distance = 0.097). With HC3 robust standard errors, intended stay ($p < 0.001$) and gender ($p = 0.021$) remained significant, whereas education became borderline ($p = 0.054$).

Table 4. Multiple linear regression of factors associated with the total job satisfaction score (n = 146)

Predictor	B	SE	95% CI	β	t	p	p (HC3)
(Constant)	85.35	36.39	13.37 to 157.33	—	2.35	0.020	0.029
Age group	−6.71	3.99	−14.60 to 1.18	−0.173	−1.68	0.095	0.147
Female (vs. male)	11.44	4.86	1.82 to 21.05	0.202	2.35	0.020	0.021
Married (vs. not married)	−2.47	5.51	−13.37 to 8.43	−0.045	−0.45	0.655	0.674
Educational level	−8.12	3.93	−15.91 to −0.34	−0.194	−2.06	0.041	0.054
Physician (vs. allied health)	2.32	8.03	−13.56 to 18.20	0.026	0.29	0.773	0.798
Administrator (vs. allied health)	−3.67	5.84	−15.22 to 7.88	−0.055	−0.63	0.531	0.579
Work experience	4.83	2.81	−0.72 to 10.38	0.215	1.72	0.087	0.094
Monthly income	3.94	3.31	−2.60 to 10.49	0.134	1.19	0.236	0.218
Intended stay	10.41	2.61	5.25 to 15.57	0.389	3.99	<0.001	<0.001
Working days per week	−1.00	3.44	−7.80 to 5.80	−0.031	−0.29	0.771	0.791
Working hours per day	0.90	1.89	−2.84 to 4.64	0.055	0.47	0.636	0.657

Dependent variable: total job satisfaction score (range 32–160). $F(11, 134) = 4.06$, $p < 0.001$; $R^2 = 0.250$; adjusted $R^2 = 0.188$. Ordered predictors entered as ordinal codes (age, education, experience, income and intended stay: 1–4). B, unstandardized coefficient; SE, standard error; CI, confidence interval; β, standardized coefficient; HC3, heteroscedasticity-consistent standard errors.

3.5 Discussion

This is, to our knowledge, the first study of job satisfaction across professional groups in private healthcare organizations in Hail, Saudi Arabia. Just over half of health professionals (56.2%) were satisfied, and the overall mean score (3.47 of 5) was in the lower part of the satisfied range. Relational aspects of work were the main strength; pay and end-of-service benefits, working hours, recognition and trust in management were the main weaknesses. Intention to stay was the strongest correlate of satisfaction, and more than a quarter of staff planned to leave within a year.

The moderate overall level is consistent with Saudi studies of nurses in primary care and hospitals (20–22) and with a university hospital in Al-Khobar (23). It is lower than the 76% to 90% satisfaction reported in Nepal and Nigeria (14, 15) and higher than the low levels found in South Africa and Ethiopia (13, 33). Differences in instruments and cut-offs limit direct comparison, but satisfaction in healthcare is rarely high across all dimensions. The domain profile matches Herzberg's two-factor theory (11). Work relationships, the work itself and respectful supervision relational and intrinsic factors were rated highest. Pay, benefits and working hours classic hygiene factors were rated lowest. Similar profiles were reported in Turkey, where staff were satisfied with their role but not with pay and working conditions (16), in a Cypriot public hospital (34) and in Omani clinical laboratories (35). Teamwork was also the most positively rated aspect in the United States SEHC validation study (18). Because deficient hygiene factors are theorized to generate dissatisfaction and have been linked to turnover (7, 11), the low pay and benefits scores are a concern for workforce stability. The lowest-rated items concerned fair compensation and end-of-service benefits, with nearly one-third of staff dissatisfied. In the Saudi private sector, end-of-service and retirement arrangements may be less generous than in government employment, and many staff are employed on fixed-term contracts. Most participants also worked six days per week, and nearly a quarter worked 12-hour days. Long hours and heavy workloads are recognized contributors to lower satisfaction and burnout among health workers (5, 12, 36). Total scores were descriptively lower among staff working six days per week, but this difference was not statistically significant ($p = 0.215$), and working days and daily hours were not independently associated with the total score. The leadership domain showed a clear internal contrast. Respect from supervisors was among the highest-rated items (3.79), but trust in what management communicates was among the lowest-rated items (3.23), with nearly a third dissatisfied. This suggests good relationships with direct supervisors but weaker trust in organizational leadership. Management style and communication are central to workplace climate and performance in healthcare (37, 38).

