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Anticipatory Attitudes and Emotional Responses of Nurses in the Central Sterile Supply Department towards Prospective Service Outsourcing: A Qualitative Descriptive Study

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Abstract

Background The outsourcing of Central Sterile Supply Department (CSSD) services has been increasingly adopted in public hospitals worldwide, yet little is known about how frontline nurses psychologically anticipate this organizational transformation when no outsourcing decision has been announced in their own hospital, even though outsourcing is already in place elsewhere. Understanding nurses' anticipatory attitudes and emotional responses is critical for designing supportive transition strategies and maintaining workforce stability. This study aimed to explore CSSD nurses' anticipatory attitudes and emotional experiences towards the prospect of outsourcing reform in Chinese public hospitals where no outsourcing plan had been announced.

Methods This study adopted a qualitative descriptive research design. From June to July 2026, 17 CSSD nurses were recruited from seven tertiary hospitals in Anhui Province where no outsourcing plan had been announced or implemented, although outsourcing had already been adopted in comparable local hospitals and was known to participants through professional networks and peer hospitals. Data were collected through individual semi-structured interviews conducted online via Tencent Meeting, using a study information sheet and a semi-structured interview guide. Data were analysed using reflexive thematic analysis. Reporting followed the COREQ guidelines.

Results Four main themes were identified: (1) perceived uncertainty risks of outsourcing; (2) identity threat and emotional experiences; (3) coping strategies and emotional expression; (4) making sense of the prospect of outsourcing: information gaps, institutional contradictions, and a contested professional niche. Twelve subthemes further elaborated on these dynamics.

Conclusions CSSD nurses hold no monolithic stance towards outsourcing. Multiple risk perceptions trigger negative emotions and differentiated coping behaviours. Even before any outsourcing decision is announced, nurses already perceive structural contradictions between the public-hospital system and market-driven outsourcing, aggravated by information deficiency. Administrators should establish an outsourcing management framework integrating rights protection and humanistic care. Measures including information transparency, participatory decision-making and phased transition are required to stabilize the nursing workforce and facilitate sustainable development of speciality nursing.

Trial registration Not applicable. This study is not a clinical trial.

Background

In China, the Central Sterile Supply Department (CSSD) is the core unit of hospital infection control, and its standardised provision of sterile medical devices underpins patient safety [1, 2]. CSSD nurses perform the complete reprocessing cycle for surgical instruments—cleaning, disinfection, sterilisation, storage and distribution—and constitute a specialised workforce on which the reliability of clinical diagnosis and treatment directly depends.

Internationally, contracting out non-clinical support services has become an established instrument of public hospital reform, allowing institutions to concentrate resources on clinical care [3]. For sterile processing specifically, the choice between in-house and outsourced provision is increasingly framed as a multi-criteria decision balancing cost, quality and risk [4, 5], and health technology assessments of off-site sterilisation have reached similarly conditional conclusions [6]. A growing number of hospitals have therefore transferred CSSD operations to third-party providers, and socialised service models have been piloted and evaluated in several settings [7, 8].

In Chinese public hospitals this trend unfolds within a distinctive policy context. Since the first national CSSD standards were issued in 2009 and subsequently revised as WS 310.1—2016 [1], sterile processing has developed into an independent nursing speciality with defined competency requirements and training pathways. Cost pressure has intensified with the introduction of diagnosis-related group (DRG) payment reform [9]. In 2018, the National Health Commission further authorised two socialised operating models—on-site third-party management and independent regional CSSD centres [10]—giving market-oriented reform explicit institutional sanction.

Outsourcing reorganises not only service delivery but also the employment relationship. Where it has been implemented, the unified hospital nursing management system is split into establishment-holding and third-party dispatched personnel who differ in salary structure, performance appraisal, promotion routes and management authority [11], and job embeddedness among service personnel varies systematically with the outsourcing model adopted [12]. A two-tier workforce also affects those who remain: the coexistence

of temporarily and permanently employed staff has been shown to erode permanent nurses' organisational commitment through perceptions of illegitimate tasks [13]. Enterprise-oriented operation further alters quality control mechanisms and the resources available for teaching, research and professional development, and quality management in socialised CSSD services has been reported as an area of continuing difficulty [14]. For frontline nurses, such reorganisation therefore opens pronounced gaps between expected and actual conditions in pay, career development and professional status. These pressures fall on a workforce that is already psychologically vulnerable: elevated psychological distress [15, 16], occupational stress [17] and change fatigue [18] have been reported among nurses independently of outsourcing, as has job insecurity among CSSD nurses specifically [19]. A transfer of services would therefore be layered onto an existing sense of precariousness rather than creating one.

Nevertheless, the evidence base is poorly matched to the decisions that managers must take. Existing studies have concentrated on quantifiable service outcomes under different operating models—cost-effectiveness, sterilisation quality control and process optimisation [4, 6] —whereas research on CSSD nurses has largely described the prevalence of professional identity, occupational values, stress and burnout [15, 20–22]. Two features limit the usefulness of this literature for managing reform. It is predominantly cross-sectional and retrospective: psychological contract breach is assessed only once it has already been experienced [23, 24]. And it records consequences rather than the period in which they might still be prevented. Qualitative inquiry has begun to document how nursing staff experience and cope with demanding working conditions in other settings [25], but no study has examined how frontline CSSD nurses anticipate and emotionally respond to outsourcing in hospitals where no plan has been announced, even though outsourcing is already in place in comparable institutions.

This is the gap the present study addresses. Because reprocessing quality depends on sustained adherence to standardised procedures by trained personnel (1), workforce stability during reform is itself a patient-safety concern. The present study therefore explored how CSSD nurses in seven tertiary public hospitals in Anhui Province, China, where no outsourcing plan had been announced, anticipated and emotionally responded to the prospect of outsourcing.

Methods

Aim

This study aims to explore CSSD nurses’ anticipatory attitudes and emotional responses towards the prospect of socialised outsourcing services through in-depth interviews with nurses working in Chinese hospital Central Sterile Supply Departments where no outsourcing plan had been announced.

Research Question

What are the anticipatory attitudes and emotional responses of nurses working in central sterile supply departments that have neither implemented nor formally announced outsourcing towards the prospect of outsourcing services, as they imagine it on the basis of outsourcing already adopted in comparable hospitals?

Design

This study employed a qualitative descriptive design, as articulated by Sandelowski [26, 27]. Qualitative description is characterised by a low-inference orientation: it seeks to produce a comprehensive and straightforward summary of the informational content of the data, organised in a way that best fits the data and expressed as far as possible in participants' own terms. This design was considered appropriate because little is known about how CSSD nurses interpret the possibility of outsourcing in advance of any formal decision, and because qualitative inquiry is well suited to elucidating complex, context-bound experiential phenomena that cannot be adequately captured by quantitative methods.

