Received: 24 November 2021 | Revised: 17 February 2022 | Accepted: 30 March 2022

DOI: 10.1111/jan.15264

ORIGINAL RESEARCH: EMPIRICAL RESEARCH - QUANTITATIVE

JAN Leading Global Nursing Research WILEY

Towards the idea of 'clinical capital': A longitudinal study exploring nurses' dispositions and workplace manifestations in an Australian intensive care unit

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Abstract

Objective: To explore the concept of 'capital' through the study of successive interventions and outcomes (patient and staff) in a quaternity intensive care unit (ICU) across a 5-year time frame.

Design: A longitudinal intrinsic single site, a survey study was designed. The concept of 'capital' was explored through an adopted interpretive approach that involved understanding meanings from different sources, for example, discussions at compassion cafés, follow-up from staff-initiated activities, informal responses to organizational imperatives external to the unit (i.e. staff reductions and resource constraints), alongside empirical data about workplace climate and patient incidents.

Setting: A single ICU employing approximately 220 registered nurses at a quaternary hospital in Queensland, Australia.

Participants: All nurses employed in the ICU at the time of compassion cafes participated in providing feedback to inform successive activities. All nurses in the unit had equal opportunity to complete surveys, participate in subsequent unit-based sessions, take-up options; and all nurses had a responsibility to complete incident data.

Results: Survey and incident data from 2015 to 2019 identify the complexity of workplace environments. Between 35% and 45% of nurses consistently completed the survey. Activities based on staff requests initially improved incident data but did not impact the work environment; negative perceptions of the work environment at the endpoint (2019) were associated with external factors.

Conclusion: Quality care environments are labile; sensitive to both unit activity and external organization directives (namely staff reductions). Quality care can be sustained in adverse situations with increased nurse engagement in patient care dynamics in the short term.

Impact: This study articulates a previously unidentified concept, 'clinical capital'. Activities facilitating nurse engagement in broad care dynamics gave rise to a more

robust climate than just focusing on social and psychological well-being activities for nurses. Participation in issues of concern about patient care can promote resilience to short term fluctuations.

KEYWORDS
clinical capital, nursing, work environment

1 | INTRODUCTION

Quality health care is reliant on workplaces delivering safe, efficient care. Nurses, the largest group of health workers, have an embedded relationship with patients and frequently feel deeply responsible for the quality of care patients' desire and deserve. Workplace culture and care of the nurse, (as opposed to the nursed) is gaining significant traction in a bid to promote high-quality patient care and keep nurses working in environments where nursing is critical to good outcomes, such as the intensive care unit (ICU). The culture of the workplace has long been recognized as influencing both the nurses and the nursed (including their families) and is largely reliant on attitudes and behaviour of staff responsible for the delivery of care in clinical units (Lützén et al., 2010; Schluter et al., 2008).

The word 'culture' evokes many meanings. It refers to institutional life, shared across a workplace between members through attitudes and practices, and therefore the sum of jointly held characteristics, values, thinking and behaviours of people in a specific context (Braithwaite et al., 2017). In high acuity care or ICUs, culture is often associated with complex and demanding situations that may adversely impact staff (Jones et al., 2016). Sustaining positive workplace culture is of particular significance: A recent systematic review employing a wide-ranging search strategy identified in over 90% of included studies, organizational and workplace cultures were associated with patient outcomes (Braithwaite et al., 2017).

Strong correlations between culture and patient outcomes warrant exploration and analysis of positive workplace contexts, especially in high-pressure environments. Positive behaviours collectively demonstrated and displayed can successfully contribute to the expression of the constructive elements in the workplace. These behaviours well established in the workplace and leadership literature include listening, being attentive, seeking to understand, showing respect through both verbal and non-verbal means, offering considered advice and feedback, and recognition through simple acts such as encouraging statements (Cummings et al., 2018). Prosocial and ethical behaviours are forthcoming in staff when these behaviours are exhibited by leaders (Demirtas & Akdogan, 2014). Specifically, honesty, trust and two-way conversations initiated by leaders promote quality work environments (Zaghini et al., 2020). Leaders who genuinely respond to staff issues are associated with contexts with improved patient satisfaction (Zaghini et al., 2020), and reduced patient care errors, possibly because staff are actively engaged with policy and procedures to manage errors constructively (Farnese et al., 2019). Furthermore, patients report nurses' demonstrating care and attention ameliorates suffering and contribute to well-being (Sinclair et al., 2016).

