



Original research article

Motivation, job satisfaction, performance, and commitment of surface cleaning staff in a pediatric ICU: a cross-sectional study

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Abstract

Background: Surface cleaning and disinfection are vital to infection control in pediatric ICUs, yet those who perform them often receive little recognition, which may undermine motivation, satisfaction, performance, and organizational commitment.

Aim: To assess these constructs among nursing professionals and outsourced cleaning staff in a Brazilian PICU.

Methods: Cross-sectional study with 35 workers (23 nurses/technicians, 12 outsourced cleaners). Data were collected Nov/2023–Apr/2024 using self-administered questionnaires with sociodemographics and four validated scales (Motivation at Work, Job Satisfaction, Organizational Commitment, Work Performance). Descriptive and inferential analyses used $\alpha = 0.05$.

Results: Overall levels of motivation, job satisfaction, performance, and commitment were moderate. Intrinsic and identified motivation scored higher, while extrinsic motivation tied to pay was lowest (mean = 3.3). Job satisfaction showed no associations with sociodemographics. Higher education correlated with greater affective ($p = 0.038$) and instrumental ($p = 0.007$) commitment. Training in cleaning/disinfection was reported by 39.1% of nursing staff and 58.3% of cleaners.

Conclusion: Staff who clean PICU surfaces feel competent and engaged but report low external motivation, especially regarding pay and recognition. Expanding training, recognition, and fair compensation may strengthen satisfaction, motivation, and commitment, benefiting patient safety and infection control.

Keywords: Disinfection; Health Personnel; Job Satisfaction; Motivation; Work Performance

Introduction

Work overload and long shifts affect the physical and emotional capacities of healthcare professionals, leading to dissatisfaction, lack of motivation, and psychological problems. Adverse working conditions exacerbate this situation, increasing absenteeism and the risk of accidents. In Brazil, the healthcare workforce faces challenges such as precarious employment relationships and wage inequality, which call for urgent investments and public policies to ensure better working conditions and professional recognition (Lotta et al., 2021; Santos et al., 2023; Trindade and Montanha, 2023).

Since Florence Nightingale, nursing has recognized the close link between environment and care, with cleanliness and organization seen as key to patient safety. In many countries,

cleaning and disinfection are handled only by outsourced staff. In Brazil, however, these tasks are often shared between nursing professionals (NPs) and cleaning staff (CHP), especially in intensive care units. This gives Brazilian nursing a broader role in infection control, combining direct care with environmental management (Rigonato et al., 2024; Silva et al., 2025).

Despite the relevance of this work for patient safety, NPs and CHPs often remain invisible and do not receive proper institutional recognition (Brahm and de Medeiros, 2022). These workers are exposed to the pain, suffering, and sadness of patients, and they show strong indications of physical and psychological exhaustion (Machado et al., 2023). The feeling of devaluation and invisibility directly impacts how they perform their duties, compromising their well-being and motivation in the workplace (Brahm and de Medeiros, 2022).

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The pediatric environment requires healthcare professionals to engage emotionally beyond technical care, prioritizing a humanized approach to improve performance and job satisfaction. The severity of cases demands organization and effective communication, while long shifts, understaffed teams, lack of recognition, and work overload increase the risk of stress and burnout (Adama et al., 2022; Lorie et al., 2021).

In this context, it becomes pertinent to identify aspects related to human factors, such as satisfaction, motivation, commitment, and performance among these professionals. Work motivation can be understood as the mechanism or process that drives an individual's intensity and enthusiasm in pursuit of achieving a goal. It can also be seen as the desire to make the utmost effort to reach organizational goals, influenced by the perception that this effort will meet a personal need (Lorie et al., 2021; Pereira et al., 2024).

In turn, job satisfaction results from the balance between the professional's expectations and actual experience. It refers to the degree of appreciation for one's occupation, influenced by factors such as personality, working conditions, remuneration, and management. Job satisfaction is essential for psychological well-being, helping to prevent burnout and increasing the sense of emotional accomplishment. Dissatisfaction, on the other hand, can cause stress, burnout, and high turnover in health services, directly affecting the quality of care and patient satisfaction (Pomaranik and Kludacz-Alessandri, 2023; Samadi et al., 2023).

Another aspect to be considered is organizational commitment, which is essential for raising morale, productivity, and achieving goals. For this reason, management should promote an organizational culture that values engagement, ensuring safe and efficient care (Dalal et al., 2023).

