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Optimizing Incentive Mechanisms for Medical Staff in Private Orthopedic Hospitals: Evidence from Jiamusi Dongji Orthopedic Hospital

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Abstract: Private orthopedic hospitals represent a vital component of China's healthcare system, yet they face persistent challenges in attracting and retaining qualified medical personnel. This study investigates the incentive mechanism deficiencies at Jiamusi Dongji Orthopedic Hospital, a representative private orthopedic institution in Northeast China. Drawing on Herzberg's Two-Factor Theory, Vroom's Expectancy Theory, Organizational Support Theory, and Total Compensation Theory, we employ a mixed-methods approach combining quantitative surveys (n=176) and qualitative interviews (n=12). Our findings reveal four critical issues: insufficient salary competitiveness and internal inequity (only 18.1% satisfaction), limited career development pathways (11.4% satisfaction), excessive workload and burnout (82.4% reporting overload, 76.7% experiencing burnout), and inadequate non-material incentives. Based on these findings, we propose five optimization strategies: restructuring compensation systems, establishing dual-track career advancement, implementing flexible work design, strengthening organizational support, and enriching intangible incentives. This research contributes to the limited literature on human resource management in small-scale private specialty hospitals and provides actionable recommendations for similar institutions facing talent retention crises.

Keywords: private orthopedic hospital; medical staff motivation; incentive mechanism; burnout; Two-Factor Theory; organizational support

Introduction

China's healthcare reform has accelerated the growth of private medical institutions, transforming them from marginal players into essential supplements that alleviate pressure on the overburdened public healthcare system. Within this landscape, orthopedic specialties have emerged as a prime focus for private investment. Due to the high prevalence of musculoskeletal disorders, the maturity of surgical techniques (such as trauma fixation and joint replacement), and the substantial demand for postoperative rehabilitation, private orthopedic hospitals have secured a significant market foothold. However, despite their clinical importance, these institutions face deep-rooted systemic disadvantages in talent retention compared to their public counterparts. Unlike public hospitals, which offer stable institutional affiliations ("Iron Rice Bowls"), abundant academic resources, and robust pension guarantees, private hospitals operate in a precarious position. They must compete in a market where they lack the allure of official titles and research funding, making the design of effective incentive mechanisms not just a human resource function, but a matter of organizational survival.[1]

Medical staff motivation is the linchpin of operational success in orthopedic settings, where clinical workflows involve high-stakes surgical risks, physically exhausting workloads, and complex, long-term rehabilitation protocols. In such a high-pressure environment, motivation directly dictates patient safety, the quality of nursing care, and the hospital's long-term sustainability. Despite this critical importance, research on human resource management in private specialty hospitals remains underdeveloped. The academic literature is overwhelmingly skewed towards large public tertiary hospitals, leaving a significant research gap regarding the unique challenges faced by small and medium-sized private institutions. This gap is particularly pronounced for regional private orthopedic hospitals in Northeast China, a region currently grappling with economic restructuring. Here, the "brain drain" of young professionals is exacerbated by local economic constraints and a lack of specialized training opportunities, creating a perfect storm for recruitment difficulties.[2]

Jiamusi Dongji Orthopedic Hospital, established in 2010 in Heilongjiang Province, serves as a critical case study exemplifying these regional and sector-specific challenges. With a team of 126 medical staff—including 42 physicians, 68 nurses, and 16 technicians—the hospital serves a vast catchment area covering trauma, joint, spinal, and rehabilitation departments. However, beneath its clinical operations lies a human resource crisis. The hospital has experienced persistently high turnover rates, a symptom of a deeper malaise. Data from internal surveys reveal declining motivation among younger employees, who feel stifled by rigid hierarchies based on seniority rather than merit. Furthermore, frontline nurses are suffering from severe burnout, with 85.9% reporting symptoms due to excessive non-clinical administrative burdens and a lack of flexible scheduling. This study addresses the urgent research question: What are the primary deficiencies in the current incentive mechanism, specifically regarding compensation fairness, career pathing, and humanistic care, and how can they be systematically optimized using a hybrid model of Total Compensation and Two-Factor Theory to enhance staff satisfaction and retention.[3]

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Literature Review

This study integrates four established motivational theories to analyze the complex dynamics of medical staff engagement within the specific context of private orthopedic hospitals. Herzberg's Two-Factor Theory serves as a foundational framework, distinguishing between hygiene factors — such as salary levels, working conditions, and organizational policies — that prevent dissatisfaction, and motivators — such as achievement, recognition, responsibility, and advancement — that actively drive job satisfaction. The application of this theory in the context of Jiamusi Dongji Orthopedic Hospital reveals a critical imbalance; while hygiene factors like base pay and benefits are currently rated as inadequate (with 61.4% of staff expressing dissatisfaction), the theory dictates that sustainable engagement requires a shift towards strengthening intrinsic motivators like professional responsibility and career advancement.