Building and maintaining constructive relationships and contexts for the continuation of these behaviours is an incessant endeavour for leaders and engaged teams. Efforts to create and sustain supportive work environments need to focus not only on physical and emotional support for the individual to manage fatigue and resilience but rather attention needs to be equally levelled at leadership, workforce demands and how to support aspects of patient care that resonate with nurses' values (Brindley et al., 2019). Leadership built on genuine responsiveness, a workplace resource that enables team performance, is recognized as sensitive to contextual boundary conditions (Marques-Quinteiro et al., 2021). However, there is a limited understanding of the temporal dynamics of teams, leadership, work demands, and sustaining positive work cultures (Marques-Quinteiro et al., 2021; Zaghini et al., 2020).

2 | BACKGROUND

Health service delivery is routinely conducted in complex organizations with diverse and multiple layers. Leaders through creating trust and the conditions for valuable teamwork, known tenets in creating positive relationships, can strengthen these layers (Lee et al., 2018; Sinclair et al., 2016). Individual and system issues coalesce to create the climate of care delivery. How leadership and system issues are enacted in the work environment are critical in determining the climate of the workplace and, therefore, cannot be ignored (Winch et al., 2015).

A composite of workplace dynamics: leadership, staff mix, teamwork, unit practices, labour and material resources shape collective performance and the workplace climate. A synthesis of empirical findings has identified the core behaviours of individuals that impact clinical leadership, namely: knowledge about and attitudes towards organizational issues; capacity to lead others; capacity to network others; effecting change; willingness to take risks (Hofmann & Vermunt, 2021). Progressive workplaces are maintained when staff are successfully guided through approaches that help them 'make sense' and furthermore, middle management assist staff in strategies to help them deal with work (Brindley et al., 2019; Bryant & Stensaker, 2011). The sense that staff have of their alignment to an organization impacts their attitudes. Not surprisingly, staff express dissent and dissatisfaction when they do not feel aligned (Gill, 2018). Positive workplaces involve a nuanced approach to contribute to

psychological empowerment of individuals and create cohesive teams. It is imperative leaders ensure strategies and activities are appropriate for their cohort and context; this includes, being responsive to local issues in teams and demonstrating procedural justice (Lee et al., 2018, 2020).

Effective management of congruence, in the first instance, can impact the creation of 'social capital' known as 'the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition' (Bourdieu & Wacquant, 1992, p. 119). Alongside social capital, this study acknowledges 'habitus'. Habitus, similarly coined by Bourdieu, refers to an embodied reality created often unconsciously through how people act and behave, and therefore indicates common characteristics of practice (Malak Akgün, 2018; Rhynas, 2005). Habitus comes about through lasting dispositions; for example, in nursing, it involves how nurses perceive, think, speak, behave with patients and co-workers in their daily activities (Malak Akgün, 2018).

Exploring the conceptualisations proposed by Bourdieu and Wacquant (1992) and how they relate to care provision helps understand and seek to make a change (Rhynas, 2005). The exploration commenced in this longitudinal study begins to unravel the nuanced, intertwined relation of nurses' work in an ICU through the lens of capital. Challenges, well known to ICU nurses, namely the uncertainty of patient trajectories, critical questions that often accompany such uncertainty, the diversity and priorities of each health practitioner group, working collaboratively and competitively to secure the resources to support care and generating interactions and relationships worthy of investigation as these complexities are burgeoning across health care.

Further to this, the structures and processes of health care delivery are increasingly complex given the requirements of the diverse stakeholders; namely, national quality standards and legislation, consumer rights, responsibilities and expectations, and requirements for staff capability and well-being. Of significance is that these requirements need not be viewed as competing demands. Evidence shows clinical units that collectively recognize requirements and respond to individual needs of staff to maintain capability and well-being result in a positive culture that delivers quality care that meets requisite standards of practice (Braithwaite et al., 2017). Activities that increase team engagement and assist staff to feel safe and supported at work contribute to enhancing workplace culture (McKellar et al., 2020) and furthermore, improving patient outcomes (Farnese et al., 2019; Zaghini et al., 2020).

