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Original article

Pathologist assistants in a Pathology Department: perceptions of their changing role

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Summary

Objective. This study aimed to understand the dynamics of including Pathologists' Assistants in a surgical pathology department.

Methods. A qualitative ethnographic study employed covert participant observation and semi-structured interviews. Field notes and interview transcripts were descriptively analysed to identify categories.

Results. We developed three cross-cutting categories: (i) a testing welcome, (ii) recognising the added value, and (iii) open issues. Initially, disagreements existed regarding the integration of Pathologists' Assistants, but over time, clearer role definitions promoted collaboration. The study revealed the recognised value of Pathologists' Assistants, particularly in time-saving and professional growth opportunities.

Conclusions. Despite initial challenges, recognising the value of Pathologists' Assistants is crucial for effective collaboration and optimal utilisation of their skills. Addressing unresolved issues, such as institutionalising their role and improving academic training, is essential. Creating a community of practice and fostering effective communication and professional development are key to successful integration. Further research and stakeholder collaboration are needed to integrate Pathologists' Assistants into the healthcare system fully.

Key words: attitude of health personnel, qualitative research, workplace, working engagement

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Introduction

A Pathologist's assistant (PA) is a "highly trained, certified allied healthcare professional qualified by academic and practical training to provide various services in anatomic pathology under the direction and supervision of a licensed, Board Certified or Board Eligible Anatomic Pathologist" [1]. In 1965, Dr. Stead Jr. introduced a specialised technician to work alongside pathologists, focusing on grossing procedures within the surgical pathology department at Duke University. Four years later, in 1969, Thomas D. Kinney established the first formal university-based training program for PAs in collaboration with Duke University [2].

The rationale for employing these assistants was to delegate technical duties to highly trained individuals at a relatively low cost, allowing pathologists to allocate more time to other responsibilities, such as histopathologic diagnoses, clinical pathology, consultations, and administrative tasks.

Although it took several decades, this professional role has now gained acceptance in North America [3-4].
Twenty years after its introduction in the U.S., a survey was conducted to explore the distribution, utilisation, and employer perceptions of pathologists' assistants. This survey was distributed to all 165 active members of the American Association of Pathologists' Assistants (AAPA) employed at the time, with an accompanying survey for employer pathologists,in which the assistants were asked to provide to their supervisors [3]. The survey findings indicated that the primary objectives of PA training programs were successfully achieved. PAs were responsible for a significant number of autopsies and surgical specimen examinations within their institutions, generally working semi-independently under the supervision of a pathologist. Employer pathologists expressed satisfaction with the assistants' performance. Moreover, many assistants took on additional ancillary roles, suggesting that the specific needs of the employing institution often shape their responsibilities.
However, it remains unclear whether this new professional role has been similarly accepted in European countries where training programmes for PAs have been established [5].
A recent comprehensive review by Wright describes the evolution of PA and the obstacles encountered before its acceptance [6].
While some apparent advantages followed the introduction of PAs, the resistance to such a workforce remodelling is still palpable [7]. Some intuitive concerns raised by pathologists and technologists could be that technologists are replacing pathologists, residents' training can be negatively affected, and a "first-class" of technologists is being created [8]. A study from the UK revealed that regards about employing PAs were also linked to apprehensions regarding the quality of their work [9].
These concerns can affect interpersonal relationships within the laboratory, potentially leading to interprofessional conflicts and consequently impacting operational performance. Without proper staff engagement during workflow changes, there is a risk of achieving the paradoxical and undesired effect of reduced overall efficiency.
In this context, understanding how the introduction of PAs is perceived is crucial for optimising integration and mitigating potential conflicts. Despite some efforts to address this issue in North America, there is a notable lack of studies from Europe on this topic. The need to explore and understand this phenomenon remains pressing.
Therefore, we conducted a qualitative study to examine the organisational and professional dynamics associated with including PAs in a surgical pathology department within a Cancer Centre.