The phenomenon of interest was specified as follows. Participants worked in CSSDs where their own hospitals had neither implemented nor formally announced an outsourcing plan, but where outsourcing had already been adopted in comparable hospitals and was known to them through peer hospitals, the provincial CSSD professional committee, professional meetings and social media. Participants were therefore responding to a prospective, imagined change rather than to an announced organisational change.Consistent with this design, data were analysed using reflexive thematic analysis [28], an approach not bound to any single

methodology and therefore compatible with the data-near stance of qualitative description. The conduct of the analysis is described under Data Analysis.

Study Setting and Recruitment

This study was conducted in the CSSDs of seven tertiary public hospitals in Anhui Province, China. At the time of data collection (June–July 2026), none of these departments had implemented or formally announced the socialised outsourcing of instrument cleaning, disinfection or sterilisation. Outsourcing had, however, already been adopted in several comparable hospitals in the province, and participants had learned of it through colleagues in those hospitals, the Anhui Provincial CSSD Professional Committee, professional meetings and social media. Participants were therefore invited to reflect on a prospective rather than an announced change.

Purposive sampling was used to identify information-rich participants capable of addressing the study aim [29]. Eligible participants were CSSD nurses holding either front-line clinical or nursing management positions. The inclusion criteria were: (1) working in a hospital CSSD that had not implemented any outsourcing services for instrument cleaning, disinfection or sterilisation, and where no outsourcing plan had been formally announced or communicated by hospital management—informal rumours did not constitute grounds for exclusion; (2) holding a valid nursing licence and being willing to participate; (3) having worked in the CSSD for at least two years and being familiar with the entire reprocessing workflow; and (4) being aware of socialised CSSD outsourcing, whether through peer hospitals, professional networks or social media, and able to reflect on how they would respond if outsourcing were introduced in their own hospital. The exclusion criteria were: (1) having experienced a major stressful event within the past three months; and (2) having been absent from work for three months or more.

Recruitment was facilitated by the Anhui Provincial CSSD Professional Committee, which distributed a study information pack—a Microsoft Word document containing a brief overview of the study and a short survey of willingness to be interviewed—to CSSD nurses in the participating hospitals. Nurses who indicated willingness were contacted by telephone or via WeChat, and individual interviews were scheduled through Tencent Meeting at times convenient to each participant. In total, 17 nurses were invited to participate; none declined, and all 17 completed individual in-depth interviews. Recruitment continued until no new information relevant to the research question emerged from successive interviews, at which point the research team judged that sufficient information power had been achieved to address the study aim [30].

Data Collection

Data were collected through semi-structured, audio-recorded individual interviews conducted via Tencent Meeting, each lasting approximately 45 minutes. A preliminary interview guide was developed on the basis of a literature review and research-team discussions. Because no outsourcing plan had been announced in the participating hospitals, the guide was deliberately worded in prospective terms: nurses were invited to imagine how they would react if their own hospital were to outsource the CSSD, and were asked how they had come to know about outsourcing and what they had heard or observed in hospitals that had already outsourced. Prior to formal data collection, pilot interviews were conducted with two CSSD nurses who were not included in the present study; both were recorded and reviewed to assess the clarity and appropriateness of the interview procedure. On this basis, two questions were removed, one was added, and several items were reworded and reordered, yielding the final version of the interview guide (Table 1).The interview guide was developed specifically for this study and has not been published elsewhere; the complete English version is provided as Additional file 3. Throughout the interviews, additional probing questions were posed flexibly in response to participants' answers, consistent with common practice in qualitative research.

All interviews were conducted by the first author (S.L.), a postgraduate nursing student with a background in clinical nursing research. No prior supervisory or hierarchical relationship existed between the interviewer and any participant, although both shared a professional background in CSSD nursing; this was addressed through regular reflexive discussion within the research team. Interviews proceeded following the interview guide. The interviewer maintained a neutral and attentive listening stance, avoided closed-ended and leading questions, and used iterative probing to create an open, non-leading environment in which participants could freely express their genuine viewpoints and feelings. Each interview was audio-recorded with the participant's prior consent and transcribed verbatim in Chinese within 24 hours; transcripts were checked against the recordings for accuracy, and all identifying information was removed and replaced by participant codes (P1–P17). Quotations selected for publication were translated from

Chinese into English by the first author S.L) and independently verified by a second bilingual nursing researcher H.C.; discrepancies were resolved through discussion, and the original Chinese quotations were retained to permit verification.

Table 1
Semi-structured interview guide

Outline	Core Questions	Probing Questions
Individual level	1.If your hospital decides to entrust CSSD operations to a third-party vendor someday, what would be your first reaction? What worries you most, and what would you find hardest to let go of?	1.Do you think the skills you currently master, such as cleaning, disinfection, packaging, and sterilization of instruments, will still be valuable if the CSSD is taken over by a third-party company? Do you feel that you are getting older or that your skills are insufficient to meet future requirements? 2.If you leave your current position, what alternative jobs do you think you can find? To what extent can your family's financial situation withstand career changes?
Organizational level	2.What is the hospital's existing development plan for the CSSD? Have hospital leaders communicated with you regarding the prospect of outsourcing and relevant staff resettlement arrangements? Are you confident in the hospital's approach to this reform?	1. Inside the department, are opinions on outsourcing consistent, or are there significant divisions? Do younger nurses and senior nurses hold different attitudes towards this reform? 2. How satisfied are you with the existing career development avenues in the department, including title promotion and specialist nurse training? Would these development opportunities continue to exist after outsourcing is carried out?
Industry and policy level	3.Do you know about the development of third-party CSSD services locally in Anhui? How do you view this trend?	1. Do you think third-party companies can perform better than hospitals? Might they bring risks to infection control? How much trust do you have in relevant industry standards? 2. Do you believe nurses in the CSSD field could be replaced by machines or outsourced enterprises? How do you perceive the irreplaceable value of your profession in society?
Temporal level	4.If the outsourcing transition occurs in the short term, what plans will you make? How would you respond if the outsourcing reform takes place far in the future?	1.In your past work experience, have you encountered situations like department closure or post adjustment? How did you get through it back then?
Vicarious experience and information sources	5. How did you first come to know about the socialised outsourcing of CSSD services, and what have you heard or observed from other hospitals that have already outsourced?	1. Has your own hospital ever formally mentioned or announced an outsourcing plan? | 2. Through which channels do you obtain information about outsourcing—colleagues in other hospitals, the provincial CSSD professional committee, professional meetings or social media? | 3. When you imagine your own department being outsourced, whose experience do you draw on?