Work performance refers to the set of behavioral characteristics and abilities of an individual aimed at achieving personal and organizational goals. It is evaluated in terms of adequacy, efficiency, and effectiveness, directly influencing well-being and job satisfaction. In addition, it involves the quality and quantity of activities performed, considering the costs and time spent. Performance encompasses individual efforts in carrying out planned behaviors, being directly associated with achieving results (Deprá et al., 2021).

An important strategy for promoting improvements in this context involves continuing education initiatives. Organizations that offer training and development programs to their employees tend to achieve higher levels of satisfaction, retention, and engagement in the workplace (Pomaranik and Kludacz-Alessandri, 2023). However, a systematic review of studies related to Surface Cleaning and Disinfection (SCD) in hospitals highlighted the need for further investigation into the training provided to professionals responsible for this activity (Dalal et al., 2023).

Although motivation, satisfaction, commitment, and job performance are widely studied topics among healthcare professionals, few studies have specifically focused on workers responsible for SCD, especially in critical settings such as Pediatric Intensive Care Units (PICUs). This gap is significant, as these professionals play an essential role in hospital infection control and patient safety but have historically been overlooked in professional recognition policies and academic research (Deprá et al., 2021; Rigonato et al., 2024).

Given this context, the present study aims to assess motivation, job satisfaction, performance, and organizational commitment among nursing professionals and cleaning staff in a Brazilian PICU.

Materials and methods

Ethical aspects

The study followed all national and international guidelines for research involving human subjects. The research project was approved by the Research Ethics Committee of the Federal University of Mato Grosso do Sul (UFMS), under approval number 6.172.781.

Study design

This is a descriptive, cross-sectional study with a quantitative approach, conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Study setting

The study was conducted in the PICU of a public hospital serving a population of 132,152 inhabitants (IBGE, 2023), located in the eastern region of the state of Mato Grosso do Sul, Brazil. The PICU has 10 beds affiliated with the Unified Health System (SUS in Portuguese).

Data source

The PICU had a total of 35 workers directly involved in the SCD process. These professionals were classified into two groups according to their role and institutional bond: (1) Nursing Professionals, including 17 nursing technicians and 6 nurses, all directly employed by the hospital; and (2) Cleaning and Hygiene Professionals, totaling 12 workers, all employed by an outsourced company. This classification allowed us to compare differences related to both professional position and employment relationship (direct vs. outsourced). The inclusion of both NPs and CHPs in the sample is justified by the Brazilian context, where surface cleaning and disinfection in critical care environments are shared responsibilities between these groups.

The CHPs worked on a rotating shift schedule and were employed by an outsourced company. The NPs also worked in rotating shifts but were directly employed by the hospital.

Inclusion criteria were being an NP or CHP assigned to the PICU. Professionals who were not directly involved in SCD activities during the study period were excluded.

The sample was census-type, encompassing all eligible workers ($n = 35$). Although this was a non-probabilistic sample, a *post hoc* statistical power analysis was performed, considering a significance level of 5% ($\alpha = 0.05$), an expected moderate effect size ($d = 0.5$) for comparison between two independent groups (nursing vs. cleaning), and a sample size of 35 participants. The estimated power was 0.83 (83%), indicating acceptable statistical power to detect moderate differences between the groups.

Data were collected individually and in person between November 2023 and April 2024 by a nurse-researcher with no prior contact with participants. A self-administered instrument comprised (i) a sociodemographic/professional questionnaire and (ii) four validated scales (Cunha, 2013). Work motivation was assessed with the 12-item Motivation at Work Scale (MAWS; Gagné et al., 2010), organized into intrinsic (items 1–3), identified (4–6), introjected (7–9), and extrinsic (10–12) regulations. Extrinsic refers to externally driven/utilitarian reasons; introjected to self-esteem-related drivers; identified to perceived importance/purpose; intrinsic to enjoyment/

interest. Items were rated on a 7-point Likert scale (1 = not at all; 7 = exactly); higher values indicate greater endorsement.

Organizational commitment was measured with Meyer et al.'s (1993) 18-item scale (affective, normative, instrumental subscales; 6 items each), using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) with reverse scoring for items 3, 4, 5, 11, 13, and 15. Higher scores denote stronger commitment (total 18–90; subscales 6–30). Job satisfaction was evaluated by the unifactorial 6-item scale of Depré and Hondeghem (1995) on a 5-point Likert scale (reverse items 2 and 4; total 6–30), where higher scores reflect greater satisfaction. Job performance was captured by Vandenberg's (2009) 4-item scale (5-point Likert; total 4–20), with higher scores indicating better performance.