Vroom's Expectancy Theory further explains the current motivational deficit by positing that motivation depends on the individual's belief that effort leads to performance and that performance leads to valued rewards. In the current operational environment of the hospital, this psychological contract is strained. The rigid reliance on seniority for promotions, rather than performance-based meritocracy, breaks the link between effort and reward. For medical professionals, this translates into a lack of transparent connections between their clinical contributions, the fairness of their evaluations, and the attainment of career outcomes, thereby diminishing their willingness to exert extra effort.[1]

Complementing these theories, the Organizational Support Theory emphasizes that employees' perception of organizational care and appreciation significantly influences their loyalty and engagement. This is particularly crucial for private hospitals like Dongji, which inherently lack the institutional security and stable pension benefits of public sector counterparts. The data indicates a severe lack of "Perceived Organizational Support," as staff feel management focuses excessively on revenue while neglecting their well-being, especially during high-stress periods or conflicts. Without the safety net of public employment, fostering this perception of care through humanistic management is the primary mechanism for retaining talent in the private sector.[3]

Finally, the Total Compensation Theory expands the traditional wage-focused approach by arguing that the employment value proposition must include non-monetary elements such as professional development, work environment quality, and recognition. This study utilizes this theory to critique the hospital's current "single-track" incentive model, which relies almost entirely on a basic salary structure that is uncompetitive in the Jiamusi market. The theory supports the research's recommendation to adopt a "total rewards" strategy, incorporating elements like academic support, flexible scheduling, and a supportive work environment as essential components for attracting and retaining specialized orthopedic talent.[4]

The research gap addressed by this study lies in the scarcity of empirical investigations specifically targeting small-scale private specialty hospitals in regional areas. While existing literature predominantly examines large public institutions or generic private hospitals, this study focuses on the unique operational constraints and competitive pressures facing regional orthopedic specialists. By providing context-specific evidence from Northeast China (Jiamusi, Heilongjiang), where local economic conditions and healthcare market dynamics create distinct incentive challenges—such as the "brain drain" of young talent due to limited growth opportunities—this research contributes valuable, actionable insights for optimizing human resource management in similar 中小型 (small and medium-sized) private medical institutions.[5]

Research Design

We employed a convergent mixed-methods design, collecting quantitative and qualitative data simultaneously to provide comprehensive insights into incentive satisfaction and underlying causal mechanisms. This approach addresses the methodological limitations of single-method studies by enabling cross-validation and deeper interpretation of statistical patterns.

Quantitative Survey： The survey instrument was developed based on established scales for healthcare employee motivation, adapted for private orthopedic hospital contexts. The questionnaire comprised five dimensions: compensation and benefits (4 items), career development (3 items), workload and burnout (3 items), organizational support (3 items), and non-material incentives (2 items), measured on 5-point Likert scales. Additional items captured demographic characteristics including gender, position (physician/nurse/medical technician), professional title (junior/intermediate/senior), age, and tenure.

The survey was administered to all 126 on-duty medical personnel between March and May 2026, with 200 questionnaires distributed to account for shift rotations and external assignments. After excluding incomplete responses and patterned answers, 176 valid questionnaires were retained, yielding an 88.0% effective response rate. The sample comprised 36.4% male and 63.6% female staff; 32.9% physicians, 52.3% nurses, and 14.8% medical technicians; 59.1% junior, 31.8% intermediate, and 9.1% senior titles; with 50.0% under 30 years, 36.4% aged 31-40, and 13.6% over 41 years. The detailed demographic distribution of the survey sample is presented in Table 1.

Table 1: Distribution of Basic Information for Survey Sample

Statistical Dimension	Category	Number of Samples (n)	Proportion (%)
Gender	Male	64	36.4
	Female	112	63.6
Position	Doctor	58	32.9
	Nurse	92	52.3
	Medical Technology	26	14.8
Professional Title	Beginner	104	59.1
	Intermediate	56	31.8
	Advanced	16	9.1
Age	Under 30 years	88	50.0
	31-40 years	64	36.4
	Over 41 years	24	13.6

Reliability and validity testing using SPSS 26.0 confirmed instrument quality: Cronbach's $\alpha = 0.821$ (exceeding the 0.80 threshold), KMO = 0.765, and Bartlett's test of sphericity significant at $p < 0.001$, supporting factor analysis appropriateness. The reliability and validity test results are summarized in Table 2.