Quality care in the complexity of health practice relies on the creation of constructive social capital (Hammer et al., 2013). Yet, the multi-faceted nature of delivering excellence in care in these composite, and at times 'wicked' contexts, warrants exploration of capital that not just acknowledges congruence and well-being (commensurate with social and psychological capital): but encompasses nuanced negotiation of the challenges to assist nurses to deliver patient care commensurate with their values and expectations of performance.

Building on Bordieu's seminal analysis of social capital (Bourdieu & Wacquant, 1992), this longitudinal study explores capital which encompasses the social, emotional, intellectual and physical aspects of clinical care. We seek a nuanced understanding of capital in health care delivery, derived empirically from workplace data about social relationships, psychological well-being and patient care indicators.

3 | METHOD

3.1 | Design

A longitudinal intrinsic single site, survey study was designed. An adopted interpretive approach involved understanding meanings from different sources, for example, discussions at compassion cafés, follow-up from staff-initiated activities, informal responses to organizational imperatives that originated external to the unit (namely, staff reductions and resource constraints), alongside empirical data about workplace climate and patient incidents, to comprehensively explore the concept of 'capital'.

3.2 | Objective

To explore the concept of 'capital' through the study of successive interventions and outcomes (patient and staff) in a quaternity ICU across a 5-year time frame.

3.3 | Site

The study site was a metropolitan public adult teaching hospital in Australia. It has comprehensive critical care services and is an accredited Level 1 Trauma Centre. The ICU is a 25-bed mixed unit, which admits patients from all major specialities, including medical and surgical patients. The ICU is situated in a geographically extensive health service in southeast Queensland that serves a resident population of over a million people. The ICU complies with the directives of the Board and executive team. Registered nursing staff employed equated to 174 full-time equivalent positions [in 2015]. Many registered nursing staff work part-time; therefore, the headcount on the roster is approximately 220; At any one time, between 180 and 190 nurses are active on the roster as a proportion are on annual leave, maternity leave or extended sick leave. Numbers also vary according to the fraction of part-time staff and scheduled activity.

Registered nursing staff comprise unit-based leaders (namely a nurse unit manager, responsible for recruiting staff, scheduling and rosters, a clinical nurse consultant with specialized knowledge pertaining to intensive care delivery, and two nurse educators responsible for the continuing education of staff so that requisite standards of care delivery are maintained); clinical nurses (42 specialist nurses in critical care who are rostered across all shifts to help the unit based leaders build staff capacity and capability to guide and supervise

less experienced staff); base grade-registered nurses (the remaining staff responsible for the provision of bedside care). As the acuity of patients is high and specialized knowledge is required, there are no assistants in nursing (unregulated workforce in Australia) or enrolled nurses (nurses educated at diploma level).

3.4 | Programme of activities

A programme of activities, informed through the literature and tailored to meet the specific needs of staff in the unit, was commenced when error incidents had increased and leaders had learnt that not all staff felt that their contribution was valued nor that they felt included in the team. The programme of activities was an iterative process over several years guided by the literature, expressed staff needs and desired unit goals. The suite of initiatives that the unit-based leadership team orchestrated was informed through addressing staff needs determined during compassion cafés and subsequently delivered alongside managing resources in the institutional and bureaucratic constraints.

3.4.1 | Initiating and planning suite of activities

Commensurate with enhancing positive collegial relations, open communication and transparent decision-making, the unit-based leaders organized compassion awareness sessions. All staff attended 'Compassion Cafés'; designed to create an opportunity in the continuing bureaucratic demands to reaffirm commitment to compassion as part of a shared health care morality (Winch et al., 2014). These cafés provided safe, supportive spaces for nurses to recognize their needs. Staff through providing anonymous notes during the cafés identified their concerns, such as: receiving minimal feedback about patient progress following discharge which, at times, impacted their motivation as some cases felt 'futile'; inadequate collaboration and discussion with medical teams to promote understanding of the decisions made about patients' treatment modalities; and limited opportunities for staff to explore more satisfactory ways to manage family and workplace demands (Jones et al., 2016). These needs flagged by the staff provided insights that informed successive activities.