Statistical analysis

For the analysis of mean work motivation scores, classification was as follows: motivated (mean ≥ 5.0), moderately motivated (mean ≥ 4.0 and < 5.0), and minimally motivated or unmotivated (mean < 4.0). For the analysis of mean satisfaction, performance, and organizational commitment scores, classification was as follows: agreement (mean ≥ 4.0), indifference (mean ≥ 3.0 and < 4.0), and disagreement (mean < 3.0).

The information collected was organized in an Excel database and subjected to descriptive and inferential analysis using Epi-info™ 7.2.4 (Centers for Disease Control and Prevention, Atlanta, Georgia, United States) and BioEstat 5.3 (Mamirua Society, Belém, Pará, Brazil). The significance level adopted was 5%.

The collected data were presented in tabular form, including one or more of the following measures: absolute frequency, relative frequency (%), minimum value, maximum value,

median (Me), mean (Md), standard deviation (SD), and interquartile range (IQR). For variables related to scores (scales and subscales), the following nonparametric tests were used: Mann–Whitney test and Kruskal–Wallis test for independent groups. Multiple linear regression was performed to assess the association between a continuous outcome variable and multiple predictor variables (continuous or categorical).

Results

The 35 workers responsible for SCD comprised 23 nursing professionals (NP: 17 technicians, 6 nurses; all directly employed) and 12 cleaning/hygiene professionals (CHP; all outsourced, predominantly with elementary/high-school education). Tenure in the PICU was 0–3 years for both groups. Sex distribution was predominantly female (NP 100%, CHP 83.3%); 4.4% were > 50 years. Among NPs, 47.8% earned $< R\$3,000.00$, 100% had completed high school, and 73.9% were technicians. Among CHPs, 66.7% were 31–45 years, 50% had completed high school, and 58.4% earned $< R\$2,000.00$. Training in SCD was reported by 39.1% of NPs and 58.3% of CHPs.

Work motivation (MAWS) means ranged between 3.3–5.4 (SD 1.4–2.3). Higher scores concentrated in intrinsic (“I really like this job”), identified (“achieve life/professional goals”), introjected (“my job is my life; I do not want to fail”), and an extrinsic item (“provides a certain standard of living”); the lowest values occurred for extrinsic motivation related to remuneration. Job satisfaction means ranged from 3.1–4.0; participants generally agreed that they were satisfied and found the job pleasant, while other items indicated indifference (neither agreement nor disagreement) – Table 1.

Table 1. Levels of work motivation and satisfaction among study participants, Três Lagoas, MS, Brazil – 2024 ($n = 35$)

Levels	Me	SD	Md	IQR	Classification
<i>Work motivation</i>					
<i>Intrinsic motivation dimension</i>					
1. Because I really like this job.	5.4	1.4	6.0	1.0	Motivated
2. Because I have fun doing my job.	4.4	2.0	5.0	2.5	Moderately motivated
3. For the moments of pleasure my job provides me.	4.7	1.7	5.0	3.0	Moderately motivated
<i>Identified motivation dimension</i>					
4. I chose this job because it allows me to achieve my life goals.	5.3	1.6	6.0	2.0	Motivated
5. Because this job fulfills my professional goals.	5.2	1.7	6.0	2.5	Motivated
6. Because this job fits my personal values.	4.9	1.6	6.0	2.5	Moderately motivated
<i>Introjected motivation dimension</i>					
7. Because I have to be the best at my job, the winner.	4.6	1.9	5.0	3.0	Moderately motivated
8. Because my job is my life and I do not want to fail.	5.0	1.5	5.0	2.0	Motivated
9. Because my reputation depends on it.	4.3	2.3	5.0	3.5	Moderately motivated
<i>Extrinsic motivation dimension</i>					
10. Because this job provides me with a certain standard of living.	5.0	1.6	5.0	2.0	Motivated
11. Because it allows me to earn a lot of money.	3.6	1.6	4.0	1.0	Minimally motivated or unmotivated
12. I do this job for the pay.	3.3	1.7	3.0	2.0	Minimally motivated or unmotivated

Table 1. (continued)

Levels	Me	SD	Md	IQR	Classification
<i>Job satisfaction</i>					
1. In general, I am satisfied with my job.	4.0	0.7	4.0	0.0	Agreement
2. I think there are many other jobs that are more interesting than mine.	3.1	1.2	3.0	1.5	Indifference
3. My current job meets the expectations I had before I started.	3.8	0.9	4.0	0.0	Indifference
4. I would like to have another job because I am not satisfied.	3.9	1.0	4.0	2.0	Indifference
5. My current job is pleasant.	4.1	0.9	4.0	1.0	Agreement
6. I think my current job is interesting and fascinating.	3.9	1.0	4.0	2.0	Indifference
<i>Note: Me – Mean; Md – Median; SD – Standard deviation; IQR – Interquartile range</i>					