Table 2: Questionnaire Reliability and Validity Analysis

Testing Indicators	Numerical Value	Judgment Result
Cronbach's α Coefficient	0.821	Good reliability
KMO Value	0.765	Validity is qualified
Bartlett's Sphericity Test P Value	<0.001	Significant

Qualitative Interviews： Semi-structured interviews were conducted with 12 purposefully selected participants: one hospital president, three department directors, four frontline physicians, and four frontline nurses. This stratified sampling ensured representation across hierarchical levels and clinical roles. Interview topics covered compensation fairness, career growth perceptions, workload stress, unmet incentive needs, and specific improvement recommendations. All interviews were recorded, transcribed verbatim, and analyzed using thematic content analysis to identify recurring patterns and explanatory narratives.

This study received ethical approval from the Hospital Ethics Committee. All participants provided informed consent, with assurance of anonymity and confidentiality. Survey data were aggregated for statistical analysis, and interview quotations were anonymized to protect participant identity.

Compensation and Benefits Deficiencies: Survey results reveal critical dissatisfaction with material incentives. As detailed in Table 3, only 4.5% of respondents reported being "very satisfied" with compensation, while 13.6% were "basically satisfied," totaling merely 18.1% positive satisfaction. Conversely, 40.9% expressed "not very satisfied" and 20.5% " very dissatisfied, " indicating that 61.4% of staff hold negative views regarding their current financial remuneration and benefits package.

Table 3: Salary and Benefits Satisfaction Survey Results

Satisfaction Level	Very Satisfied	Basically Satisfied	General (Neutral)	Not Very Satisfied	Very Dissatisfied
Number of People (n)	8	24	36	72	36
Proportion (%)	4.5	13.6	20.5	40.9	20.5

Interview data illuminate these statistics. Staff consistently reported that base salaries remained fixed for years without adjustment for inflation or market rates, falling significantly below competing private orthopedic hospitals and public hospital departments in Jiamusi. Performance bonuses were calculated solely on departmental revenue and individual workload volume, ignoring surgical complexity, medical risk exposure, and patient satisfaction metrics. Benefit provisions were limited to mandatory social insurance, lacking supplementary medical coverage, annual health screenings, night shift allowances, or meal subsidies that would acknowledge the high-risk, high-intensity nature of orthopedic practice.

Career Development Limitations: Career development satisfaction was even lower than compensation satisfaction. As shown in Table 4, only 2.3% were "very satisfied" and 9.1% "basically satisfied" (total 11.4%), while 47.7% were "not very satisfied" and 25.0% "very dissatisfied" (total 72.7%).

Table 4: Career Development Satisfaction Statistics

Satisfaction Level	Very Satisfied	Basically Satisfied	General (Neutral)	Not Very Satisfied	Very Dissatisfied
Number of People (n)	4	16	28	84	44
Proportion (%)	2.3	9.1	15.9	47.7	25.0

Qualitative findings reveal a rigid seniority-based promotion system where advancement depends primarily on years of service rather than demonstrated competence or performance. Young medical staff with strong clinical skills and high patient satisfaction ratings reported frustration at being unable to progress while older employees with mediocre abilities received priority. Training opportunities were restricted to basic pre-job orientation, lacking specialized orthopedic technique workshops, external advanced study programs, or research support for academic advancement.

Workload and Burnout Crisis: The workload assessment reveals severe strain across the hospital's medical staff. Table 5 illustrates the alarming prevalence of occupational burnout and perceived overwork, particularly among the nursing staff.

Table 5: Workload and Burnout Survey Results

Research Project	Proportion (%)
Healthcare workers who feel their workload is excessive	82.4
Healthcare workers experiencing varying degrees of burnout	76.7
Proportion of nurse population experiencing burnout	85.9

Specifically, 82.4% of staff reported excessive workload, and 76.7% experienced varying degrees of burnout, with nurses showing particularly acute distress at an 85.9% burnout prevalence. Thematic analysis identified systemic causes including inflexible fixed-shift scheduling that failed to accommodate orthopedic surgery intensity and emergency frequency, absence of compensatory time-off mechanisms, assignment of non-clinical administrative tasks to medical personnel, and lack of accommodations for pregnant or breastfeeding nurses.