Data Analysis

Data were analysed using reflexive thematic analysis, situated within a qualitative descriptive design. Consistent with the low-inference orientation of qualitative description, coding was inductive and predominantly semantic, staying close to participants' own terms; in-vivo codes were retained in the source language and presented together with their English translations. Interpretation beyond the surface of the data was reserved for theme development, where codes were organised around a central organising concept in relation to the research question rather than summarised as topic domains.S.L. (Master's candidate, conducted all interviews) familiarised herself with the data by listening to the recordings and repeatedly reading the transcripts, recording initial impressions in analytic memos. S.L. coded all 17 transcripts and L.G. and K.Z. independently coded 17 transcripts, offering alternative readings of the data. Divergent interpretations were treated as analytic resources rather than coding errors: where readings differed, the transcripts were revisited and candidate themes were refined or split to accommodate the tension, and the reasoning was documented in the audit trail. In keeping with reflexive TA, inter-coder reliability statistics were not calculated, as coding is understood as a situated, interpretative practice rather than a procedure requiring agreement.

Trustworthiness was supported by sustained engagement with the data, critical dialogue among three researchers, an audit trail (analytic memos, successive coding versions, theme revision records), and member checking. Preliminary themes were returned to all 17 participants via WeChat for comment; all indicated that the themes reflected their experiences, and no substantive revisions. Quotations were translated by S.L. and independently verified by H.C.; discrepancies were resolved through discussion, and semantic equivalence was maximised by back-translating a subsample.

TABLE 2 Themes and Subthemes

Themes	Subthemes
Theme 1: perceived uncertainty risks of outsourcing	1.Anticipatory anxiety over occupational security 2.Expectation of compromised economic interests 3.Anticipated devaluation of CSSD professional value and identity degradation
Theme 2:identity threat and emotional experiences	4. Perceptions of being "abandoned" and organizational betrayal 5. Loss and sorrow caused by ruptured occupational attachment 6.Anxiety and helplessness amid a suspended professional identity
Theme 3:Coping strategies and emotional expression	7.Passive avoidance and passive adaptation strategies 8.Pursuit of active negotiation and safeguarding of rights and interests 9.Calls for procedural participation and phased transition
Theme 4: Making sense of the prospect of outsourcing: information gaps, institutional contradictions, and a contested professional niche	10.Inadequate information communication and divergent perceptions of policy 11.Tension between public-institution employment and market-oriented outsourcing 12.Questioning of departmental positioning and the necessity of outsourcing

Ethical Considerations

This study was approved by the Ethics Committee of the Affiliated Fuyang Hospital of Anhui Medical University (Approval No. KYPJ-2026-056) and conducted in accordance with the Declaration of Helsinki. Electronic informed consent, covering audio recording, verbatim transcription, secure data storage and publication of anonymised quotations, was obtained from all participants; signed forms were returned electronically as scanned copies or photographs. Participation was voluntary, and participants could skip questions or withdraw at any time without affecting their employment or professional standing; the interviewer had no supervisory or appraisal relationship with any participant. Confidentiality was protected by replacing identifying information with participant codes (P1–P17) and storing recordings, transcripts and consent forms on password-protected devices accessible only to the research team. No financial or material compensation was provided.

Rigour and Reflexivity

This study is reported in accordance with the COREQ checklist[31]. Trustworthiness was supported across four dimensions, together with reflexive practice. Credibility. Pre-existing assumptions about CSSD outsourcing and nurses' likely responses were documented before data collection and revisited throughout, so that their influence on interpretation could be examined rather than bracketed. The interview guide was refined through two pilot interviews. S.L. coded all 17 transcripts and L.G. and K.Z. independently coded 17 transcripts; divergent readings were treated as analytic resources and examined through critical dialogue, with decisions recorded in the audit trail. Preliminary themes were returned to all 17 participants via WeChat; all confirmed that the themes reflected their experiences, and no substantive revisions. Quotations were translated by S.L. and independently verified against the original Chinese by H.C., a second bilingual nursing researcher. Dependability. All interviews were conducted by S.L., who had received formal

qualitative research training. An audit trail comprising interview guides, verbatim transcripts, analytic memos, coding versions and thematic outputs was retained. Confirmability. Three researchers contributed to analysis, cross-examining interpretations against the original quotations. Transferability. Setting, participant characteristics (Table 3) and findings are described in detail to enable readers to judge applicability to comparable settings. Reflexivity. Regular reflexive meetings addressed how S.L.'s postgraduate clinical-nursing background and her shared CSSD professional background with participants might shape interviewing and interpretation, keeping themes grounded in participants' narratives.

Results

Characteristics of Participants

A total of 17 CSSD nurses from seven tertiary hospitals in Anhui Province, China, were interviewed. None of the seven hospitals had implemented or formally announced CSSD outsourcing; all participants had nevertheless heard about outsourcing, and most knew of comparable hospitals in the province that had already outsourced their CSSD. Participants' ages ranged from 29 to 51 years. Sixteen participants were female and one was male, a distribution consistent with the predominantly female composition of the CSSD nursing workforce in Chinese public hospitals. All participants were engaged in clinical or managerial work in the CSSD of their respective hospitals. Detailed demographic and professional characteristics of the participants are shown in Table 3.

Table 3
Participant characteristics

Participant ID	Gender	Age	Professional Title	Educational Background	Years of Experience in CSSD	Specialist Nurse (Yes/No)	Position	Employment type	marital status
P1	Female	33	Senior Nurse	Bachelor	12	Yes	Head Nurse	Personnel agency appointment	Married
P2	Female	36	Senior Nurse	Bachelor	7	No	Nurse	Contract-based employment	Married
P3	Female	40	Senior Nurse	Bachelor	3	No	Nurse	Personnel agency appointment	Married
P4	Female	45	Senior Nurse	Bachelor	8	No	Nurse	Contract-based employment	Married
P5	Female	48	Senior Nurse	Bachelor	10	No	Nurse	Establishment	Married
P6	Female	37	Senior Nurse	Bachelor	13	No	Nurse	Contract-based employment	Married
P7	Female	44	Senior Nurse	Bachelor	5	Yes	Head Nurse	Establishment	Married
P8	Female	34	Junior Nurse	Bachelor	10	No	Nurse	Contract-based employment	Married
P9	Female	39	Senior Nurse	Bachelor	15	Yes	Nurse	Personnel agency appointment	Married
P10	Male	36	Junior Nurse	Bachelor	4	No	Nurse	Contract-based employment	Married
P11	Female	29	Junior Nurse	Bachelor	3	No	Nurse	Contract-based employment	Married
P12	Female	39	Senior Nurse	Bachelor	4	Yes	Nurse	Personnel agency appointment	Married
P13	Female	36	Senior Nurse	Bachelor	12	No	Nurse	Contract-based employment	Married
P14	Female	51	Senior Nurse	Bachelor	4	No	Head Nurse	Establishment	Married
P15	Female	30	Junior Nurse	Bachelor	5	No	Nurse	Contract-based employment	Married
P16	Female	32	Junior Nurse	Bachelor	9	No	Nurse	Contract-based employment	Married
P17	Female	32	Senior Nurse	Bachelor	11	No	Nurse	Contract-based employment	Married

