



Original research article

Human resource management in healthcare facilities and healthcare employees' satisfaction

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Abstract

Background: Identifying and understanding differences in job satisfaction among healthcare employees, along with how they connect to HR practices, are crucial components of the long-term sustainability of healthcare facilities.

Methods: The research data were collected in the spring of 2025 from healthcare sector employees. A total of 121 employees, across different genders, ages, and job positions, participated in the study. The research used a questionnaire survey to evaluate job satisfaction factors and HR practices. Several statistical methods were applied, including the Mann–Whitney *U* test, the Kruskal–Wallis test, *post hoc* analysis, and ordinal logistic regression.

Results: The results indicate that overall job satisfaction is relatively high. However, several problematic areas remain. These include workload, remuneration, and opportunities for career advancement. Statistically significant gender differences were found in satisfaction with salary, bonuses, and career advancement, with women reporting lower levels of satisfaction. Differences by job position were also identified in the perception of wages and bonuses, as well as in satisfaction with management. Nurses and non-medical healthcare staff exhibit higher levels of dissatisfaction.

Conclusion: The results show that employees' perceptions of job satisfaction and HR practices are influenced more by organizational factors than by demographic characteristics. Targeted support is therefore required. This paper provides a deeper understanding of employee satisfaction in healthcare and offers measures and practical implications for HR departments and for healthcare facility management.

Keywords: Employees; Healthcare; HR practices; Human Resource Management

Introduction

Human resource management (HRM) is an integral part of any organization. It plays a vital role in healthcare, as people and employees are one of the key assets of a successful organization in this sector (Surji and Sourchi, 2020). To retain key employees, it is necessary to establish all personnel processes, policies, and practices properly. That is why it is essential to address this issue and understand the satisfaction levels of employees, how they feel about their workload, and which benefits they prefer (Cantarelli et al., 2023; Duru and Hamoud, 2021). It is also essential to consider whether everyone perceives these issues the same way or whether there are differences, for example, by gender, age, or job classification. Employee satisfaction also directly affects patient satisfaction, as reflected in healthcare facility ratings (Bumbach et al., 2020; Park et al., 2020).

Satisfaction with the working environment is one of the overall indicators of how HR processes and policies are set up. This variable is also emphasized in this research, which surveys employee satisfaction. This topic is currently being addressed in academic discussions (Ramli, 2019). Work satisfaction is

inextricably linked to work-life balance (Ocean and Meyer, 2023), and other factors associated with this issue, such as workload and working hours, also need to be given due consideration (Moreno-Martínez and Sánchez-Martínez, 2025).

It is also important to address traditional HR areas. One of these, which is very important for the healthcare sector, is employee training and continuing education (Alharbi and Al-yuni, 2023). At the same time, it is advisable to manage the career growth and advancement of all employees efficiently. This is a significant motivating factor for employees to remain in the organization, and another opportunity for the HR department to prevent the departure of quality personnel (Shaikh, 2025).

The remuneration and evaluation of employees in healthcare are critical. In addition to the traditional form of remuneration, i.e., wages, several other areas can be addressed, such as various allowances and bonuses. It is also necessary to consider intangible remuneration, such as sufficient vacation days and other time off, including sick days (El Mouaddib et al., 2023; Sutanto et al., 2023; Wahyuhadi et al., 2023).

In the literature, human resource management is often interpreted through the lens of organizational behavior (Kumar, 2024) or theories of work motivation, such as self-determi-

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nation theory (Van den Broeck et al., 2016). Both approaches emphasize employee satisfaction, which is influenced by the quality of the work environment and the design of processes. Key factors include remuneration, quality of communication, and management style (Jo and Shin, 2025; Souisa et al., 2025). Furthermore, current research indicates that individual characteristics, such as age or gender, are insufficiently explanatory, and greater emphasis should be placed on organizational and systemic factors (Alkan et al., 2024).

All of the areas mentioned are essential components of working with employees in healthcare organizations. They warrant due attention, not only in aggregate but also across individual employee categories. The study is descriptive and applied in nature, aiming to map healthcare employees' perceptions rather than to test a specific theoretical model.