Materials and methods

We conducted a qualitative study using an ethnographic approach, chosen for its suitability in examining participant interactions and subjective experiences [10]. Our ethnographic study employed a narrow research question within a specific organisational context, investigating the dynamics of introducing a PA as a new professional role.
To comprehensively address our research question, we employed multiple data collection strategies: covert participant observation (first phase) and semi-structured open-ended interviews (second phase) [11]. The covert phase involved systematic observation of professional life in the pathology unit without revealing the observer's identity to the staff. This method, consistent with workplace behaviour observation [6], allowed us to gather rich data while minimising the risk of altering observed behaviours, providing a profound understanding of organisational issues [11-12]. During the initial phase, covert participant observation generated field notes (FNs) complementing interview data from key informants.

The research setting

The Azienda USL-IRCCS of Reggio Emilia's Pathology Unit handles over 40,000 annual surgical specimens collected from district hospitals. The unit operates a biobank for neoplastic diseases and is engaged in various screening programmes and oncological research. Staff includes 15 pathologists, three biologists, 23 histotechnicians, and five secretarial employees. Five histotechnicians (aged 29 to 55) attended the Master Course for PAs, organised by the University of Modena and Reggio Emilia, and were employed in grossing after the study.

Procedures

During the initial data collection, the entire Pathology Unit staff, unaware of the covert observational activities, was informed about the investigation into organisational change. Accessing the research setting and establishing an appropriate identity were challenging aspects [11]. Acting as gatekeepers, Unit managers were aware of the participant-observer's role as a nursing student conducting training. The observer, with a background in nursing and trained in qualitative research, spent six months in the Unit, engaging in informal conversations and observing activities. Covert observations were documented in a diary, shared with researchers (LG and CP), and analysed following ethnographic methodology [13]. Findings were descriptively analysed to elucidate interactions among PAs and colleagues, generating provisional patterns.

Table I. Topic guide.

Topic	Prompts
Job description	Could you please tell me who is PA and what is their job within the department? Could you tell me how and when the PA activity takes place?
Dynamics within the ward	Could you please describe how this department is organized and which professionals work within it? How is, in your opinion, the relationships among professionals? Among professionals and PAs? Could you please tell me how was when PA started?
Experience of change	What did you think when the PAs started? In your opinion, what changed within the Unit? And regarding the other professionals' activities? Could you please tell me if including PA within the staff changed your work? How did you feel about it? From a medico-legal point of view, what implications can there be?
Practices	What does the activity carried out by PA mean in practice? Could you please tell me how you work with PA? How do you feel when you collaborate with PA?
Evaluation	Could you please tell me if the PA makes sense from a practical point of view within the Unit? Could you please tell me your opinion about PA's technical training? How do you judge the performances of PAs compared to doctors and technicians? Would you advise a new graduate technician or a student to continue their studies and possibly gain a PA degree?

In the second phase, interviews were conducted based on insights from observation FNs, guided by a pre-planned topic guide (Tab. I). Purposive sampling, stratified by role and responsibilities, targeted participants with varied attitudes toward PAs. External interviewers, trained in qualitative data collection, conducted interviews at the Pathology Unit, following a guide adapted to participants' roles [11]. The interview aimed to overtly discuss aspects of participants' experiences, enriching the qualitative insights from covert observations.

Data analysis

The analysis followed the methodological indications of the ethnographic approach. FNs were descriptively analysed to clarify the interactions among the PAs and colleagues. We audio-recorded and transcribed interviews verbatim. Generated patterns from FNs were triangulated with data from interviews, and three researchers proposed an analytical framework to describe categories explaining those patterns. The analysts included PAs, who brought an emic perspective on data and corroborated the generated explanation of patterns. Finally, in an iterative process, the researchers challenged and revisited the framework to generate new insights into the data and rename categories and sub-categories. The final version of the findings is based on all the authors' agreements.