Findings

Four main themes and 12 subthemes emerged from the analysis. The first theme was‘perceived uncertainty risks of outsourcing’, with the subthemes : (a) ‘Anticipatory anxiety over occupational security’, (b) ‘Expectation of compromised economic interests’ and (c) ‘Anticipated devaluation of CSSD professional value and identity degradation’. The second theme, ‘identity threat and emotional experiences’, encompassed the subthemes: (a) ‘Perceptions of being "abandoned" and organizational betrayal ’, (b) ‘Loss and sorrow caused by ruptured occupational attachment’ and (c) ‘Anxiety and helplessness amid a suspended professional identity’. The third theme, ‘coping strategies and emotional expression ’, included the subthemes: (a) ‘Passive avoidance and passive adaptation strategies’, (b) ‘Pursuit of active negotiation and safeguarding of rights and interests ’ and (c) ‘Calls for procedural participation and phased transition’. The final theme, ‘making sense of the prospect of outsourcing: information gaps, institutional contradictions, and a contested professional niche’, comprised the subthemes: (a) ‘Inadequate information communication and divergent perceptions of policy’, (b) ‘Tension between public-institution employment and market-oriented outsourcing’ and (c) ‘Questioning of departmental positioning and the necessity of outsourcing’ (Table 2).

Theme 1: perceived uncertainty risks of outsourcing

Participants held systematic, multi-dimensional risk perceptions regarding outsourcing services. Throughout their narratives, the participants articulated deep-seated concerns spanning three levels: occupational security, economic interests, and professional value. The analysis identified one core theme: “perceived uncertainty risks of outsourcing,” which comprises three distinct sub-themes.

Anticipatory anxiety over occupational security

The forward-looking pursuit of occupational security and job stability emerged as the core cognitive root of the anxiety experienced by CSSD nurses in anticipation of outsourcing. Participants consistently expressed concerns that the highly standardised and process-driven nature of CSSD work rendered their skills readily replaceable by "low-cost labour," thereby exposing them to the dual risks of job loss and interruption of occupational continuity.

Participants believed that once removed from the shelter of the hospital's established staffing system, their occupational survival would be directly exposed to a corporate logic that prioritizes cost-cutting layoffs—and that such uncertainty was far more likely to provoke sustained anxiety than a clearly negative outcome. As one participant noted:

“I feel like I'm going to be dismissed. If I lose my job, there's no wages, and I still have to face the pressure of mortgage payments and raising children—all of these are things I have to confront.” (P16)

Participants described their post-outsourcing career prospects as an unknown predicament of being "redeployed" and "transferred elsewhere"; the absence of a clear placement plan left them in a prolonged state of suspension. For instance:

“What worries me most is whether we CSSD nurses will be redeployed? And where would we be transferred to?” (P15)

Should outsourcing be implemented, nurses would lose the protection of the state-guaranteed permanent employment system that traditionally covers public-hospital nurses in China. This deep-seated fear of being replaceable was encapsulated in the account of one participant:

“The managers of the outsourcing company are not central sterile supply professionals, after all. Might they think that we have children, are older, learn more slowly, and that our skill sets can no longer keep up—and therefore not want us?”(P1)

Expectation of compromised economic interests

Participants anticipated that outsourcing would lead to an across-the-board decline in economic entitlements, including income, welfare benefits, and social insurance. The prospect of shifting from the public-institution system to a market-oriented model rendered nurses highly sensitive to changes in salary structure, full-attendance income, and the housing provident fund.

Nurses treated basic salary as an untouchable survival bottom line, while bonuses and performance pay were regarded as a negotiable buffer zone. As participant P1 explicitly stated:

“I'm quite satisfied with my current income. If we were outsourced, I feel the salary and various benefits would only get worse, not better.” (P1)

Senior nurses in particular attached greater importance to the contribution bases of the housing provident fund and social insurance rather than to promised bonuses and performance pay, because these were directly tied to long-term retirement security and family stability. The account of P6 clearly reflected this point:

“The salary, social insurance, and housing provident fund must certainly continue to be borne by the hospital and cannot be changed. I can accept a reduction of the bonus to 3,000 yuan per month.” (P6)

Family financial pressure left nurses with extremely limited capacity to bear the economic risks of outsourcing. As P3 stated:

“Well, ideally there should be no reduction. If a pay cut has to happen, then reduce the bonus by 10%. Because my family savings, I feel, could support me for at most half a year without work.” (P3)

Anticipated devaluation of CSSD professional value and identity degradation

Participants generally anticipated that a decision to outsource would signify a fundamental denial by the hospital of the professional nature of CSSD, resulting in a downward shift in their identity from "professional and technical personnel" to "outsourced service personnel." CSSD already occupied the position of an ancillary department within the hospital, and outsourcing further reinforced the label of being "non-core and outsourcable," thereby intensifying the crisis of professional identity.