Materials and methods

Study design

This study focuses exclusively on practices related to working with existing employees rather than on recruitment and hiring. The main objective of this article is to map employees' perceptions of selected HR practices and to reveal differences across staff groups. The practices described in the introduction were used, as they offer opportunities to improve the work environment and can lead to greater overall employee satisfaction.

Data collection

Data collection was conducted in the spring of 2025. The data were obtained through an online questionnaire distributed to healthcare facilities. This was a web-based questionnaire distributed to healthcare facilities located in Czech Republic, with a focus on public hospitals. It ensured representation for both medical and non-medical professions. The questionnaires were sent to each facility online and distributed via the internal communication system, so employees could easily complete them. To maintain the anonymity of participating institutions, no organizational identifiers are reported here. The sample was obtained using non-probability convenience sampling. The questionnaire consisted of 15 questions: 13 closed-ended and two open-ended. The closed-ended questions were dichotomous (gender), interval-based (age), categorical (job position), or ordinal, using a 1–4 scale, where 1 indicated the highest possible level of satisfaction or agreement, and 4 indicated the highest possible level of dissatisfaction or disagreement. The choice of the number of response options on a scale remains a subject of ongoing debate (Tanujaya et al., 2022). To ensure the questionnaire's content validity, a pilot study was conducted with a sample of 10 healthcare employees. The authors also validated the questionnaire. Based on feedback from the pilot phase, minor adjustments were made.

The individual questions and items in the questionnaire were designed specifically for this study; however, they are all based on a prior literature review focused on human resource management and employee satisfaction in the healthcare sector. The selection of variables fully reflected the key elements discussed in the literature (Akbari et al., 2020; Cunningham et al., 2022; Koehler and Olds, 2021; Peng et al., 2022; Sanner-Stiehr et al., 2021; Sutanto et al., 2023; Tan and Chin, 2023). The following ten variables were examined: overall job satisfaction, interdepartmental communication, workload, opportunities for training and education, satisfaction with management, satisfaction with remuneration (wages, allow-

ances, bonuses, and vacation), compliance with occupational health and safety and other regulations, opportunities for career advancement, work–life balance, and satisfaction with working hours.

Participants and research sample

The research participants were healthcare sector employees in both medical and non-medical positions. A total of 121 employees participated in the survey, yielding a response rate of slightly over 10%. According to the power analysis, the research sample reached an almost optimal value; the study was conducted with an effect size of 0.5, a significance level of 0.05, and a statistical power of 0.8, indicating an optimal sample size of $n = 128$ (Garg et al., 2024).

The research sample can be characterized as follows: Men accounted for 35% of the sample, while women represented 65%. In terms of age, 17% of employees were under 30, 19% were in the 30–40 age group, 27% were between 40 and 50, and the remaining 37% were over 50. Respondents were also asked about their job positions. Physicians accounted for 21% of the sample, nurses for 49%, technical staff for 9%, administrative employees and lower management for 6%, and the remaining 15% consisted of non-medical healthcare personnel.

Data analysis

Following data collection, statistical analysis was conducted. As an initial step, the data were assessed for normality using the Shapiro–Wilk test (Uhm and Yi, 2021), which indicated that the data did not follow a normal distribution. This was followed by an analysis of reliability using Cronbach's alpha (Amirrudin et al., 2020). The obtained value was 0.72, indicating good internal consistency of the data. Subsequently, basic descriptive statistics were applied, in particular, the weighted mean for each examined variable. To identify differences between the two gender groups, the Mann–Whitney U test was used (Schober and Vetter, 2020). Differences by age and job position were analyzed using the Kruskal–Wallis test (Johnson, 2022), and the *post hoc* Dunn test was also applied (Midway et al., 2020). Ordinal logistic regression was also used to comprehensively assess overall job satisfaction (French and Shotwell, 2022). All calculations were performed in RStudio and Microsoft Excel.

The research objective was to determine whether differences exist in the perception of individual job satisfaction factors among employees in healthcare facilities depending on gender, age, and job position.

To achieve the main objective, 3 partial research objectives were formulated. The first research objective was to verify the existence of statistically significant differences between men and women in the evaluation of at least one of the examined factors of job satisfaction. The second research objective focused on examining the existence of statistically significant differences among individual age groups of employees in the evaluation of at least one of the examined factors of job satisfaction. The third research objective aimed to assess whether the evaluation of at least one of the examined factors of job satisfaction differs statistically significantly among individual professional groups of employees.