More than two-thirds of participants (69.9%) also endorsed the view that employee satisfaction affects the quality of care, consistent with evidence linking staff well-being to patient safety and outcomes (5, 6).

Intended length of stay was the strongest and most robust correlate of satisfaction. Staff planning to leave within a year scored about 32 points lower than those planning to stay more than nine years. This agrees with the well-established link between satisfaction and turnover intention (7, 8). Because the design is cross-sectional, the direction cannot be established: dissatisfaction may prompt plans to leave, or staff who already plan to leave may disengage. Both may also share common causes, such as contract type, pay or career prospects, that were not fully measured. Because intended stay is conceptually close to turnover intention, its regression coefficient describes how closely the two are related rather than the effect of one on the other, and it does not show whether job satisfaction determines employees' actual decisions to remain with or leave their organization. Higher education was associated with lower satisfaction after adjustment. More highly qualified staff may expect greater pay, autonomy and career progression, and so perceive a larger gap between expectations and reality; if confirmed, this could place private organizations at risk of losing their most qualified staff. The association was modest and borderline with robust standard errors, so it should be interpreted cautiously. Women were more satisfied than men after adjustment, although not in unadjusted comparisons, which suggests that the gender difference emerges only once differences in education, experience and intended stay are taken into account. Similar findings of higher satisfaction among female staff have been reported in Spain (17), but the result needs confirmation. Work experience and income correlated with satisfaction in bivariate analysis but not after adjustment, possibly because both overlap with intended stay and with each other. Age, marital status and specialty were not associated with satisfaction, in agreement with several previous studies (14–16, 33). The model explained 25.0% of the variance, indicating that much of the variation is related to factors not measured here. Organizational characteristics are likely to be particularly relevant. The participating organizations ranged from hospitals to medical complexes and clinics, which may differ in size, staffing levels, shift systems, pay scales, contract arrangements and management practices; resource constraints may also play a part: fewer than half of participants (49.3%) were satisfied that everything they needed to do their work was available, and capacity assessments in the Gaza Strip and in other low- and middle-income countries have documented gaps in essential medicines, basic equipment and diagnostic investigations in public-sector health facilities (39, 40). Because the organization of each respondent was not recorded, these differences, and the possible clustering of responses within organizations, could not be examined. Demographic findings may also partly reflect organizational and occupational differences: the gender and education associations, for example, may reflect differences in roles, contract types, nationality or career expectations between groups rather than gender or education per se. These explanations remain speculative and should be tested in larger studies that record organizational characteristics.

Although these cross-sectional associations do not establish causality, they point to four potential priorities for managers of private healthcare organizations in Hail. First, pay and end-of-service benefits should be reviewed against market benchmarks, with clearer long-term incentives. Second, given the low ratings of working hours, scheduling policies could be reviewed to limit six-day weeks and long shifts. Third, formal recognition systems and transparent management communication could build trust in leadership; among Palestinian primary care professionals, lack of incentives, limited acknowledgment from management and time constraints related to workload were reported as major barriers to adherence to clinical protocols (41), which parallels the low ratings of pay, recognition and working hours observed here. Fourth, because satisfaction is closely associated with intention to stay, routine monitoring of satisfaction and turnover intention should be part of workforce planning as the private sector grows under Vision 2030 (10, 19), together with attention to staff psychological well-being, which may be strained during outbreaks and other crises (42). Highly qualified staff and staff early in their tenure may benefit most from clear career pathways and development opportunities.