3.4.2 | Successive activities

The progress of initiatives that emerged from the compassion awareness programme and led internally by the leaders in the unit was paced according to situational demands and circumstances, including the availability of the resources. The suite of initiatives included feedback sessions to nurses about patient progress, open forums with medical staff about decision-making, creative approaches to rostering and a peer support system (Strube et al., 2018) (refer to Table 1 for more information), involved extended collaboration with consultants in the ICU, explored possibilities in the organization and accessed internal and external resources through other programmes to support staff to fulfil their needs. Each of these activities aligned with elements of responsive leadership and prosocial ethical behaviour: They sought to create the conditions where nurses felt supported to provide care more aligned with their values of quality care, for example, being respectful and person-centred.

3.4.3 | External directives

This suite of initiatives that emerged from ongoing collaborative meetings with the nurses, made possible by unit-based leaders, did not occur in a vacuum; External imperatives were a constant challenge for the local leadership team who were constantly exploring about how to best meet the needs of the nurses at the bedside in fiscal restraints. Over 4 years of data collection, the following external pressures impeded the positive steps introduced by the leaders: a new human resource management process, specifically, a new payroll system introduced a few years prior to the commencement of the case study, but problems remained still unresolved for particular staff affecting their fortnightly salary (Chesterman, 2013); an electronic patient record for ward transfers that needed to synchronize with the existing ICU record-keeping system (Eden et al., 2020); and in the latter part of 2019, whole health service budget reductions that significantly impacted staff numbers (Queensland Health, 2020).

3.5 | Participants

All nurses employed in the ICU at the time of compassion cafes participated in providing feedback to inform successive activities. All nurses in the unit had equal opportunity to participate in subsequent unit-based sessions and take-up options (e.g. secondment and flexible rostering) and provide feedback through survey completion. All nurses in the ICU have a professional responsibility to report an incident during their shift.

3.6 | Measurement tools

Analysis of the workplace, through workplace surveys and care delivery, through incident data was conducted through the collection of the same data types at four-time points over a 5-year timeframe (2015–2019). The workplace survey included subscales, such as collegiality, responsiveness, workload balance, comprising Likert scale responses and open-ended questions. Incident data was retrieved from a standard reporting system that continuously records pressure injuries and medication errors.

TABLE 1 Schedule of activities, external directives, and measurements

Dates	Activities				Outcomes/measurement	External directives
2015	Compassion cafes: An opportunity in the continuing bureaucratic demands to reaffirm commitment to compassion as part of a shared health care morality (Winch et al., 2014)				Workplace culture survey Incident data	Impediments to staff receiving full pay
2016	Feedback sessions to staff about patient progress following discharge [This involved a collated analysis of patient length of stay, patient discharges and their place of discharge derived from patient records]				Staff appreciated finding most patients were discharged home to live independently. This created an enhanced sense of purpose for care delivery in challenging circumstances	
	Organized, facilitated forums with medical staff where nursing staff raised concerns on specific cases where the basis or rationale for some of the treatment decisions were not understood				This improved understanding, relieved distress and fostered a sense of value of their work	
	Flexibility rostering through the introduction of a staff negotiated system where staff explained their choices on the preferred roster, provided opportunities to discuss potential roster conflicts with peers, and assisted arrival at mutually acceptable arrangements for shifts that were both preferred and not preferred				Staff continued to engage fully with this over the period of the study	
	Establishment of a peer support system designed so that peers were adequately prepared to coach and support other staff. This system was focused equally on the development of the peer support coaches as to the availability and access of staff to the coach				Staff appreciated talking to a peer who was not responsible for evaluating their work	
	Building self-worth was facilitated through further opportunities to broaden knowledge and experiences. Staff were provided options to work in temporary *secondments* to different clinical areas and teams, and participate in hospital-wide projects, when they requested					
					Workplace culture survey Incident data	
2017	Forums	Flexible rostering	Peer support system	Secondments/participation in projects	Workplace culture survey Incident data	Implementation of integrated electronic medical record
2018					Incident data	
2019					Workplace culture survey Incident data	Financial constraints workforce