Research ethics

The research was conducted with the consent of the management of the healthcare facilities from which the data were collected. All data were obtained voluntarily from employees, who were informed about the purpose of the data collection

and the party for whom the data were being provided. All collected data has been anonymized. To prevent the possible identification of individual participants, it will not be disclosed in any form other than aggregated results.

Results

First, the basic descriptive statistics of the observed variables were calculated using the mean. The results are presented in Table 1, where each variable is reported together with its numerical value and a verbal interpretation of the mean.

Table 1. Mean values for observed variables

Variable	Mean	Commentary
Job satisfaction	1.733	Satisfaction predominates
Communication	2.100	Quite satisfied
Workload	2.833	Quite high
Training	1.942	Quite satisfied
Management	2.133	Quite satisfied
Wage/Salary	2.250	Quite satisfied
Allowances	2.533	Neither dissatisfied nor satisfied
Bonuses	2.633	Quite dissatisfied
Vacation	2.342	Quite satisfied
Occupational health	1.958	Quite satisfied
Career advancement	2.700	Quite dissatisfied
Work-life balance	2.233	Quite satisfied
Working hours	1.950	Quite satisfied

The table shows that overall job satisfaction is lowest among the examined variables, indicating a relatively high level of job satisfaction in the healthcare sector. However, a closer look at the individual components reveals areas where employees report dissatisfaction. These include, in particular, workload, which appears to be the lowest-rated variable, as well as opportunities for bonuses, allowances, and career advancement. In contrast, employees report high levels of satisfaction with working hours and opportunities for education and training. It is therefore evident that several areas require improvement, not only from the perspective of HR managers but also from that of hospital management.

Next, perceived differences in the evaluation of individual factors by gender were examined. The Mann-Whitney test was used to identify statistically significant differences. The results are summarized in Table 2.

For most of the examined variables, no statistically significant differences were identified (p -value > 0.05). Statistically significant differences were found only for satisfaction with salary (p -value < 0.001) and bonuses (p -value < 0.001), as well as for perceptions of career advancement opportunities (p -value = 0.014). In all three cases, men report higher levels of satisfaction than women. Hence it is evident that a gender gap still exists in both pay and opportunities for further career development.

The formulated partial objective 1 is therefore only partially achieved, as men and women show broadly similar perceptions of the examined variables, with differences identified only in satisfaction with salary, bonuses, and opportunities for career advancement.

Table 2. Gender differences based on the Mann-Whitney test

Variable	W characteristics	p -value
Job satisfaction	1,572.0	0.757
Communication	1,649.0	0.847
Workload	1,341.0	0.079
Training	1,822.5	0.207
Management	1,319.5	0.053
Wage/Salary	1,044.5	<0.000
Allowances	1,346.0	0.103
Bonuses	807.0	<0.000
Vacation	1,519.5	0.559
Occupational health	1,351.0	0.111
Career advancement	1,225.0	0.014
Work-life balance	1,677.5	0.721
Working hours	1,816.0	0.235

Based on the findings, it is recommended that regular evaluations of the wage structure among employees, or of the entire remuneration system, be conducted. The main emphasis should be placed on transparency and equal conditions for both genders in comparable job positions. The bonus system should be based on clearly defined, objective, and measurable indicators.

Subsequently, potential differences in the examined variables were identified by age group. Age was divided into four categories: under 30 years, 30–40 years, 40–50 years, and over 50 years. The Kruskal-Wallis test was applied to identify statistically significant differences. The results are summarized in Table 3.