3.6 Strengths and limitations

To our knowledge, this study is the first to address job satisfaction in Hail's private health sector and included multiple professional groups, used a bilingual instrument with excellent internal consistency, and applied multivariable analysis with regression diagnostics and a robust-standard-error sensitivity analysis. Several limitations should be considered. First, the cross-sectional design precludes causal inference; the associations reported, including that between satisfaction and intended stay, cannot show whether job satisfaction directly determines employees' decisions to remain with or leave their organization, and intended stay was measured as a self-reported intention rather than as actual turnover. Second, the sample size (n = 146) was smaller than initially planned, and although it was sufficient to detect a moderate overall model effect, smaller associations with

individual predictors may have been missed; furthermore, convenience sampling limits generalizability, the estimated margin of error was approximately ±7.8%, and the response rate could not be calculated because the number of staff who received the survey link was unknown. Third, physicians were under-represented (11.0%), limiting the statistical power of subgroup comparisons by professional specialty. Fourth, although the study-specific questionnaire demonstrated excellent internal consistency, its structure was examined only with exploratory analyses in the same sample; a single dominant factor emerged, so the nine domains were not empirically distinct, confirmatory factor analysis was not performed, and the very high overall Cronbach's alpha may indicate some item redundancy. In addition, two work culture items captured perceived consequences of satisfaction rather than satisfaction itself. Fifth, self-reported data may be subject to social desirability bias despite the use of anonymous responses, and to common-method bias, because satisfaction and intended stay were measured in the same questionnaire at the same time. Sixth, ordered categorical variables were entered as ordinal codes, assuming equal spacing between categories, while daily working hours were collected as free-text responses. Seventh, nationality and type of organization were not collected, although both factors may influence job satisfaction in the Saudi private healthcare sector; likewise, the organization in which each participant worked was not recorded, so clustering of responses within organizations could not be accounted for and standard errors may have been underestimated. Eighth, intended length of stay is conceptually close to turnover intention and may be a consequence rather than a determinant of job satisfaction; its inclusion as a covariate and its use as a known-groups criterion should therefore be interpreted with caution. Finally, staff who were more engaged, or more dissatisfied, may have been more likely to respond, and the findings apply mainly to private healthcare organizations in a mid-sized Saudi city and should not be extrapolated to the public sector. Future research should use validated instruments supported by confirmatory factor analysis, probability-based sampling across the region, and longitudinal designs that examine whether job satisfaction is associated with actual staff turnover and patient outcomes.

4. CONCLUSION

Health professionals in private healthcare organizations in Hail City were moderately satisfied, with just over half satisfied overall. Good relationships with colleagues and respectful supervision were strengths, whereas pay and end-of-service benefits, working hours, recognition and trust in management were the weakest areas. Satisfaction was strongly associated with staff intentions to remain in their organization, and more than a quarter planned to leave within a year; highly educated staff were less satisfied. Because the design was cross-sectional and the sample non-probabilistic, these findings indicate associations rather than causal effects. Nevertheless, private healthcare managers and policymakers may consider prioritizing competitive compensation, fairer scheduling, structured recognition and transparent leadership to retain a qualified workforce as the private sector expands, and longitudinal studies should test whether such measures improve satisfaction and retention.

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AUTHOR CONTRIBUTIONS

AA: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Project administration, Writing – original draft, Writing – review & editing. SEK: Methodology, Formal analysis, Supervision, Validation, Writing – review & editing. All authors read and approved the final manuscript and agree to be accountable for all aspects of the work.

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CONFLICT OF INTEREST

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

ETHICS STATEMENT

The studies involving humans were approved by the Research Ethics Committee, University of Ha'il, Saudi Arabia (approval no. H-2025-269, 22 October 2025). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written (electronic) informed consent to participate in this study.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation, upon reasonable request to the corresponding author.