In Table 2, the variables that showed a statistically significant association with items related to work motivation and satisfaction can be observed. There was an association between motivation levels and sociodemographic variables in the following dimensions: (a) identified motivation and professional category (all items related to life and professional goals, and

personal values), with $p = 0.002$ and $p = 0.012$; (b) introjected motivation (my reputation depends on it) and age group, with $p = 0.040$; and (c) extrinsic motivation (working for remuneration) and professional category, with $p = 0.012$. No association was found between satisfaction levels and any of the variables evaluated.

Table 2. Association between motivation and satisfaction of study participants and sociodemographic variables, Três Lagoas, MS, Brazil – 2024 (n = 35)

Variables	Professional category	Age group	Education	Income
p-value				
Work motivation				
Intrinsic motivation dimension				
1. Because I really like this job.	0.182	0.052	0.902	0.878
2. Because I have fun doing my job.	0.930	0.848	0.972	0.918
3. For the moments of pleasure my job provides me.	0.092	0.848	0.312	0.348
Identified motivation dimension				
4. I chose this job because it allows me to achieve my life goals.	0.002	0.690	0.092	0.054
5. Because this job fulfills my professional goals.	0.002	0.366	0.710	0.172
6. Because this job fits my personal values.	0.020	0.664	0.102	0.528
Introjected motivation dimension				
7. Because I have to be the best at my job, the winner.	0.626	0.144	0.722	0.772
8. Because my job is my life and I do not want to fail.	0.266	0.944	0.656	0.960
9. Because my reputation depends on it.	0.122	0.040	0.414	0.252
Extrinsic motivation dimension				
10. Because this job provides me with a certain standard of living.	0.118	0.890	0.972	0.596
11. Because it allows me to earn a lot of money.	0.424	0.544	0.632	0.494
12. I do this job for the pay.	0.012	0.822	0.958	0.506
Job satisfaction				
1. In general, I am satisfied with my job.	0.782	0.176	0.888	0.878
2. I think there are many other jobs that are more interesting than mine.	0.554	0.244	0.818	0.290
3. My current job meets the expectations I had before I started.	0.306	0.322	0.670	0.632
4. I would like to have another job because I am not satisfied.	0.118	0.230	0.558	0.032
5. My current job is pleasant.	0.298	0.136	0.978	0.356
6. I think my current job is interesting and fascinating.	0.060	0.098	0.606	0.112
Note: Bolded p-values represent a statistically significant difference ($p \leq 0.05$). Mann–Whitney test				

According to Table 3, mean job performance scores ranged from 2.5 to 4.2, and the standard deviation ranged from 0.6 to 1.0. Higher levels of job performance among participants were identified in 3 of the 4 items evaluated on the scale: “In my opinion, I contribute to the success of the organization”; “I think I perform well within this organization”; and “I think I am a good employee”. There was disagreement regarding working more than colleagues.

Mean job commitment scores ranged from 2.7 to 3.9. The mean for the variable “even if I wanted to, it would be very difficult for me to leave my organization now” indicated “disagreement” among participants. The other variables related to job commitment showed mean scores indicative of “indifference” (neither agreement nor disagreement).

Table 3. Levels of job performance and commitment among study participants, Três Lagoas, MS, Brazil – 2024 (n = 35)