Ethical considerations

Conducting a covert study raises ethical considerations involving concealing the true nature of the research from participants. Despite potential concerns of harm, the method yields valuable insights into participants' natural context [14]. During the initial phase, participants were unaware of being observed, prompting ethical considerations related to privacy and potential harm. To minimise risks, observations focused on professional styles and work-related discussions rather than personal matters. Notably, the study aligned with routine workplace evaluations, and the formal research protocol was part of a human resources improvement plan sponsored by Unit gatekeepers. Results were disclosed and approved by participants at the study's conclusion. Ethical approval from the local committee (in-house prot. n. 202/2017/OSS/IRCCSRE) was obtained before the study, with ex-post consent collected. Permission from organisational gatekeepers and informed consent for interviews were secured before the study commencement.

Results

The ethnographic observation was made over 6 months. The observations lasted 2 hours for each session on average. Eleven participants, whose characteristics are listed in Table II, were administered the interview (mean duration 24', range 16'-35').

The inclusion of PAs elicited several organisational and professional dynamics we grouped into three cross-cutting categories (and related sub-categories), summarised in Table III.

The typically close relationship between technicians and pathologists in a Pathology Unit requires effective collaboration and task tuning. While some pathologists acknowledged the need for support from technical staff, occasional challenges arose due to character incompatibilities, which were resolved within a recognised hierarchical relationship.

The introduction of PAs disrupted this established harmony, leading to varied reactions and blurred professional boundaries. Initially, opinions on working with PAs were mixed, but over time the organisation adapted. A more defined set of roles emerged, promoting

Table II. Interviewed participants' characteristics.

Code	Gender	Age	Responsibility	Work experience (years)	Work experience within PD (years)
P01	F	≥ 60	Coordinator of technicians	> 40	30-39
P02	F	50-59	Nurses' manager	30-39	30-39
P03	M	50-59	Director	30-39	20-29
P04	F	50-59	Pathologist	20-29	20-29
P05	F	50-59	Pathologist	20-29	10-19
P06	F	≥ 60	Pathologist	20-29	10-19
P07	F	40-49	Laboratory Technician	20-29	10-19
P08	F	50-59	Laboratory Technician	20-29	10-19
P09	F	50-59	Laboratory Technician	30-39	10-19
P10	F	30-39	Laboratory Technician	< 5	< 5
P11	F	40-49	Laboratory Technician	10-19	10-19

Table III. Categories and sub-categories.

Categories	Sub-categories
A testing welcome	*Different perspectives on the advantages*
	Conflicting opinions on the training path for PAs
	A mandatory organisation
Recognising the added value	*Clarifying the responsibilities*
	Timesaving
	Revaluating PAs
Open issues	*Missing institutionalisation*
	Training to be improved

collaborative practices and mutual understanding. Despite progress, issues still need to be addressed, including challenges with institutionalisation and the effectiveness of available academic training within the local health authority.

A testing welcome

The team did not entirely accept the introduction of the PA. At the time of the beginning of the research, the data reported how there were "still those in favour and those a bit against" (P09) both among the doctors, whose opposition was expressed explicitly, and among the technicians who did not say it openly (in interviews) but in informal conversations (FNs). The coordinator of the technicians reflected thus:

"On the part of the technicians, I don't know to what extent this hostility hides a kind of envy" (P01)

According to one pathologist, some physicians were wary because they felt that "certain autonomies are a bit premature" (P06). The observations confirmed this perception of PAs having too little experience.

Different perspectives on the advantages

Managers initially decided to train three PAs already working in the setting, a decision not initiated by staff but by service managers. Interviews revealed that pathologists believed the PAs chose the training course, attributing an increased workload for technicians to them.

According to pathologists, managers had long felt that PAs could handle some tasks previously done by pathologists at the sampling desk, a practice common in North American countries. The managers aimed to "innovate personnel in that specific area" (P02) and recognised that while sampling is a medical act, many processes leading to the final diagnosis can be delegated. Pathologists who embraced PAs did so for practical reasons, allowing them to relinquish time-consuming tasks and focus on other activities, emphasising the efficiency gained from this delegation.