REFERENCES

[1] Locke EA. The nature and causes of job satisfaction. In: Dunnette MD, editor. Handbook of Industrial and Organizational Psychology. Chicago: Rand McNally (1976). p. 1297–349.
[2] Spector PE. Job Satisfaction: Application, Assessment, Causes, and Consequences. Thousand Oaks, CA: Sage Publications (1997).
[3] Aziri B. Job satisfaction: a literature review. Manag Res Pract. (2011) 3:77–86.
[4] Judge TA, Thoresen CJ, Bono JE, Patton GK. The job satisfaction–job performance relationship: a qualitative and quantitative review. Psychol Bull. (2001) 127:376–407. doi: 10.1037/0033-2909.127.3.376
[5] Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare staff wellbeing, burnout, and patient safety: a systematic review. PLoS One. (2016) 11:e0159015. doi: 10.1371/journal.pone.0159015
[6] Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. JAMA. (2002) 288:1987–93. doi: 10.1001/jama.288.16.1987
[7] Tett RP, Meyer JP. Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta-analytic findings. Pers Psychol. (1993) 46:259–93. doi: 10.1111/j.1744-6570.1993.tb00874.x
[8] Hayes LJ, O'Brien-Pallas L, Duffield C, Shamian J, Buchan J, Hughes F, et al. Nurse turnover: a literature review. Int J Nurs Stud. (2006) 43:237–63. doi: 10.1016/j.ijnurstu.2005.02.007
[9] Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. Ann Fam Med. (2014) 12:573–6. doi: 10.1370/afm.1713
[10] World Health Organization. Global Strategy on Human Resources for Health: Workforce 2030. Geneva: World Health Organization (2016).
[11] Herzberg F, Mausner B, Snyderman BB. The Motivation to Work. 2nd ed. New York: John Wiley & Sons (1959).
[12] Lu H, Zhao Y, While A. Job satisfaction among hospital nurses: a literature review. Int J Nurs Stud. (2019) 94:21–31. doi: 10.1016/j.ijnurstu.2019.01.011
[13] Abate HK, Mekonnen CK. Job satisfaction and associated factors among health care professionals working in public health facilities in Ethiopia: a systematic review. J Multidiscip Healthc. (2021) 14:821–30.
[14] Kolo ES. Job satisfaction among healthcare workers in a tertiary center in Kano, Northwestern Nigeria. Niger J Basic Clin Sci. (2018) 15:87–91.
[15] Chaulagain N, Khadka DK. Factors influencing job satisfaction among healthcare professionals at Tilganga Eye Centre, Kathmandu, Nepal. Int J Sci Technol Res. (2012) 1:32–6.
[16] Bodur S. Job satisfaction of health care staff employed at health centres in Turkey. Occup Med (Lond). (2002) 52:353–5. doi: 10.1093/occmed/52.6.353
[17] Carrillo-García C, Solano-Ruíz MC, Martínez-Roche ME, Gómez-García CI. Job satisfaction among health care workers: the role of gender and age. Rev Lat Am Enfermagem. (2013) 21:1314–20.
[18] Chang E, Cohen J, Koethe B, Smith K, Bir A. Measuring job satisfaction among healthcare staff in the United States: a confirmatory factor analysis of the Satisfaction of Employees in Health Care (SEHC) survey. Int J Qual Health Care. (2017) 29:262–8. doi: 10.1093/intqhc/mzx012
[19] Kingdom of Saudi Arabia. Health Sector Transformation Program: Vision 2030. Riyadh: Council of Economic and Development Affairs (2021). Available at: https://www.vision2030.gov.sa/en/explore/programs/health-sector-transformation-program
[20] Almalki MJ, FitzGerald G, Clark M. Quality of work life among primary health care nurses in the Jazan region, Saudi Arabia: a cross-sectional study. Hum Resour Health. (2012) 10:30. doi: 10.1186/1478-4491-10-30
[21] Alotaibi J, Paliadelis PS, Valenzuela FR. Factors that affect the job satisfaction of Saudi Arabian nurses. J Nurs Manag. (2016) 24:275–82.
[22] Al-Ahmadi H. Factors affecting performance of hospital nurses in Riyadh Region, Saudi Arabia. Int J Health Care Qual Assur. (2009) 22:40–54. doi: 10.1108/09526860910927943