Nurses were concerned that standardised assembly-line operations would replace professional decision-making grounded in clinical contexts, degrading them from professional collabourators to mechanical operators. As participants explicitly pointed out:

“After outsourcing, the central sterile supply department is likely to become more mechanised and process-driven, forming an assembly-line mode of work. Then there won't be a need for so many nurses—workers could just do the job.” (P5)

“Although we are professionals, the outsourcing company wants to make money. They may hire some temporary, cheap workers.”(P14)

At the level of career development, the pathways for professional title promotion and specialist nurse training would be severed. Participant 2 described this predicament:

“Under an outsourcing company, the prospects for obtaining professional titles or pursuing specialist nurse training would be even more remote. They are a private company whose purpose is to make money; they won't let you apply for professional titles or spend money to send you for specialist nurse training.” (P2)

Theme 2: Identity threat and emotional experience

Perceptions of being "abandoned" and organizational betrayal

Among CSSD nurses, a recurrent emotional theme centred on perceiving a prospective decision to outsource as a betrayal by the hospital of their loyalty and dedication, thereby generating an intense experience of having one's organizational identity stripped away and being "cast out" by the organization. Many participants anticipated these feelings, attributing them to what they regarded as an absence of prior communication and humanistic consideration in the way outsourcing reform is usually advanced, as well as to the fundamental conflict between establishment-holding status and market-oriented employment.

respondents described the process through which trust in organizational care collapsed. One participant stated bluntly:

“I have no confidence in the hospital, because if the hospital truly had its employees' interests at heart, it wouldn't outsource the central sterile supply department. Outsourcing means handing it over to a third-party company—which in effect means we are no longer employees of this hospital. So how could they possibly consider the employees?” (P2)

At the level of feeling abandoned with no one to rely on, emotions of profound helplessness and passive compliance similarly emerged. One participant remarked:

“They might take our interests into account, but they wouldn't lean too far towards us. I feel that from the leadership's standpoint, they would certainly give top priority to maximizing the hospital's interests.” (P15)

Another participant emphasized a resigned acceptance in the face of an overarching trend:

“As for 'having employees' interests at heart'—I don't quite know how to understand that. Because if the socialised outsourcing of the central sterile supply department is the general trend, then we can only comply with whatever arrangements the hospital makes.” (P11)

Loss and sorrow caused by ruptured occupational attachment

Most participants reported that CSSD nurses had formed deep emotional attachments to their work positions, colleague groups, and hospital establishment-holding, and anticipated that outsourcing would lead to the abrupt rupture of these stable bonds, thereby giving rise to intense feelings of loss, reluctance to let go, and grief. For instance:

“I've become very familiar with the environment, colleagues, and work content of the central sterile supply department. If I suddenly stopped working here, I would be reluctant to part with my colleagues here, and also with this relaxed working environment.” (P5)

The intensity of this position attachment was closely related to the department's long-standing low-stress work characteristics, such as being free from clinical night shifts and doctor–patient disputes. Outsourcing reform directly stripped away this advantage, leaving nurses to face a sense of helplessness at the emotional level of being "forced to say farewell." For instance:

“The thing I would miss most about the central sterile supply department is not having to deal with patients.” (P10)

“I can't bear to leave the familiar environment and familiar work content, and in the future, everything will have to start over from scratch.” (P6)

Anxiety and helplessness amid a suspended professional identity

Beyond anticipating specific losses, participants struggled to locate themselves occupationally: because no decision had been announced, they did not know whether they would remain public-hospital nurses or become employees of a third-party company. Their professional identity was therefore held in suspension—change was expected, but the category into which they would fall was not yet knowable. Unlike the risk appraisals in Theme 1, which concern what may be lost, this subtheme concerns who they will be: the inability to re-anchor an occupational identity generated persistent anxiety, passive acceptance and a sense of powerlessness. participants linked this directly to the loss of status:

“If it really is outsourced, I might stay here for the time being. But if a better option comes along, I would switch jobs. After all, if the department is outsourced, we would probably no longer be nurses of a public hospital, and it would no longer be a stable career.” (P1)

At the same time, outsourcing implies the potential loss of their status as public hospital nurses, which further amplified nurses' deep-seated anxiety regarding career stability. For instance:

“The main thing is, right now I don't know whether we'll still be working here after the outsourcing, so I feel quite lost.” (P8)

“I don't know when the outsourcing will arrive. This kind of uncertainty makes me very anxious, but I can only accept it passively.”(P15)

Theme 3:Coping strategies and emotional expression

Nurses adopted cognitive adjustment and behavioural coping strategies in response to outsourcing uncertainties, and demonstrated clear bottom-line thinking and differentiated resilience in emotional expression. This theme comprises three sub-themes.

Passive avoidance and passive adaptation strategies

Most participants reported that, when powerless to change a prospective outsourcing decision, nurses tended to adopt passive coping strategies such as psychological detachment, lowering expectations, and self-persuasion. For instance:

“This question is a hard one—what would I do? There's nothing I can do. It's a case of 'the arm being no match for the thigh'—the weak cannot win against the strong. What else can you do? You can only deal with things as they come, taking one step at a time.”(P12)

“Well, it depends on how things turn out. We can't control any of it. If conditions are good, I'll keep working; if conditions are bad, then I'd certainly have other ideas.” (P13)

At the same time, faced with the uncertainty surrounding a possible outsourcing reform, some nurses alleviated their anxiety through unconditional compliance with organizational deployment, pinning their hopes for job placement on the arrangements made by the hospital's decision-makers. For instance:

“If it's the leadership's decision, we will certainly obey it. The hospital will definitely find positions for us. That is to say, if they really want to contract it out, then so be it—as long as we are given a placement and have work to do, that's enough. After all, this is all the leadership's decision!” (P7)

“Wherever the hospital sends you, that's where you have to go. After all, it's better than being dismissed! As long as they don't fire you, if the hospital tells you to go to another post, can you really refuse? No matter what, you just have to go.” (P9)

Pursuit of active negotiation and safeguarding of rights and interests

Drawing on their own circumstances and adopting a managerial perspective, CSSD nurses proposed idealised reform plans, and as a whole articulated demands for proactive negotiation and comprehensive protection of their rights and interests. For instance:

“If I were a leader, there would definitely be a placement plan. You can't just say that after the department is outsourced, the nurses have nowhere to go—there have to be certain placement measures. As for how these placement measures should be implemented, they could listen to the nurses' opinions.” (P4)

“First of all, we must not be laid off by the hospital; the work content should not change too drastically, and the workload should be acceptable to everyone. In terms of salary, it shouldn't be reduced by too much, and working hours shouldn't be too long. Ideally, we would remain in our original positions in the central sterile supply department, but the hospital needs to negotiate with the third-party company regarding our working hours and welfare benefits.” (P3)

At the same time, nurses also demanded that dismissal rules be regulated and arbitrary layoffs be prohibited, and that welfare benefits such as social insurance and pension provision remain unaffected by outsourcing. For instance:

“If we stay in the central sterile supply department after outsourcing, the hospital needs to negotiate with them to ensure that people cannot be dismissed at will. If dismissals do occur, there must be clear reasons—it shouldn't be that they dismiss us simply because there are enough staff.” (P2)

“Provided that there is no major difference in income, nurses should be allowed to choose for themselves whether to go to the central sterile supply department after outsourcing or to transfer to another department in the hospital. But in either case, the hospital needs to clarify the welfare benefits in advance and also guarantee whether our social insurance and pension provision will be affected.” (P17)

Calls for procedural participation and phased transition

Nurses demand the right to be informed and the right to participate in the decision-making process, and they hope that the reform will proceed at a gradual and adaptable pace.