Levels	Me	SD	Md	IQR	Classification
<i>Job performance</i>					
1. In my opinion, I contribute to the success of the organization.	4.0	0.6	4.0	0.0	Agreement
2. I think I perform well within this organization.	4.1	0.6	4.0	0.0	Agreement
3. I think I am a good employee.	4.2	0.6	4.0	1.0	Agreement
4. On average, I work more than my colleagues.	2.5	1.0	2.0	1.0	Disagreement
<i>Job commitment</i>					
1. I would be very happy to dedicate the rest of my career to this organization.	3.3	1.0	4.0	1.5	Indifference
2. I really feel the organization's problems as if they were my own.	3.5	1.0	4.0	1.0	Indifference
3. I do not feel a strong sense of belonging to my organization.	3.6	0.9	4.0	1.0	Indifference
4. I do not feel emotionally attached to this organization.	3.8	0.9	4.0	1.0	Indifference
5. I do not feel at home in my organization.	3.9	0.9	4.0	0.5	Indifference
6. This organization has immense personal meaning to me.	3.6	1.0	4.0	1.0	Indifference
7. In the current situation, staying with my organization is really a necessity as much as a desire.	3.7	1.1	4.0	2.0	Indifference
8. Even if I wanted to, it would be very difficult for me to leave my organization now.	2.7	1.2	2.0	2.0	Disagreement
9. If I decided to leave my organization now, my life would become quite unstructured.	3.7	1.1	4.0	1.0	Indifference
10. I think I would have few alternatives if I left this organization.	3.0	1.3	3.0	2.0	Indifference
11. If I had not already given so much of myself to this organization, I might consider working elsewhere.	3.5	1.2	4.0	1.0	Indifference
12. One of the few negative consequences of leaving this organization would be the lack of immediate alternatives.	3.9	1.0	4.0	1.5	Indifference
13. I do not feel any obligation to stay at my company	3.7	1.1	4.0	1.0	Indifference
14. Even if it would be advantageous for me, I feel it would not be right to leave my organization now.	3.0	1.3	3.0	2.0	Indifference
15. I would not feel guilty if I left my organization now.	3.5	1.2	4.0	1.0	Indifference
16. This organization deserves my loyalty.	3.9	1.0	4.0	1.5	Indifference
17. I would not leave my organization now because I have a moral obligation to the people here.	3.5	1.2	4.0	1.5	Indifference
18. I owe a lot to my organization.	3.9	1.0	4.0	2.0	Indifference

Note: Me – Mean; Md – Median; SD – Standard deviation; IQR – Interquartile range

Table 4 shows education positively associated with affective and instrumental commitment ($p = 0.038$; $p = 0.007$). Overall, motivation, satisfaction, performance, and commitment were moderate. Motivation was higher for intrinsic, identified, and introjected dimensions, while extrinsic (pay-related) was lowest. Job satisfaction reflected agreement with positive aspects but indifference on others, indicating ambivalent appreciation.

Most rated their performance as competent and contributive, though they disagreed about working more than peers. Commitment responses were mostly neutral, with limited affective attachment. Significant associations also linked identified motivation to professional category ($p = 0.002/0.012$), introjected motivation to age group ($p = 0.040$), and extrinsic (pay) to professional category ($p = 0.012$).

Table 4. Multiple Linear Regression of the subscale values of the commitment scale in relation to independent variables among the participants. Três Lagoas, MS, Brazil, 2024

Independent variables	Commitment					
	Normative		Affective		Instrumental	
	b	p-value	b	p-value	b	p-value
Professional category	2.48	0.112	1.43	0.306	-0.61	0.562
Age group	-0.01	0.987	0.48	0.170	0.28	0.298
Education	-0.62	0.274	1.09	0.038	1.10	0.007
Income	0.26	0.692	1.05	0.083	0.24	0.600

Note: b – partial regression coefficient. If p-value ≤ 0.05 (bold) – statistically significant association

Discussion

This study analyzed the levels of motivation, satisfaction, performance, and commitment among healthcare workers responsible for SCD in a PICU, highlighting the relevance of these professionals for patient safety and the control of HAIs.

Overall, the levels of motivation, satisfaction, performance, and commitment identified were moderate, suggesting a scenario of relative indifference or neutrality among professionals regarding the evaluated dimensions. Although concerning, this finding is consistent with previous studies indicating that professionals involved in SCD often remain invisible and receive little institutional recognition, especially when working under outsourced arrangements (Brahm and de Medeiros, 2022; Machado et al., 2023). This condition of invisibility can generate feelings of alienation from the institution, partially explaining the moderate levels observed in our study.

One of the main findings concerns extrinsic motivation, especially regarding remuneration, which presented the lowest scores among all evaluated dimensions (mean = 3.3). This result is consistent with the literature, which points to low pay and precarious working conditions as central factors of dissatisfaction for healthcare workers, particularly among those who are outsourced (Brahm and de Medeiros, 2022; Machado et al., 2023). In the present study, both NPs and CHPs reported low levels of extrinsic motivation, which may be related to the fact that, although they perform essential activities for infection control, they perceive little institutional recognition and limited financial benefits. This discrepancy between the importance of the work performed and the recognition received leads to frustration and may contribute to the maintenance of moderate overall motivation levels.

The low score for extrinsic motivation can also be understood in light of the sociodemographic composition of the participants: about half of the CHPs earn less than R\$ 2,000.00, while almost half of the NPs receive less than R\$ 3,000.00. Such incomes, particularly in environments with high emotional and technical demands like the PICU, may be insufficient to ensure sustained work motivation, reinforcing the perception of professional undervaluation (Cunha, 2013).