3.6.1 | Workplace survey: Validity, reliability and rigour

The survey was a composite of existing instruments designed to seek feedback about recognized elements of cultures associated with individuals being open and responsive to ideas, seeking learning opportunities, managing workload requirements and feeling supported by their leaders. The basic demographics of nurses collected included gender, age and clinical experience. The tool was derived from a Clinical Culture Survey (Henderson et al., 2010) and a modified Clinical Environment Inventory (Newton et al., 2010). Synthesis of these two tools assisted in the comprehensive generation of elements central to conditions of practice environments delivering optimum care (Newton et al., 2014). A further eight items relating to clinical leadership based on core leadership elements (Kouzes et al., 2010), particularly to the adoption of practice change commensurate with sound evidence (Aarons et al., 2014) were added. A derivation of these surveys was used as they indicate leadership supportive of agility and responsiveness to practice and closely align to concepts of capital being explored. The final survey measured sub-scales Collegiality, Workplace Inertia, Being Valued, Work Satisfaction, Consideration for Others, Flexibility, Workload Balance, based on 31 items previously validated across numerous clinical nursing sites (Newton et al., 2014). The Cronbach alpha was .927 for the overall score and the Cronbach alphas values for the seven factors ranged from .637 to .839 (Newton, 2014). Further, eight items were added to the survey to measure nurses' perceptions of the value of the leadership team in the ICU in managing change (Aarons et al., 2014). Content validity was checked by the Clinical Nurse Consultant of Evidence-Based Practice. Survey questions were scored on a five-point Likert scale ranging from 1 (not at all likely) to 5 (extremely likely) with a higher score indicating a more favourable work climate.

3.6.2 | Incident data

Incidents of reported medication errors and pressure ulcers were tracked through this same period. Incident data about medication errors and pressure ulcers were collected from 2014 to 2019 from an electronic recording system 'RISKMAN' that has rigorous oversight. Approximation of data collection at these four times points from 2015 to 2019 is reported.

3.7 | Data collection

3.7.1 | Survey data

All ICU nurses were invited, via email, to complete the surveys prior to the commencement of the supportive initiatives with 'compassion café' study day (February to April 2015) and then annually for the next 2 years (February to April 2016 and February to April 2017), and then finally in October/November 2019 when it was considered the support strategies designed to improve workplace culture were successfully embedded.

During the four-time points that data was collected, the survey was available to nursing staff electronically via Survey Monkey or nurses could choose to complete a hard copy that was available during unit meeting times. Following the initial invitation, a reminder email was generated 2 weeks following the original communication.

3.7.2 | Incident data

Pressure ulcer incidence and number of medication errors were collected from an electronic database that staff complete at the end of their shift when errors are identified. Staff routinely record risks under designated headings. The two sets of data deemed most relevant for this study indicating the quality of patient care were: pressure injuries categorized over a SAC 2 (a temporary harm but it is not expected to significantly impact outcome) and medication administration errors (errors were any form on anomaly, that is an error did not indicate any harm to the patient). Data reported under the two headings is collected as necessary each day during the nurses' shifts. All data entries into the electronic database are checked by the supervisor to check the accuracy and consistency of entries.

3.8 | Ethical considerations

Ethics approval was granted by the Hospital Human Research and Ethics Committee (HREC/15/QPAH/106, NRS/08/15/HREC). Return of the surveys was deemed as consent. Survey data were de-identified, with confidentiality maintained. All data were safely stored and will be securely retained for 5 years.

3.9 | Data analysis

3.9.1 | Survey data

Statistics including frequency and proportions of ICU nurses completing the survey each year were described. Differences across the period (2015–2019) for individual items were compared using t-tests or Kruskal–Wallis rank tests for continuous data and chi-square test for categorical data. The distribution of survey results was assessed and reported using median and interquartile range IQR with the Kruskal–Wallis rank test used to detect differences in each item. Less than 5% of data were missing; therefore, missing values imputation was not used. An alpha value of $p < .05$ was considered statistically significant. Data were analysed using Stata (version 17; StataCorp).

3.9.2 | Incident data

Incident data about medication errors and pressure ulcers were collected from 2014 to 2019 from an electronic recording system 'RISKMAN'. Given the variation from month to month, the data was collated across the whole year [It is presented as an average: 'number of incidents per 1000 accrued patient days'].

4 | RESULTS

Unit-based strategies together with external directives and imperatives that are known to impact staff practice conditions were mapped on a timeline for the duration of the study. The timing of both external and internal events is presented on a timeline (refer to Figure 1). This trajectory displays that unit-based activities were associated with a sustained workplace culture (as measured by the workplace survey) during 2015, 2016 and 2017, yet in 2019 workplace culture surveys results were significantly different to the preceding years. Interesting, incident data that reported pressure injury and medication errors improved at the time of unit-based activities and remained relatively constant in 2019.