They appealed for preliminary investigations and policy interpretation to safeguard their right to know, grant them the right of independent job selection, and ensure substantive participation in the placement process, enabling them to comply with the reform rationally. As participants pointed out:

“If outsourcing reform is to be implemented, the competent authority must first conduct research in the department and explain the rationale for the reform. Then, they should clearly inform the nurses how their positions will be arranged after the CSSD is dissolved, providing everyone with a reasonable job placement.” (P7)

Reject a one-size-fits-all outsourcing approach and implement a phased, gradual plan; establish an adaptation transition period and prohibit forced transfers. For example:

“There should be a gradual transition, since currently all hospitals have a CSSD. If it were done as a one-size-fits-all approach, it would feel like a waste of equipment and space, among other things. I think there will be a gradual plan; that is what I expect the leadership would do.” (P15)

“Ideally, the transfer should not be to a clinical department, as clinical work involves night shifts and direct patient contact. If we are truly transferred to a clinical post, we should not be required to work night shifts independently right away; instead, there should be a gradual transition period for learning.” (P16)

Theme 4: Making sense of the prospect of outsourcing: information gaps, institutional contradictions, and a contested professional niche.

Participants showed marked cognitive divergence at the macro level regarding the logic of hospital decision-making, the orientation of national policy, and the fairness of institutional arrangements.This theme comprises three sub-themes.

Inadequate information communication and divergent perceptions of policy

As no outsourcing plan had been announced, participants reported that their hospitals had not conducted any systematic, formal communication about outsourcing with CSSD staff. Information reached them mainly through informal channels, such as colleagues in hospitals that had already outsourced, the provincial CSSD professional committee, professional meetings and social media, resulting in severe divergence in how outsourcing was understood. For instance:

“I heard about the outsourcing of the central sterile supply department when I was away on advanced training, but I don't have a detailed understanding of it yet. Our hospital hasn't mentioned it so far. Sometimes I come across it on WeChat official accounts I follow, or the head nurse mentions a bit about outsourcing reform when she chairs a meeting for us.”(P5)

In addition, even where nurses had heard about outsourcing from peer hospitals or through informal talk, specific information regarding how their own hospital would arrange placements was generally lacking. For instance:

“Our hospital has mentioned outsourcing, and there have been rumors, but no placement measures have been specified. I don't know much about the development trend of socialised outsourcing services.” (P9)

Other participants indicated that, at most, the possibility of outsourcing had been mentioned informally or discussed as a general trend in the field, but no decision had been made in their own hospital, nor had any clear information about placement plans been provided:

“They have hinted at the possibility of outsourcing, but nothing has been decided yet, and there has been no word at all about any placement plan. I'm not very familiar with the development of socialised outsourcing services in Anhui Province—I haven't really been following it.”(P3)

Tension between public-institution employment and market-oriented outsourcing

This tension centres on the conflict between the public-service mission of public hospitals and the market operations of third-party entities, and constitutes the structural root of CSSD nurses' diverse attitudes and complex emotions towards outsourcing. Unlike the occupational-security concerns in Theme 1, which centre on individual job loss, this subtheme reflects nurses' reading of a clash between two institutional logics. The public-institution system prioritises public welfare and quality safety, whereas market-oriented outsourcing treats cost control and corporate profit as its primary goals. Nurses perceived a deep conflict between their status within the public system and market-oriented employment. For example:

“I believe there is a relationship between cost and safety; third-party companies definitely want to save money, which creates a safety hazard. Moreover, regardless of what one does, only state-owned public institutions can offer true stability, whereas third-party entities are private and certainly not as stable.” (P1)

“This is just like shopping: many intermediaries skimming the price difference, adding layers of markup, so that the final value of the item will not be high. Moreover, hospital management is stricter; public hospitals are more lawful and compliant, whereas private ones may be driven by various interests and profits.” (P3)

Questioning of departmental positioning and the necessity of outsourcing

Participants viewed the CSSD as the core defence line for hospital infection control and the "liver" of surgical instrument turnover. They maintained that the CSSD was by no means a mere logistical support department, but rather performed strategic functions of safeguarding patient safety and reducing infection risks. This perception led them to question the rationality of the outsourcing reform, highlighting the inherent contradiction between the CSSD's strategic positioning and the necessity of pursuing outsourcing.

Based on the professional nature of the CSSD, which undertakes the critical responsibility of infection control for the entire hospital, nurses believe that their profession is irreplaceable. However, they feel deeply ambivalent about the department's positioning as a supporting unit within the hospital, while also questioning the rationality and safety of the outsourcing decision. As participants pointed out:

“I believe that professional nurses in the CSSD are irreplaceable, after all, this is not a job that can be done casually. Our profession requires gradual learning and accumulation; it cannot be mastered in just a day or two.” (P1)

“I believe the CSSD is a relatively meaningful job position. Although the department lacks status and visibility within the hospital, it has always been an important unit that quietly contributes and controls infection risks.” (P3)

“Our reverence for the profession is definitely stronger than that of employees from outsourcing companies. Moreover, our work is very tedious; we must be conscientious and meticulous, and possess a spirit of 'shen du' (ethical integrity in solitude). Can outsourcing staff truly possess all these capabilities?” (P4)

Discussion

This analysis of in-depth interviews with 17 CSSD nurses from seven tertiary hospitals in Anhui Province – none of which had implemented or formally announced an outsourcing plan – identified four main themes and 12 subthemes. Rather than polarising into support or opposition, nurses’ accounts revealed a psychosocial meaning-making process organised around four interconnected strands: perceptions of uncertainty, threats to professional identity, coping strategies, and interpretations of institutional meaning. Each strand is discussed below with reference to the extant literature and its practical ramifications.

Perceived uncertainty risks of outsourcing: cognitive roots of nurses' anticipatory anxiety

Nurses' perception of uncertainty risks was essentially a forward-looking anticipation of potential losses—in occupational security, income and professional value—under a market-oriented employment model, set against the guarantees currently provided by the public-institution system. This finding underscores the profound influence of China's institutional context on how frontline nurses make sense of healthcare outsourcing reform.

First, the highly standardised and procedure-driven nature of CSSD work led participants to fear that their positions were replaceable by low-cost labour. This fear of substitutability was most pronounced among older nurses with heavy family financial burdens, and is consistent with a qualitative study of CSSD nurses [32] reporting that professional identity remains unsettled during role transition and that perceived replaceability heightens role-adaptation difficulties.