Conflicting opinions on the training path for PAs

For managers, the PA specialisation was a form of staff enhancement (FNs). When the opportunity for university training was proposed, technicians showed varied responses – some expressed interest, while others deemed the PA role less crucial within the Unit (P05). Observational notes revealed conflicting staff opinions on the educational quality of the PA specialisation pathway. While some saw it as essential for improving work effectiveness and efficiency, others believed it would be more beneficial for developing necessary skills.

A mandatory organisation

From the covert observer's FNs, staff initially split into two factions: one among pathologists and another among technicians. Some pathologists supported the inclusion of PAs and the assigned tasks, while a subgroup felt a loss of purely medical prerogative. Among technicians, some treated PAs with detachment, wary but without direct conflict. Notably, these perspectives were not age-dependent but correlated with experience in the role and context, with newer Pathology Unit members showing solidarity with PAs.

These divergent views on PAs influenced shift organisation based on activities and the need for a 1:1 ratio between pathologists and technicians structured around the "doctor's faction" (FNs). However, incorporating PAs into shifts faced resistance due to the need to reorganise routine shifts, leading to concerns about increased workload expressed by some technicians and pathologists. Despite this, PAs were recognised for their vigilance in minimising the impact on colleagues, attempting to carve out spaces for themselves and doing double duty during training (P11).

Recognising the added value

Clarifying the responsibilities

Initially, there was a need to define the roles of Pathologists' Assistants (PAs) amid conflicting opinions, despite the awareness of their new responsibilities compared to technicians. Over 6 months, evolving dynamics among colleagues occurred as PA responsibilities became clearer, fostering collaboration and appreciation of roles. Staff recognised technicians' significant responsibilities, especially in macroscopic sampling, while acknowledging PAs' heightened responsibilities and expertise. Despite initial reservations, technicians shifted to valuing and supporting the PA role, leading to expanded tasks and improved collaboration between technicians and physicians.

Timesaving

The PA performing macroscopic sampling instead of the pathologist resulted in a clear saving of medical time.

Participants reported that PAs taking the work away from the pathologists gave them more time to devote to diagnostics: "Doctors can gain a great deal from this" (P08). The pathologists, who were initially more sceptical, also shared this view.

Revaluating PAs

Months after the introduction of PAs, positive expectations emerged. Staff viewed this new profession as "a chance to grow professionally" and "an extra opportunity for a career," making the technician's job more interesting and rewarding (P11, P10). Trained PAs were content with their new roles, and collaboration between PAs and technicians commenced. Pathologists expressed satisfaction with the assistance, noting PAs' accuracy in sample collection, prompting speculation about expanding PA activities. When respondents were asked for an overall assessment of the organisational change, managers eventually stated:

"The motivation of technical staff has increased. In the end, the inclusion of the PA did not lead to conflict among technicians" (P03).

Open issues

Finally, our data analysis showed that there were still unresolved issues surrounding the PA figure. These concerns pertained to the institutionalisation of this new profession and its related academic training.

Missing institutionalisation

According to the participants, the PA eventually became perceived as a real possibility for the growth and enhancement of the histotechnicians. However, they felt this figure still needed to be recognised and institutionalised in Italy.

"It is necessary to create awareness about this figure. It is necessary to find a way to introduce this figure fully to the authority, or it risks remaining just an experience... Work within our institution must be done" (P02)

To overcome the lack of professional recognition, within the context studied, an internal agreement was opted for, "which would allow the PAs, who are technical personnel, to be authorised and delegated to carry out certain tasks because no one gave a guarantee that there is medical-legal protection" (P01).

In our data, the perplexity of the participants regarding legal protection for PAs remained high. Moreover, the aspects of economic recognition were also far from being resolved:

"PAs don't get one more penny, and they are not recognised; they just make an extra effort..." (TC).