4.1 | Workplace survey

4.1.1 | Demographics

Survey data were collected four times over the years (2015–2019). The response rate of completed surveys from the nurses working in the ICU at each time period was 75 (40%), 73 (39%), 110 (58%) and 147 (79%), for 2015, 2016, 2017 and 2019, respectively. The majority of the respondents were female (326/ 80.1.%) with a mean age of 36.8 (*SD* = 9.7) years (Table 2). The median total years of clinical experience was 12 (IQR 7–20) years and the length of time in the current workplace was 8 (IQR 4–12) years. There were no statistically significant differences in nurse demographics between the years of survey completion except for the role of nurses in different years where there were proportionally more Registered Nurses in 2017 and 2019. There was a statically significant change in the role of nurses across the years, which the proportion of registered nurses grew over the years while Clinical/Consultant/Manager Nurse roles remained the same. This increased proportion of registered nurses compared with more experienced clinical nurses may have been influenced by the reduction in the number of senior positions over the period that monitoring was being conducted.

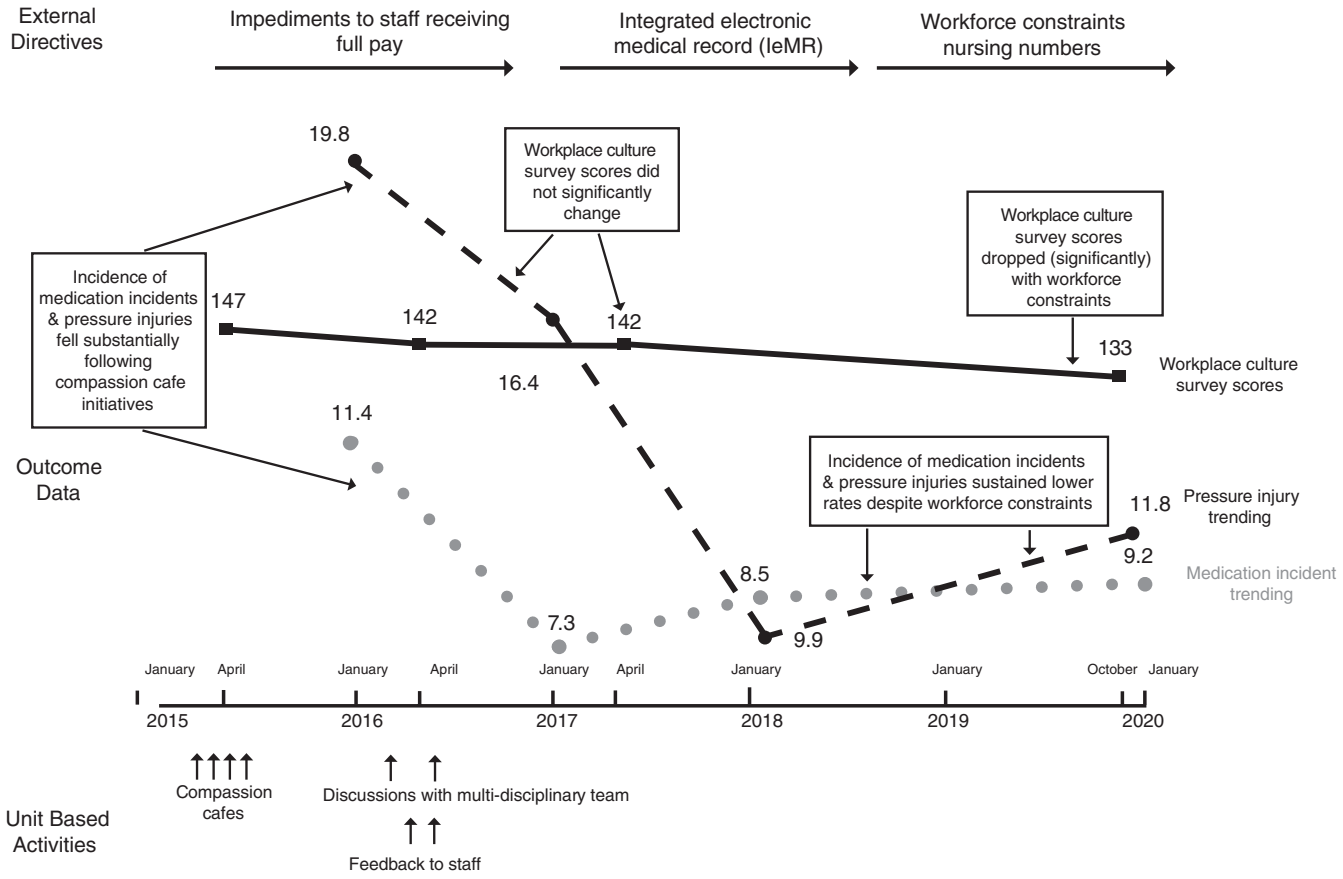

FIGURE 1 Timeline of external directives, unit based activities, and incident outcome (2015–2020)

TABLE 2 Demographics of survey respondents ($N = 410$)

	2015 $N = 75$	2016 $N = 73$	2017 $N = 110$	2019 $N = 147$	p value[a]
Age; years					
M (*SD*)	37 (9)	38 (10)	37 (9)	36 (11)	.50
Female					
N (%)	60 (80)	61 (84)	90 (82)	115 (78.8)	.84
Clinical experience; total years					
Median (IQR)	13 (8–19)	12 (9–19)	12 (7–20)	10 (5–19)	.16
Current workplace; time years					
Median (IQR)	7 (5–12)	8 (4–12)	8.8 (4–13)	7 (3–11)	.82
Role: registered nurse					
N (%)	49 (65)	53 (74)	89 (80)	127 (87)	<.01
Clinical/consultant/manager nurse					
N (%)	24 (32)	19 (26)	22 (20)	19 (13)	

[a]p value calculated using t-test for means, median test for medians and Fisher's χ^2 test for categorical data.

4.1.2 | Item analysis

The IQR of total survey scores ranged between 128 and 152, with a possible highest score of 190, with median scores of 147 (IQR 134–156), 142 (IQR 127–153), 142 (133–152) and 133 (IQR 122–143) for each consecutive year and 2019, respectively. A baseline at 147 from a possible 186 indicates a relatively favourable work climate. These results from the survey indicate that in the first two-time points, 2016 and 2017, sub-scale scores did not alter significantly from the relatively positive 2015 baseline data. As many of the baseline scores (initial survey conducted in 2015) were between 