Second, participants shared highly consistent expectations of income decline and specified acceptable thresholds for salary reduction, demonstrating a distinct bottom-line mentality: basic salary was regarded as an inviolable livelihood baseline, whereas bonuses and performance pay served as negotiable buffers. These thresholds were arrived at by back-calculating from mortgage repayments, child-rearing costs and available savings, highlighting the direct impact of outsourcing-related economic risk on household livelihoods. Economic strain and the need for organisational support have likewise been identified among nursing staff in other Chinese care settings [25],where management strategies combining reasonable workforce planning with material, emotional and informational support have been recommended.

Third, as a support department within Chinese public hospitals, the CSSD has long been labelled non-core and outsourcable; the prospect of outsourcing reinforced this label and exacerbated the crisis of professional identity. Participants worried that outsourcing

signified the hospital's denial of CSSD professionalism, reducing professional practice to a mechanised assembly line and weakening pathways for professional title promotion and specialist nurse training. These concerns point to a structural vulnerability of CSSD professional development: speciality status depends on continuous access to training, title promotion and teaching–research activity, all of which are jeopardised when posts are transferred to a market-oriented provider. Because CSSD nursing is an independent speciality of the Chinese Nursing Association—underpinned by standardised quality control, specialist training and teaching–research integration—any interruption of promotion pathways or loss of training opportunities would directly threaten the institutionalisation of the discipline. This anticipation of professional value depreciation reflects a deep-seated anxiety over blurring professional boundaries. Among CSSD nurses, professional identity is closely associated with self-directed learning competence and self-efficacy [22]; when nurses anticipate being transformed from specialised technical personnel into outsourced service providers, that identity threat is liable to translate into emotional exhaustion and, ultimately, turnover intention. Professional respect must therefore be made explicit and institutionalised.

These three dimensions of risk perception are intertwined and mutually reinforcing, constituting the core cognitive source of nurses' resistance to outsourcing. An irreconcilable contradiction exists between the cost-first principle of market-oriented enterprises and both the personnel security of the public-institution system and the long-term development of the CSSD speciality; enterprise self-regulation alone cannot balance employee rights with disciplinary development. Before any outsourcing plan is announced and throughout the preparation stage, hospitals should therefore introduce three supporting safeguards—job protection, salary guarantees and speciality development—to systematically address nurses'multidimensional risk anticipations.

Identity threat and emotional experiences: psychological responses to prospective outsourcing

Three distinct emotional responses characterised nurses' reactions to prospective outsourcing: a sense of abandonment and organisational betrayal, loss and grief arising from the rupture of occupational attachment, and anxiety and helplessness amid a suspended professional identity. Rather than transient mood fluctuations, these responses constitute a systemic identity crisis triggered when anticipated organisational change disrupts the established psychological contract. Nurses interpreted the prospect of outsourcing as the hospital's repudiation of their loyalty and dedication; this sense of betrayal represents the most intense emotional expression of psychological contract violation. Unlike the risk appraisals in Theme 1, which concern what outsourcing may cost them, these responses concern who nurses will be and where they will belong.

Evidence from psychological contract research supports this interpretation.Pyhäjärvi and Söderberg [23], in a qualitative interview study of nurses who had left or were leaving the profession, showed that psychological contract breach accumulates through sustained unfulfilled expectations and eventually generates turnover intentions directed at the occupation rather than at a single employer. Li et al. [33] further showed that the psychological contract shapes nurses' subjective wellbeing, with unfulfilled commitments to job stability generating an intense sense of abandonment.

In addition, having long worked without clinical night shifts or doctor–patient conflict, CSSD nurses had developed a strong attachment to a low-stress, stable environment and enduring emotional bonds with colleagues. Outsourcing signified the complete rupture of familiar work settings, interpersonal networks and established work patterns, breeding reluctance and grief. Guo et al. [32] noted that CSSD nurses highly value their freedom from doctor–patient disputes and have formed an exclusive psychological comfort zone, the disruption of which generates a pronounced sense of loss.

Finally, because no decision, implementation timeline or resettlement guidelines had been announced, nurses were left in prolonged suspension regarding their future professional status, producing persistent anxiety and a diminished sense of control. Ding et al. [15] reported that anxiety and depression scores among CSSD nurses exceed national norms for Chinese nurses, indicating that this workforce carries a measurable psychological burden even before any restructuring occurs. A qualitative meta-analysis of nursing staff in Chinese care settings [25] similarly reported that reform implemented without adequate support continuously depletes psychological resources and fosters passive compliance. Within this suspension, what appeared to distress nurses most was not merely that outcomes were unknown, but that their occupational identity could not be re-anchored: they could not know whether they would remain public-hospital nurses or become employees of a third-party company.

In essence, these identity threats and emotional experiences result from reform that is anticipated as unilateral and that breaches the psychological contract nurses had established with a public organisation. Advancing outsourcing through administrative directive

alone, while disregarding employees' emotional investment and identity needs, will erode belonging, precipitate emotional exhaustion and drive the invisible attrition of talent. During the transition period, managers must concurrently pursue organisational trust repair, institutionalise humanistic care and provide professional psychological support to buffer the emotional impact of identity threat.

Coping strategies and emotional expression: differentiated adaptation to prospective outsourcing

Nurses' anticipated responses to prospective outsourcing were stratified by age, seniority, family obligations and career aspirations into three patterns: passive avoidance, active negotiation for rights protection, and procedural participation favouring gradual transition. Prospective outsourcing thus mobilised differential coping resources rather than eliciting uniform resistance or compliance. These patterns were also a distinctive mode of emotional expression: rather than voicing anger or open resistance, nurses set explicit bottom lines, voiced conditional acceptance and practised self-persuasion, displaying pragmatic resilience rather than overt confrontation.

Middle-aged nurses with heavy family burdens and weak bargaining power predominantly adopted passive avoidance, believing that individuals cannot contest organisational decisions, and achieved suppressive adaptation through psychological detachment, lowered expectations and unconditional acceptance of internal redeployment. Among CSSD nurses, hindrance stressors erode perceived professional benefit [17]; sustained passive adaptation may therefore produce apparent short-term stability but latent long-term turnover risk. Conversely, head nurses, specialist nurses and young core staff pursued active rights protection, demanding safeguards against unjustified dismissal, reciprocal job selection, and unchanged social insurance and pension benefits. In evaluations of hospital support services, job embeddedness varies systematically across outsourcing models [12], suggesting that how employees' rights and placement are defined matters as much as whether outsourcing occurs. All respondents opposed uniform outsourcing, urging pre-reform staff surveys, comprehensive policy interpretation, a buffer transition period, and guaranteed information and participation rights. Phased, full-process transition pathways have likewise been recommended for the socialisation of hospital support services [34]; the prevailing absence of frontline hearings constitutes procedural injustice that further amplifies dissatisfaction.