The findings are surprising. No statistically significant differences by age were identified for any of the variables, as all p -values exceeded the 0.05 significance level. The variables closest to statistical significance are opportunities for further education (p -value = 0.116), opportunities for career advancement (p -value = 0.158), and satisfaction with remuneration (p -value = 0.204). However, based on the applied test, it can-

Table 3. Age differences based on the Kruskal-Wallis test

Variable	Kruskal-Wallis chi-squared	p -value
Job satisfaction	3.079	0.379
Communication	3.978	0.263
Workload	2.168	0.538
Training	5.907	0.116
Management	2.122	0.548
Wage/Salary	4.599	0.204
Allowances	1.801	0.615
Bonuses	1.632	0.652
Vacation	2.849	0.415
Occupational health	1.283	0.733
Career advancement	5.195	0.158
Work-life balance	0.378	0.945
Working hours	2.945	0.400

not be concluded that the individual age groups differ from one another.

Partial objective 2 was not achieved, as no statistically significant differences were observed among the examined variables based on respondents' age.

An analysis of differences in perceptions of individual satisfaction factors by job position was also conducted. Five groups of employees were examined: physicians, nurses, non-medical healthcare staff, administrative staff and lower management, and technical staff. The Kruskal–Wallis test was again used to identify statistically significant differences. The results are presented in Table 4.

Table 4. Differences by job position based on the Kruskal–Wallis test

Variable	Kruskal–Wallis chi-squared	<i>p</i> -value
Job satisfaction	8.147	0.086
Communication	6.989	0.136
Workload	4.514	0.341
Training	1.413	0.842
Management	16.355	0.003
Wage/Salary	36.079	<0.000
Allowances	8.723	0.068
Bonuses	17.488	0.002
Vacation	0.923	0.921
Occupational health	4.636	0.327
Career advancement	6.681	0.154
Work-life balance	6.179	0.187
Working hours	1.197	0.879

Again, it was observed that, for most variables, the *p*-values exceed 0.05, indicating that the differences are more likely due to chance than statistically significant. However, statistically significant differences were found in satisfaction with organizational management (*p*-value = 0.003), satisfaction with salary level (*p*-value < 0.001), and the availability of bonuses (*p*-value = 0.002). Perceptions of overall job satisfaction, as well as satisfaction with another component of remuneration – namely allowances – are also very close to the level of statistical significance.

Partial objective 3 was therefore not fully confirmed. For most variables, no statistically significant differences were found among the individual employee groups; differences were evident only in satisfaction with management, salary, and bonuses.

To identify which employee groups differ, a Dunn *post hoc* test was applied. Two comparisons were found to be statistically significant, namely between nurses and technical staff (*p*-value = 0.005), and between non-medical healthcare staff and technical staff (*p*-value = 0.041). The results indicate that technical staff report higher satisfaction with management than nurses and non-medical healthcare staff. This finding suggests that organizational management and HR depart-

ments should focus primarily on communication with nurses and non-medical healthcare staff, who exhibit statistically significant dissatisfaction.

Another statistically significant difference was observed in satisfaction with salary. Following the *post hoc* test, specific professional groups exhibiting substantial differences were identified. The first difference was observed between physicians and nurses (*p*-value < 0.001) and between physicians and non-medical healthcare staff (*p*-value < 0.001), with physicians reporting significantly higher salary satisfaction in both cases. Differences were also identified between technical staff and nurses (*p*-value < 0.001), and between technical staff and non-medical healthcare staff (*p*-value = 0.003). Technical staff were more satisfied with their salary than the latter two groups in both comparisons.

Bonuses are the final area in which statistically significant differences were identified. A *post hoc* test was also applied in this case and revealed a statistically significant difference between physicians and nurses (*p*-value = 0.019). Nurses report greater dissatisfaction with the availability of bonuses than physicians. Therefore, it is recommended that HR departments reconsider the existing bonus systems, particularly in relation to nurses. An appropriate approach would be to award bonuses based on actual job performance and workload.

The final step was to perform an ordinal logistic regression to determine which of the variables under study had a statistically significant effect on perceptions of overall satisfaction. Individual characteristics (gender, age, and position) were included as control variables. The results are summarized in Table 5.

The ordinal logistic regression analysis revealed that only two variables significantly influenced overall job satisfaction. Satisfaction with organizational management (β = 0.930, *p*-value = 0.033) and satisfaction with vacation opportunities (β = 0.939, *p*-value = 0.005) were both positively associated with higher overall job satisfaction.