3 and 4, or even close to 4, staff perceptions were optimistic at this time. There were no significant changes across any of the subscales from 2015 to 2016 or 2017. The most consistent and significant change was the scores of all the subscales in the 2019 results. There were statistically significant differences in 2019 between total survey scores (Table 3). Survey results from 2019 had the lowest median scores for all factors (collegiality, workplace inertia, being valued, work satisfaction, consideration of others, flexibility, workload balance and nursing leadership). Interesting, there was one statement 'I really believe in the value of what I am doing' did not alter across the 4 years of the programme. Across the time of the case study, nurses believed in their work and its value to the unit.

4.2 | Incident data

During the first year, the compassion cafés were conducted, reported clinical incidents were more prevalent compared with subsequent years (see Table 4; Figure 1). The data for the year, 2015, was similar to previous years which was an impetus for the conduct of the cafés. While none of the differences reach statistical significance, the data indicates improvements following the time period when the leadership team were able to implement initiatives from the compassion cafés (2016 onward for medication incidents and 2017 onward for pressure ulcer incidents). Interestingly, it stayed fairly constant with marginal increases alongside demands for staff reductions.

In summary, the unit-based activities were associated with a reduction in adverse patient incidents. Workplace culture continued to be perceived overall between satisfactory and good during the period the activities were embedded. External factors imposing staff cuts in 2019 were associated with a significant reduction in workplace climate; However, patient incident data did not significantly alter.

5 | DISCUSSION

This study commenced with the leadership team responding to incident data and verbalization by nursing staff in the ICU to further understanding pertinent care issues. The findings that accompany activities in the broader demands of health care systems indicate a nuanced interplay of internal and external forces that contribute to an understanding of 'clinical capital'. While unit leadership is important in negotiating an order for staff when demands are complex, the literature is relatively silent about staff perceptions, behaviours and the impact on quality care in response to the 'ebb and flow' that is commensurate with local responses to challenging times of significant organizational exigencies (Marques-Quinteiro et al., 2021).