Non-material incentives were characterized by superficial implementation. The hospital conducted only annual recognition events with limited awards consisting of certificates and small gifts, lacking formal ceremonies or meaningful acknowledgment. Management focused predominantly on financial performance metrics while neglecting psychological wellbeing. No mechanisms existed for psychological counseling, emotional support, or regular superior-subordinate communication. Staff reported feeling undervalued and disconnected from organizational decision-making.

Optimization Strategies

Based on theoretical analysis and empirical findings, we propose five integrated optimization strategies tailored to the specific operational realities of Jiamusi Dongji Orthopedic Hospital:

Restructure Compensation Systems: Implement a diversified compensation structure comprising base salary (market-adjusted annually), position-based pay (reflecting role-specific intensity and risk), performance bonuses (incorporating medical quality, patient satisfaction, and teamwork metrics), and special technical allowances for complex procedures.

Expand benefits to include supplementary medical insurance, annual health screenings with occupational disease focus, night shift premiums, transportation and meal subsidies, and housing assistance for core personnel.

Establish Dual-Track Career Advancement: Replace seniority-based promotion with parallel professional and management tracks. The professional track (junior clinician, attending physician, senior physician, department technical backbone, disciplinary leader) emphasizes clinical competence and academic achievement. The management track (team leader, department head, hospital administrator) emphasizes leadership capability and operational coordination. Promotion criteria should weight performance contributions, patient feedback, and business results over tenure.

Implement Flexible Work Design: Abandon fixed-shift systems for dynamic scheduling based on surgical volume and outpatient load. Create administrative support positions to handle non-clinical documentation, allowing medical staff to focus on patient care. Establish quarterly psychological counseling workshops and monthly team-building activities. Develop early burnout detection and intervention protocols.

Strengthen Organizational Support: Institutionalize monthly staff symposiums where management directly addresses concerns. Establish support files for employees facing family difficulties, pregnancy, or health challenges, providing tailored accommodations. Implement explicit policies supporting staff during patient conflicts, including legal assistance and emotional backing.

Enrich Intangible Incentives: Conduct biannual recognition ceremonies for categories including Outstanding Physician, Star Nurse, Technical Expert, and Service Model, with both honorary certificates and tangible rewards. Implement birthday benefits, holiday greetings, and hospitalization visitation programs. Engage key personnel in departmental management and protocol development decisions to enhance voice and ownership.

Results and Discussion

This study provides empirical evidence that incentive mechanisms at Jiamusi Dongji Orthopedic Hospital fail across material, developmental, managerial, and psychological dimensions, creating unsustainable conditions for talent retention. The integration of Herzberg's Two-Factor Theory, Expectancy Theory, Organizational Support Theory, and Total Compensation Theory offers a comprehensive diagnostic framework applicable to similar institutions.

From Herzberg's Two-Factor Theory perspective, hygiene factors are severely deficient: compensation falls below market rates, working conditions involve excessive physical and psychological strain, and organizational policies appear arbitrary and unfair. Without adequate hygiene factors, dissatisfaction accumulates regardless of intrinsic motivation. Simultaneously, motivators are absent — limited recognition, restricted responsibility delegation, blocked advancement pathways, and few achievement opportunities.

Vroom ' s Expectancy Theory explains why current incentives fail to drive performance. Staff perceive weak instrumentality (unclear connections between effort and rewards) and low valence (diminished value of potential outcomes given blocked career paths). When promotion depends on seniority rather than merit, and bonuses ignore clinical quality, employees rationally reduce discretionary effort.

Organizational Support Theory findings are particularly concerning for private hospital sustainability. Staff reported minimal perceived organizational concern for their wellbeing, evidenced by inflexible scheduling, lack of support during patient conflicts, and absence of personal hardship accommodations. This perceived indifference directly undermines the loyalty necessary to retain talent in competitive labor markets.

Total Compensation Theory analysis reveals over-reliance on inadequate economic compensation while neglecting non-economic value propositions. The hospital offers neither competitive wages nor enriched professional development, work-life balance, or recognition programs, creating a hollow employment value proposition.

The proposed optimization strategies address identified deficiencies through systemic restructuring rather than incremental adjustments, recognizing that private specialty hospitals must compete for talent through holistic employment value propositions. The research contributes to addressing the literature gap on small-scale private specialty hospitals in developing healthcare markets. Future research should examine implementation outcomes of these recommendations and extend the analysis to comparative multi-site studies across China's private hospital sector.

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