Regarding job classification, as a categorical variable, comparisons were always made relative to the reference category; therefore, this variable (job classification) is not included in Table 5. It was found that statistical significance exists only between physicians and nurses, and between physicians and administrative staff and lower-level management, with the coefficients consistently indicating higher satisfaction among physicians.

In contrast, demographic characteristics such as gender and age, as well as several HR practices including wages, bonuses, training, and workload, did not show statistically significant effects in the multivariate model. Thus, the main conclusion of regression analysis is that perceptions of job satisfaction are influenced more by organizational factors than by demographic characteristics.

At this point, an answer to the formulated research question can be provided. Perceptions of individual factors in the healthcare sector vary. No differences were identified across age groups, whereas differences were observed by gender and job position. However, these differences occur only in selected areas. For both gender and job position, differences emerge in perceptions of wages and bonuses, where men report higher satisfaction than women, and nurses and other non-medical staff report greater dissatisfaction.

Table 5. Ordinal logistic regression for factors influencing overall satisfaction

Variable	β	Odds ratio	95% CI lower	95% CI upper	p-value
Gender	-0.219	0.803	0.217	2.970	0.743
Age	-0.284	0.753	0.486	1.167	0.204
Communication	0.763	2.144	0.906	5.071	0.083
Workload	0.205	1.227	0.565	2.664	0.605
Training	0.550	1.733	0.771	3.895	0.183
Management	0.930	2.534	1.078	5.953	0.033
Wage/Salary	0.270	1.310	0.608	2.822	0.491
Allowances	-0.328	0.720	0.359	1.443	0.354
Bonuses	-0.194	0.824	0.386	1.761	0.617
Vacation	0.939	2.557	1.334	4.901	0.005
Occupational health	0.408	1.503	0.760	2.971	0.241
Career advancement	0.391	1.479	0.663	3.296	0.339
Work-life balance	0.513	1.670	0.679	4.103	0.264
Working hours	0.344	1.410	0.651	3.058	0.384

Discussion

The research findings align with and further illustrate current trends in healthcare human resource management. These trends suggest that staff satisfaction is less associated with individual personal characteristics and more with broader systemic and organizational conditions, including HR processes. This corresponds with a gradual shift in the literature from demographic explanations toward more structural and managerial perspectives.

The absence of age-related differences may at first glance seem surprising, given the extensive body of literature emphasizing generational differences and, in particular, differing levels of job satisfaction across generations (Ravid et al., 2024). Tan and Chin (2023) note that generational differences typically emerge only in a limited subset of variables, such as work values, work-life balance, difficulties in adopting technology, and perceived recognition. For many other indicators, age groups exhibit comparable patterns. Nonetheless, differences between age groups may occur for variables. One possible explanation is that healthcare organizations operate within a highly regulated environment characterized by standardized professional requirements, remuneration frameworks, and working procedures. These common organizational characteristics may reduce the influence of age-specific expectations and contribute to relatively similar perceptions of job satisfaction across generations.

From a gender perspective, the results of this study largely align with findings in the international literature, although there are some slight discrepancies. Previous research often reports differences between men and women in certain aspects of job satisfaction; in some cases, men report lower satisfaction than women (El Mouaddib et al., 2023). Different patterns emerge in our sample; however, these results should be interpreted with caution. Similarly, some studies indicate the absence of gender differences in job satisfaction, while identifying differences in job performance (Bumbach et al., 2020). These differences may indicate that perceived fairness in remuneration and career opportunities remains an impor-

tant determinant of employee attitudes in healthcare organizations. Consequently, HR policies that promote transparency and equal access to career development may not only increase satisfaction but also improve employee retention.

The observed results may also contribute to the discussion of differences among various job positions, as noted in the existing literature. In addition to the lower level of job satisfaction found in this study among nurses and other non-medical staff, attention can also be drawn to other findings reported in previous studies. For example, some studies describe that even among physicians, symptoms of emotional exhaustion may arise in connection with workload, overtime, or perceived compensation levels (Moreno-Martínez and Sánchez-Martínez, 2025). Cunningham et al. (2022) also highlight that nurses have lower job satisfaction than other employee groups. The lower satisfaction reported by nurses and non-physician healthcare staff may reflect a combination of high workload, limited decision-making authority, and relatively lower perceived rewards. From a human resource management perspective, these groups appear particularly prone to turnover, highlighting the need for targeted retention and motivation strategies.