Coping strategies thus exhibited age- and seniority-based stratification: passive adaptation portends long-term attrition, whereas active negotiation and procedural demands reflect rational reform expectations. Because these strategies are anticipatory rather than reactive, a window remains for intervention. Advancing reform therefore requires combining institutionalised consultation and phased transition with employees' right to choose and to participate, rather than relying solely on administrative mandate.

Making sense of prospective outsourcing: information gaps, institutional contradictions and a contested professional niche

outsourcing replaces the unit-based protective relationship with a market-oriented contractual one, yet lacks a concomitant social insurance and welfare transition mechanism. Interpreted from a macro-institutional standpoint, this theme exposes the core tension in Chinese public hospital restructuring: a structural friction between the occupational stability, social security continuity and identity dignity sustained by public-institution employment and the cost efficiency pursued by market-oriented outsourcing—a friction epitomising the conflict between public welfare and marketisation in health system reform. Because no plan had been announced, the hospitals conducted no systematic communication with the CSSD; information circulated through informal channels—colleagues in hospitals that had already outsourced, professional meetings and social media—producing sharply differentiated policy cognition. Hai Hehuan et al. [18] identified the absence of communication and feedback mechanisms as a significant trigger of change fatigue.

Nurses thus articulated a penetrating insight into the tension between public-institution employment and market outsourcing. Job insecurity has been shown to undermine work passion among CSSD nurses [19]; when nurses perceive that cost reduction curtails investment in their professional development, professional identity and intention to stay are simultaneously eroded. Their concern that agencies "hire cheap, unskilled workers to save money" is a localised expression of this. Li Huiling et al. [16] showed that social support correlates positively with the sense of professional benefit; removing the public-institution system as a core organisational support rapidly depletes psychological resources. Extending Pan et al. [35], who found that organisational trust mitigates the adverse effects of a differential climate on job satisfaction, attachment to permanent posts represents an institutionalised expression of high organisational trust, whereas resistance to outsourcing firms reflects an absence of foundational trust in market providers.

Confidence in professional value coexisting with organisational-status inferiority constitutes a distinctive identity dilemma. Wei et al. [24] showed that psychological contract functions as a key mechanism linking perceived fairness to organisational trust; when nurses fundamentally question their department's positioning and the necessity of outsourcing, the psychological contract destabilises, impairing engagement and performance and threatening the baseline of medical safety. Outsourcing is therefore defensible only if the CSSD's professional voice and primary quality-control role are explicitly preserved whilst resources are integrated. Since the Chinese Nursing Association launched a specialised CSSD training programme in 2021, the field has been transforming from a logistical auxiliary role to a professional technical post; equating specialised nurses with interchangeable operational workers would waste talent and erode the foundation of hospital-wide infection prevention and control.

Ultimately, nurses' meaning construction reveals a triple structural dilemma: absent information communication, institutional tension and the paradox of professional identity. Nurses do not simply oppose outsourcing; they question a change model with no rules, no consultation and no safeguards. Treating outsourcing merely as an operational transition whilst ignoring nurses' meaning construction of the institutional environment will ultimately compromise medical quality and patient safety.

Strength and Limitations

This study's strengths lie in its qualitative descriptive design combined with reflexive thematic analysis and COREQ-guided reporting, which support methodological transparency and keep the findings close to participants' own terms. Purposive sampling recruited a heterogeneous sample of 17 CSSD nurses from seven tertiary hospitals, spanning different ages, seniority levels and roles; the interview guide was refined through two pilot interviews with nurses not included in the study; and trustworthiness was supported by member checking, in which all 17 participants confirmed that the themes reflected their experiences, and by an audit trail of analytic decisions. The study provides context-specific evidence from a non-Western healthcare system and addresses a gap in knowledge of nurses' pre-reform psychological responses. Several limitations should be noted. Findings were drawn from tertiary public hospitals in a single province and therefore offer transferability rather than generalisability. Because no plan had been announced, the data capture anticipatory responses to a prospective, vicarious scenario rather than reactions to a real decision, and actual post-reform experiences may diverge from these expectations. Self-reported data are subject to social-desirability bias, and recruitment facilitated by the provincial CSSD professional committee—with no invited nurse declining—may have introduced selection bias; all interviews were conducted by one researcher, whose clinical nursing postgraduate background carries a residual risk of interpretive bias despite team-based reflexive dialogue. Longitudinal and multi-site studies would advance understanding of this phenomenon.

Conclusion

In hospitals where no outsourcing plan had been announced, CSSD nurses held no monolithic stance: their responses centred on anticipated losses in occupational security, income and professional value, on threats to occupational identity, and on tension between public-institution employment and market-oriented outsourcing, all intensified by information scarcity. Because these responses are anticipatory, they remain open to influence. Managers should disclose whether and when outsourcing is under consideration—with staffing and rights-protection plans—from the outset, and sustain two-way communication while the matter remains undecided; preserve salary structures, promotion routes and speciality training access for transferred nurses; and phase in any transfer with frontline involvement and embedded psychological support. Converting an administratively imposed change into a negotiated one protects both workforce stability and hospital infection control.

Abbreviations

CSSD Central Sterile Supply Department

DRG Diagnosis-related group

Declarations

Ethics approval and consent to participate

This study was approved by the Ethics Committee of the Affiliated Fuyang Hospital of Anhui Medical University (Approval No.: KYPJ-2026-056). All procedures were conducted in accordance with the Declaration of Helsinki. Electronic informed consent was obtained

from each participant prior to the interview; because the interviews were conducted online, the signed consent form was returned electronically as a scanned copy or photograph.

Consent for publication

All participants provided electronic informed consent for the publication of anonymised quotations and aggregated characteristics; no identifiable individual data are included.

Availability of data and materials

The datasets generated and analysed during the current study are not publicly available due to ethical restrictions protecting participant confidentiality but are available from the corresponding author upon reasonable request.

Competing interests

The authors declare no competing interests.

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Author Contributions

SL, KZ, LG, HC and QY made substantial contributions to the conception and design of the study. SL acquired the data; SL, KZ and LG analysed and interpreted the data, with critical dialogue among the three researchers throughout. SL drafted the manuscript; KZ, HC, QY and LG critically revised it for important intellectual content. All authors read and approved the final version to be published and agree to be accountable for all aspects of the work.

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