[23] Alali M. Job satisfaction and associated factors among healthcare workers at King Fahad University Hospital in Al-Khobar, Kingdom of Saudi Arabia. Arab Institute of Science and Research Publishing (2023).
[24] von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. Lancet. (2007) 370:1453–7. doi: 10.1016/S0140-6736(07)61602-X
[25] Eysenbach G. Improving the quality of web surveys: the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). J Med Internet Res. (2004) 6:e34. doi: 10.2196/jmir.6.3.e34
[26] Cochran WG. Sampling Techniques. 3rd ed. New York: John Wiley & Sons (1977).
[27] Cohen J. Statistical Power Analysis for the Behavioral Sciences. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates (1988).
[28] Sullivan GM, Artino AR. Analyzing and interpreting data from Likert-type scales. J Grad Med Educ. (2013) 5:541–2. doi: 10.4300/JGME-5-4-18
[29] Tavakol M, Dennick R. Making sense of Cronbach's alpha. Int J Med Educ. (2011) 2:53–5. doi: 10.5116/ijme.4dfb.8dfd
[30] Norman G. Likert scales, levels of measurement and the "laws" of statistics. Adv Health Sci Educ Theory Pract. (2010) 15:625–32. doi: 10.1007/s10459-010-9222-y
[31] Lumley T, Diehr P, Emerson S, Chen L. The importance of the normality assumption in large public health data sets. Annu Rev Public Health. (2002) 23:151–69. doi: 10.1146/annurev.publhealth.23.100901.140546
[32] Long JS, Ervin LH. Using heteroscedasticity consistent standard errors in the linear regression model. Am Stat. (2000) 54:217–24. doi: 10.1080/00031305.2000.10474549
[33] Ramasodi JMB. Factors influencing job satisfaction among healthcare professionals at South Rand Hospital [master's dissertation]. Polokwane: University of Limpopo (2010).
[34] Lambrou P, Kontodimopoulos N, Niakas D. Motivation and job satisfaction among medical and nursing staff in a Cyprus public general hospital. Hum Resour Health. (2010) 8:26. doi: 10.1186/1478-4491-8-26
[35] Alrawahi S, Sellgren SF, Altouby S, Alwahaibi N, Brommels M. The application of Herzberg's two-factor theory of motivation to job satisfaction in clinical laboratories in Omani hospitals. Heliyon. (2020) 6:e04829. doi: 10.1016/j.heliyon.2020.e04829
[36] Hayes B, Bonner A, Pryor J. Factors contributing to nurse job satisfaction in the acute hospital setting: a review of recent literature. J Nurs Manag. (2010) 18:804–14. doi: 10.1111/j.1365-2834.2010.01131.x
[37] Platis C, Reklitis P, Zimeras S. Relation between job satisfaction and job performance in healthcare services. Procedia Soc Behav Sci. (2015) 175:480–7. doi: 10.1016/j.sbspro.2015.01.1226
[38] Musaed A, Aklan M. Job satisfaction and its impact on achieving the quality of health service in government hospitals: a case study on Al-Thawrah General Hospital, Taiz. Al-Saeed Univ J Humanit Sci. (2023).
[39] Albelbeisi AH, Albelbeisi A, El Bilbeisi AH, Taleb M, Takian A, Akbari-Sari A. Public sector capacity to prevent and control of noncommunicable diseases in twelve low- and middle-income countries based on WHO-PEN standards: a systematic review. Health Serv Insights. (2021) 14:1178632920986233. doi: 10.1177/1178632920986233
[40] Albelbeisi AH, Albelbeisi A, El Bilbeisi AH, Takian A, Akbari-Sari A. Capacity of Palestinian primary health care system to prevent and control of non-communicable diseases in Gaza Strip, Palestine: a capacity assessment analysis based on adapted WHO-PEN tool. Int J Health Plann Manage. (2020) 35:1412–25. doi: 10.1002/hpm.3022
[41] Albelbeisi AH, Albelbeisi A, El Bilbeisi AH, Taleb M, Takian A, Akbari-Sari A. Barriers of adherence among Palestinian healthcare professionals towards the protocol of health education and counselling on healthy behaviours for non-communicable diseases. Ethiop J Health Sci. (2021) 31:73–84. doi: 10.4314/ejhs.v31i1.9
[42] Shehada AK, Albelbeisi AH, Albelbeisi A, El Bilbeisi AH, El Afifi A. The fear of COVID-19 outbreak among health care professionals in Gaza Strip, Palestine. SAGE Open Med. (2021) 9:20503121211022987. doi: 10.1177/20503121211022987