The findings should be interpreted with caution, as they reflect the perceptions of employees working in public hospitals located in the Czech Republic and may not fully reflect conditions in other healthcare settings.

Although statistically significant differences have been identified, they should be viewed with caution when considered in isolation and placed within the broader context of how organizations function. The identified differences in pay and career advancement do not necessarily reflect solely individual perceptions, but also structural characteristics of the healthcare system, as well as differences in career paths and varying representation of both genders across job positions. The results should therefore be interpreted as indicative and exploratory.

Limitations and further research

While the study provides valuable insights into perceptions of employee satisfaction in healthcare facilities, its generalizability

ty is limited by the sample size and the data collection context. Although the research sample size approaches the optimal value according to the power analysis, it cannot be readily generalized to the entire healthcare sector. Another limitation is the use of a questionnaire survey based exclusively on respondents' subjective evaluations.

The study also relies solely on data provided by respondents, who may be subject to their current emotional states and whose responses have not been verified in any way. This means that it captures the situation at a single point in time and does not describe a long-term trend; it may therefore be influenced by specific events occurring at that time (e.g., personnel changes). So-called socially desirable answers may have been filled out, even though the research was declared anonymous, but respondents may still have concerns about their possible identification.

The study is based on voluntary participation. Therefore, participating employees may be those with stronger opinions – whether positive or negative – and ordinary or less motivated employees may not be sufficiently represented. Additionally, organizations that agreed to participate in the research may differ from those that declined in terms of, for example, corporate culture, leadership, or company size.

A further limitation is the use of a four-point scale without a neutral response option. Although this approach reduced respondents' tendency to select the neutral midpoint and encouraged clearer positioning, it may also have increased response polarization and shifted the distribution of responses.

The slightly above 10% response rate may be considered relatively low, as is common in voluntary online surveys. This limitation may affect the representativeness of the results and should be considered when interpreting the findings. Nevertheless, the obtained dataset provides useful insights into employee perceptions within the participating healthcare organizations.

The research also focuses only on selected aspects of job satisfaction and human resource management. It is important to note that the study is descriptive in nature and does not allow for conclusions regarding causal relationships between the variables under investigation.

Finally, there is a potential risk of Type II error, as some insignificant findings may be due to insufficient statistical power to detect smaller effects. As all participating organizations were public hospitals located in the Czech Republic, caution should be exercised when generalizing the findings to private healthcare providers, specialized healthcare facilities, or other geographical contexts.

Future research may further develop this topic in several directions. One option is to expand the research sample by including additional respondents and, simultaneously, to broaden data collection to include qualitative approaches, such as in-depth interviews or focus groups, rather than relying exclusively on quantitative surveys. This would allow for a deeper understanding of problematic areas. Another promising avenue is to expand the set of observed variables to include additional factors, such as organizational culture, leadership style, or employee turnover, while examining potential linkages and causal relationships among them. An exciting direction would be to implement a longitudinal study to track job satisfaction over time. It would also be feasible to conduct comparative analyses with other industries or sectors, which could contribute to a more optimal design of HR processes and strategies and, in turn, support the stabilization of human resources in healthcare.

Conclusion

The study extends the debate on human resources in healthcare, specifically regarding job satisfaction, beyond demographic characteristics to include organizational and managerial factors. A key finding is confirmation of persistently existing gender-based differences, as well as identification of disagreements by occupational position, particularly in remuneration, career advancement, and satisfaction with management. These factors contribute to feelings of injustice and reduced loyalty to the system. The study confirms the importance of equity in HR practices as a key prerequisite for the sustainability of the system. At the same time, it is evident that universal policies are not ideal for healthcare; instead, targeted interventions focused on specific professional groups are needed.

The findings of this study may also be relevant to a wider range of healthcare facilities. Although the research is primarily based in the hospital setting, the identified issues in human resources management – such as workload, compensation systems, and communication quality – may be transferable to some extent to smaller healthcare facilities as well. However, the extent of this transferability must always be assessed in light of the specific organizational and institutional context of individual healthcare providers.

Conflict of interest

The authors have no conflict of interest to declare.

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