Training to be improved

Participants stated that "there is no real structured university course" (P01). Although the PAs acquired the basics to start doing macroscopic sampling with the training course, improving the training offer was discussed.

We gathered divided opinions among pathologists and technicians on the level of preparation that the training course offered: some believed that "academic training is limited" (P01) and that to attend the course profitably, one needed to have "a fairly precise idea of normal human anatomy and also of pathological anatomy" (P06).

Others reported that, in their opinion, the training course was "sufficient to start with. But, indeed, the work of the PA is only learned by doing it in the field' (P03).
The PAs claimed the course was somewhat improvised and lacking, leading to insufficient preparation. The PAs cited this lack of adequate training as the cause of their lack of autonomy in the various areas of the laboratories.

Discussion

The study offers insights for integrating PAs into surgical pathology labs relevant to similar contexts. Three key categories emerged, revealing perspectives on reception, recognition, and unresolved PA integration issues [15, 16]. The first category, "A testing welcome," highlighted initial resistance and varied opinions among professionals, aligning with previous studies [15, 16]. In organisational change, conflicts are common, especially in top-down decisions, reflecting disagreements on group goals. This study contributes to existing research on conflicts during organisational change [17], revealing barriers to interprofessional teamwork when challenging professional cultures [18]. The introduction of PAs raised concerns about professional autonomy and training adequacy, which are common during role implementation. Clear communication and collaborative efforts are crucial for defining PAs' roles [19], addressing concerns, and fostering a positive work environment. Role clarity is essential in organisational changes, aiding employees in understanding responsibilities and aligning with overall goals.
While questions regarding the role of PAs appear to have been resolved in the U.S., these issues remain unresolved in Europe and similarly in Japan, where significant challenges with the PA system were identified in 2006 [20]. The primary concern in Japan was restricting certain activities, such as cutting specimens and screening biopsy samples, which may conflict with Japanese medical law. Although implementing a PA system could alleviate the workload of pathologists, caution must be exercised when introducing such a system. Nonetheless, core competencies still need to be defined in many European countries, as exemplified by Finland, where this issue persists [21]. This study, for instance, addressed the core competencies required by newly graduated PAs, highlighting the ongoing need for clarity and standardisation in this area.
Gaburo [4] argued that PAs can manage a broad spectrum of nontraditional roles within the pathology laboratory. Leveraging the full extent of their knowledge, skills, and interests can significantly advance pathology practices, benefiting PAs, organisations, and patients by enhancing the quality of care, freeing up pathologists' time, boosting revenue, and improving the department's reputation.
There has been ongoing debate recently regarding the skills required for PAs, particularly concerning digital pathology. A study from Portugal underscores that digital pathology is undeniably the future of histopathology laboratories. Implementing digital pathology necessitates comprehensive workflow reorganisation involving an interdisciplinary team, which may profoundly impact the PA profession [22]. Similarly, PAs have been actively engaged in digital pathology implementation in some Danish pathology departments [23]. This study indicates that PAs have generally responded positively to working with digital pathology. Additionally, transfers of work tasks from pathologists to PAs have been favourably received by both management and pathologists. Utilising PAs in these capacities has the potential to advance both the practice of pathology and the role of the PA.
Clearly defined roles enable employees to adapt, collaborate, and contribute effectively to change initiatives. This ethnographic study highlights the challenges of integrating new roles in an unprepared organisational setting, emphasising the need for managers to anticipate and prepare adequately for these changes [24]. As interprofessional collaboration and shared practices evolved, the added value of PAs became evident. Over time, professionals' perspectives shifted as they recognised PAs' benefits, aligning with previous research on increased acceptance of new roles [24]. The potential advantages of PAs, such as time-saving and increased support for pathologists, are well-documented [25, 26]. Emphasising the positive impact of PAs is crucial for further acceptance and integration [4].
These insights apply at the micro-level of an organisation implementing the PA's new role, mainly where tasks like intraoperative frozen sections or assisting pathologists during autopsies are not routine [26], as may be shared elsewhere [5].
Despite advancements in recognising the value of PAs at the micro-level, several structural issues persist. A key concern involves the need for official recognition of PAs within the local health authority and comparable entities, aligning with studies advocating for policy changes and regulatory frameworks to support new healthcare role integration. PAs should actively contribute to decision-making, providing insights on their role integration. Collaborative efforts among healthcare organisations, educational institutions, and professional bodies are essential to address these issues, establish clear guidelines and standards, and provide ongoing support systems for PAs.
Another critical issue is assessing the effectiveness and