On the other hand, it was observed that higher educational attainment was associated with higher levels of affective and instrumental commitment. This result highlights a positive aspect and aligns with studies such as those by Arage et al. (2022) and Gonçalves et al. (2021), which point out that professionals with higher education tend to develop a greater sense of purpose at work, feel more a part of the institution, and demonstrate a greater willingness to collaborate with organizational

goals. In the present study, this association was statistically significant, indicating that education may function as a protective factor against feelings of institutional alienation, even in precarious work contexts.

Another relevant finding was the low proportion of workers who received specific training on SCD, both among NPs (39.1%) and CHPs (58.3%). This is concerning, considering that training is a key element for ensuring high standards of quality in cleaning and disinfection, especially in pediatric ICUs, where the risk of HAIs is high (Rigonato et al., 2024). Studies such as Angeloni et al. (2023) emphasize that continuing education programs not only improve technical performance but also increase job satisfaction and strengthen professionals' bonds with the institution. The absence or insufficiency of training may therefore explain part of the moderate levels of performance and commitment identified, as well as compromise patient safety.

Regarding performance, most participants reported perceiving themselves as competent and committed professionals, although they expressed disagreement about putting in more effort than their colleagues. This finding may reflect feelings of distributive injustice or perceptions of workload imbalance, which are well-known factors of dissatisfaction and potential sources of interpersonal conflict (Rigonato et al., 2024). Additionally, this perception may be related to differences in employment arrangements: while NPs have a direct employment relationship with the institution, CHPs are outsourced and may experience different conditions and expectations regarding workload and recognition.

Organizational commitment, on the other hand, predominantly showed mean scores indicative of indifference. This pattern may be related to multiple factors, including turnover, contractual instability, and a lack of professional development opportunities – especially among outsourced workers. Qualitative studies indicate that workers on outsourced contracts often feel less like they belong to the organization, which translates into lower affective and normative commitment (Lara et al., 2020; Meyer et al., 1993). This result is also linked to the absence of effective recognition and appreciation policies (as identified in our study), and to wage limitations that increase the emotional distance between workers and the institution.

It is important to highlight that the pediatric ICU environment imposes high emotional and technical demands, requiring professionals to engage beyond technical care and demanding relational skills, emotional resilience, and close attention to details of environmental care. In this context, the lack of recognition for professionals responsible for SCD undermines the organizational climate and may negatively impact care quality indicators (Pomaranik and Kludacz-Alessandri, 2023;

Samadi et al., 2023). The indifference or neutrality toward motivational and organizational aspects observed in the present study may reflect the tension between the high demands of the work environment and the perception of invisibility or low institutional appreciation.

Contributions of the study to the field of nursing

The findings warrant institutional strategies that valorize, train, and fully integrate professionals responsible for SCD. For the study site, we recommend scheduled, protocol-based training for both nursing and outsourced cleaning teams to ensure standardization, alongside structured recognition and feedback systems (e.g., acknowledgment programs, performance-contingent incentives) to strengthen motivation and commitment.

More broadly, remuneration adjustments, formal recognition policies, continuing education pathways, and enhanced internal communication may be decisive for workforce well-being and care quality. These measures are particularly salient in pediatric intensive care, where environmental hygiene is directly linked to patient safety and recovery. This study contributes evidence on motivation, satisfaction, performance, and organizational commitment among SCD workers and associated factors, offering decision-relevant inputs for managers and policymakers – especially within nursing – to design targeted interventions that elevate professional recognition, foster safer and healthier work environments, and improve patient outcomes.

Study limitations

This study has limitations that inform interpretation. First, it was conducted in a single PICU of a public hospital in Brazil's interior, which constrains external validity — particularly because the division of responsibilities for surface cleaning and disinfection (SCD) varies across health systems. Nonetheless, the choice of a medium-complexity public service operating exclusively within the SUS offers a scenario that is representative of working conditions encountered in many comparable Brazilian settings.

Second, the non-probabilistic, small sample ($n = 35$) may have limited detection of subtle associations or small effect sizes. To address this, we performed a post hoc power analysis indicating moderate power (83%) to detect differences of moderate magnitude between groups, providing some reassurance regarding the stability of the main findings.

Finally, the absence of qualitative inquiry precluded deeper exploration of workers' perceptions and contextual nuances that might explain the psychosocial patterns observed. Even so, the use of validated instruments and the multidimensional assessment (motivation, satisfaction, performance, commitment) strengthen the evidentiary value of the results and support future qualitative and multicenter investigations.