adequacy of academic training for PAs. While workplace performance is often equivalent or superior to pathology residents [25], scarce evidence exists on training quality. The literature emphasises the importance of robust education and training programs for PAs' competence and professional development [27, 28]. In the UK [9], there has been advocacy for establishing a formalised training framework to ensure PAs' competency further and address quality issues among pathologists. Similarly, in the Netherlands, there is support for comprehensive training for PAs, which could enhance their professional recognition and ultimately alleviate concerns about their role in contributing to patient safety [8].

However, strategies for effective education are still being explored [29]. Entry-level PAs are considered "works in progress," anticipated to independently manage core activities while simultaneously developing their skills across various facets of professional practice. This process should include the implementation of digital pathology, as demonstrated by Danish university colleges, where digital pathology has been systematically integrated into the curricula for PA students [23]. This gap in the educational literature will soon require a focused investigation to develop targeted strategies that enhance PAs' training and competency development, ensuring they are fully prepared to meet the evolving demands of their roles.

Limitations and strengths

The covert observer had received training on conducting observations before the research began. However, the ethnographer's work is complex and challenging, especially for novices. Therefore, one of the study's limitations concerns the observer's training. Having the opportunity to interface with an experienced anthropologist would have enriched the observations. One aspect that needs to be included is an analysis of the impact of context on the researcher, i.e. a self-analysis of the observer's posture. This would have made it possible to detect additional data on how context and the sense of belonging to a professional group affected newcomers. A strength of the study is undoubtedly the implementation of covert research, which can offer a way to study phenomena that often remain hidden from organisational researchers, such as emotions like anger or fear [30] and mindsets like underlying and hidden beliefs.

Conclusions

In North America, PAs play a well-established role, particularly in grossing, leading to enhanced efficiency and reduced costs [25]. We aim to introduce a similar certification programme for PAs in Italy, requiring enhanced support from relevant organisations [7]. Integrating PAs may foster a new community of practice, facilitating mutual understanding among professionals [31].

Based on our findings, a promising direction for future research would be studies exploring PAs' expectations and the demands placed upon them in Italy and European countries where their role is added and trained. Conducting a nationwide survey akin to the one undertaken by colleagues in the U.S. [32] would be valuable in exploring the anticipated roles of entry-level PAs. Such a survey could shed light on the expectation for PAs to perform specific activities within their scope of practice independently and ultimately gain recognition by achieving independent proficiency in most professional tasks.

We highlighted how successful organisational changes in healthcare should rely on professional involvement, preparedness, and recognising the change's value [33]. Effective communication, role clarification, and ongoing professional development are crucial for maximising PAs' contributions. Healthcare organisations can leverage insights from this study and existing literature to create an environment conducive to integrating PAs and improving patient care. Addressing identified issues necessitates further research and stakeholder collaboration to integrate PAs into the broader healthcare system seamlessly.

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Conflicts of interest statement

The authors have no relevant financial or non-financial interests to disclose.

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Authors' contributions

The individual contributions of authors to the manuscript should be specified in this section.

Ethical consideration

The Institutional Ethics Committee (Comitato Etico Provinciale di Reggio Emilia) approved this study (in-house prot. n. 202/2017/OSS/IRCCSRE).

The research was conducted ethically, with all study

procedures being performed under the requirements of the World Medical Association's Declaration of Helsinki. Written informed consent was obtained from each participant for study participation and data publication.

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