Conclusion

This study uniquely examines, in a single analytic frame, nursing professionals and outsourced cleaning staff responsible for surface cleaning and disinfection in a Brazilian pediatric intensive care unit, documenting moderate levels of motivation, job satisfaction, performance, and organizational commitment, with the lowest scores concentrated in extrinsic motivation – particularly remuneration – and a positive association between higher educational attainment and affective and instrumental commitment.

Beyond characterizing this psychosocial profile, our findings point to specific managerial levers with direct implications for patient safety in critical pediatric settings. Priorities include instituting structured recognition and compensation policies that align responsibilities with remuneration while expanding non-monetary acknowledgment; implementing mandatory onboarding and periodic refresher training on standardized SCD protocols for both professional groups; and embedding process standardization with routine audit–feedback cycles (e.g., ATP or fluorescent-marker audits) that are explicitly linked to quality improvement actions. Strengthening shared governance – by formally including cleaning personnel in infection prevention and control committees, safety huddles, and incident reviews – together with reserving protected time and ensuring adequate staffing for SCD activities within PICU workflows, may reduce invisibility, enhance engagement, and mitigate turnover.

Career development pathways and certification opportunities for cleaning staff, coupled with clear service-level agreements in outsourcing contracts (for example, minimum training coverage and compliance thresholds and regular monitoring of motivation, satisfaction, and commitment indicators), can further consolidate gains. Taken together, these targeted measures operationalize the study's evidence into actionable policies capable of improving worker motivation and organizational attachment, thereby strengthening the reliability of environmental hygiene practices and the safety of pediatric intensive care.

Authors' contributions

All authors contributed significantly to the conception, design, data collection, analysis, and manuscript preparation. All authors have read and approved the final version of the manuscript.

Declaration of originality

This manuscript is original, has not been published, and is not under consideration elsewhere. All authors have approved the final manuscript and agree with its submission.

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Ethical aspects and conflict of interest

The authors have no conflict of interest to declare.

References

1. Adama EA, Adua E, Bayes S, Mörelius E (2022). Support needs of parents in neonatal intensive care unit: An integrative review. *J Clin Nurs* 31(5–6): 532–547. DOI: 10.1111/jocn.15972.
2. Angeloni NLN, Silva MHDN, Valle LAR, Sousa AFL, Valim MD, Andrade D, et al. (2023). Impact of an educational intervention on standard precautions during the COVID-19 pandemic. *Rev Bras Enferm* 76(4): e20220750. DOI: 10.1590/0034-7167-2022-0750.
3. Arage SM, Daba DB, Dessalegn AY (2022). Organizational commitment of health professionals and associated factors in primary healthcare facilities of Addis Ababa, Ethiopia: A multicenter cross-sectional study. *Front Public Health* 10: 981621. DOI: 10.3389/fpubh.2022.981621.

4. Brahm MS, de Medeiros MRA (2022). Mulheres e o trabalho terceirizado de higienização e limpeza na pandemia de Covid-19: entre invisibilidades e sofrimento. *Trab (En)Cena* 27(1): e022023. DOI: 10.20873/2526-1487e022023.
5. Cunha LVA (2013). *Motivação no trabalho como antecedente da satisfação, do comprometimento e do desempenho: um estudo em um hospital público*. Santa Maria: Universidade Federal de Santa Maria, 180 p.
6. Dalal HJA, Ramoo V, Chong MC, Danaee M, Aljeesh YI, Rajeswaran VU (2023). The mediating role of work satisfaction in the relationship between organizational communication satisfaction and organizational commitment of healthcare professionals: A cross-sectional study. *Healthcare (Basel)* 11(6): 806. DOI: 10.3390/healthcare11060806.
7. Deprá G, Santos LA, Marchi J (2021). A influência do suporte organizacional no desempenho profissional dos colaboradores. *Disciplinarum Scientia Sér Sociais Apl* 17(1): 73–86. DOI: 10.37778/dscsa.v17i1.3894.
8. Depré R, Hondelghem A (1995). *Motivatatie van ambtenaren: voorwaarde voor een efficiënte en effectief bestuur*. Brussels/Leuven: Federale diensten voor Wetenschappelijke, Technische en Culturele Aangelegenheden em V.C.O.B., 222 p.
9. Gagné M, Forest J, Gilbert MH, Aubé C, Morin E, Malorni A (2010). The motivation at work scale: validation evidence in two languages. *Educ Psychol Meas* 70(4): 628–646. DOI: 10.1177/0013164409355698.
10. Gonçalves CIM, Correia DMG, Correia TCB, José HMG, Melo MFHP, Gouveia MJB (2021). Estudo de algumas variáveis potenciadoras do comprometimento organizacional dos profissionais nas organizações de saúde: uma revisão integrativa. *Gest Desenv* 29: 439–464. DOI: 10.34632/gestaoedesenvolvimento.2021.10212.
11. IBGE – Brazilian Institute of Geography and Statistics (2023). *Municipal population list for publication to the Federal Court of Accounts (TCU), 2023 – Population Census 2022*. [online] [cit. 2025-10-08]. Available from: <https://www.ibge.gov.br/estatisticas/sociais/populacao/37734-relacao-da-populacao-dos-municipios-para-publicacao-no-tcu.html>
12. Lara SM, Marra AV, Fernandes PCM, Paiva KCM (2020). Building the professional identity in an outsourcing environment. *Gestão & Regionalidade* 36(109): 182–197. DOI: 10.13037/gr.vol36n109.6058.
13. Lorie ES, Willem-jan WW, van Veenendaal NR, van Kempen AA, Labrie NH (2021). Parents' needs and perceived gaps in communication with healthcare professionals in the neonatal (intensive) care unit: A qualitative interview study. *Patient Educ Couns* 104(7): 1518–1525. DOI: 10.1016/j.pec.2020.12.007.
14. Lotta G, Fernandez M, Corrêa M (2021). The vulnerabilities of the Brazilian health workforce during health emergencies: Analysing personal feelings, access to resources and work dynamics during the COVID-19 pandemic. *Int J Health Plann Manage* 36(S1): 42–57. DOI: 10.1002/hpm.3117.
15. Machado MH, de Rezende Coelho MC, Pereira EJ, Telles AO, Soares Neto JJ, Guimarães Ximenes Neto FR, et al. (2023). Condições de trabalho e biossegurança dos profissionais de saúde e trabalhadores invisíveis da saúde no contexto da COVID-19 no Brasil. *Cien Saude Colet* 28(10): 2809–2822. DOI: 10.1590/1413-812320232810.10072023.
16. Meyer JP, Allen NJ, Smith CA (1993). Commitment to organizations and occupations: extension and test of a three-component conceptualization. *J Appl Psychol* 78(4): 538–551. DOI: 10.1037/0021-9010.78.4.538.
17. Pereira A, da Silva L, Durão M (2024). Motivação e satisfação no trabalho: teorias, impactos e implicações para a gestão organizacional. *Recima 21 Rev Cient Multidiscip* 5(1): e5368. DOI: 10.47820/recima21.v5i1.5368.
18. Pomaranik W, Kludacz-Alessandri M (2023). Talent management and job satisfaction of medical personnel in Polish healthcare entities. *Front Psychol* 14: 1146073. DOI: 10.3389/fpsyg.2023.1146073.
19. Rigonato EM, dos Santos Junior AG, de Pádua Lima H, de Oliveira JSB, Angeloni NLN, Gonçalves VP, dos Nascimento Silva MH (2024). Motivation and satisfaction of healthcare workers involved in surface cleaning and disinfection. *Cogitare Enferm* 29: e93786. DOI: 10.1590/ce.v29i0.96401.
20. Samadi SA, Biçak CA, Osman N, Abdalla B, Abdullah A (2023). Job burnout and job satisfaction among healthcare service providers in a daycare center for individuals with autism spectrum disorders in low-resource settings. *Brain Sci* 13(2): 251. DOI: 10.3390/brainsci13020251.
21. Santos LA, Uzeda AL, Garcia LR, Goulart MCL, Góes FGB, Santos JL (2023). Nursing work during the COVID-19 pandemic: (dis)satisfaction and (de)motivation. *Rev Rene* 24: e85209. DOI: 10.15253/2175-6783.20232485209.
22. Silva MHDN, Ciofi-Silva CL, de Souza VS, Rocha DM, de Sousa AFL, Felix AMS, Dos Santos Júnior AG (2025). Comparative effectiveness of a multimodal intervention package on surface cleaning and disinfection in Brazilian neonatal intensive care units. *Front Public Health* 13: 1557538. DOI: 10.3389/fpubh.2023.1557538.
23. Trindade AA, Montanha D (2023). Os efeitos da sobrecarga de trabalho na equipe de enfermagem. *Repositório Institucional da Unilus*. [online] [cit. 2025-02-06]. Available from: <http://revista.unilus.edu.br/index.php/rtcc/article/view/1899>
24. Vandenberg W (2009). The mediating effect of job satisfaction and organizational commitment on self-reported performance: More robust evidence of the PSM-performance relationship. *Int Rev Adm Sci* 75(1): 11–34. DOI: 10.1177/0020852308099504.