Theorization of our longitudinal, multi-sourced, empirical data has identified critical elements of a version of social, psychological, intellectual, physical capital, namely 'Clinical Capital', which we have defined as the relationship between social and emotional well-being and clinical acumen that are interconnected and dependent on each other to deliver quality care. Drawing on Bourdieu the term 'clinical capital' eloquently expresses a new form of capital, that can interact with habitus, to offer a further nuanced understanding of the nursing

TABLE 3 Workplace survey responses[a] from 2015 to 2019 (n =410 responses)

	Median (inter-quartile range)								
	2015 (n = 75)	Missing	2016 (n = 75)	Missing	2017 (n = 113)	Missing	2019 (n = 147)	Missing	p value[b]
Factor 1 Collegiality (8, 18, 22, 23, 25, 26, 28): Total 35 points	28 (24–30)	3	28 (23–30)	2	27 (25–29)	2	25 (23–27)	1	<.01
Staff put effort into what they do in this workplace	4 (4–4)	3	4 (4–4)	2	4 (4–4)	5	4 (4–4)	1	.04
We work as a team here	4 (4–5)	3	4 (4–5)	2	4 (4–5)	3	4 (4–4)	1	<.01
Everyone in this workplace strives for excellence	4 (3–4)	4	4 (3–4)	3	3 (3–4)	5	3 (2–4)	2	<.01
In this workplace, people communicate freely	4 (3–4)	5	4 (3–4)	3	4 (3–4)	5	3 (3–4)	4	<.01
Staff are well supported	4 (4–5)	5	4 (4–4)	3	4 (4–4)	6	4 (3–4)	4	<.01
Staff help each other to get the job done	5 (4–5)	3	4 (4–5)	2	4 (4–5)	2	4 (4–4)	1	<.01
Staff are not interested in my problems[c]	4 (3–4)	5	4 (3–4)	2	4 (3–4)	6	3 (3–4)	4	<.01
Factor 2 Workplace Inertia (3, 4, 13, 17): Total 15 points	11 (9–12)	3	11 (8–12)	2	10 (9–12)	2	9 (8–10)	1	<.01
I am talked to rather than listened to[c]	4 (3–4)	3	4 (2–4)	3	4 (3–4)	2	3 (3–4)	1	<.01
My views are ignored at this workplace[c]	4 (3.5–4)	3	4 (3–4)	2	4 (3–4)	2	3 (3–4)	1	<.01
Changing practice in this workplace is difficult[c]	3 (2–4)	4	3 (2–4)	2	3 (2–4)	5	2 (2–3)	2	.02
When engaging with me, staff are sidetracked[d]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Factor 3 Being Valued (9, 11, 19, 20): Total 20 points	15 (13–16)	3	14 (12–16)	2	15 (12–16)	2	13 (11–15)	1	<.01
I have a say in what happens here	4 (3–4)	3	3 (2–4)	3	3 (3–4)	5	3 (2–3)	1	<.01
I feel as if I'm listened to here	4 (3–4)	3	4 (3–4)	2	4 (3–4)	3	3 (3–4)	1	<.01
I feel that I am an important member of the team	4 (3–4)	4	4 (3–4)	3	4 (3–4)	4	3 (3–4)	2	<.01
It is clear that my work is important to the success of this workplace	4 (3–4)	5	4 (3–4)	2	4 (3–4)	8	4 (3–4)	4	.42
Factor 4 Work Satisfaction (15, 16, 29): Total 15 points	12 (11–13)	3	12 (10–13)	2	12 (10–13)	2	11 (9–12)	1	<.01
After work, I have a sense of satisfaction	4 (4–4)	3	4 (3–4)	4	4 (3–4)	4	4 (3–4)	1	<.01
I really believe in the value of what I am doing	4 (4–5)	4	4 (4–5)	2	4 (4–4)	5	4 (4–4)	2	.34
I look forward to coming to work	4 (3–4)	5	4 (3–4)	3	4 (3–4)	7	3 (3–4)	4	<.01

(Continues)

TABLE 3 (Continued)

	Median (inter-quartile range)								
	2015 (n = 75)	Missing	2016 (n = 75)	Missing	2017 (n = 113)	Missing	2019 (n = 147)	Missing	p value[b]
Factor 5 Consideration for Others (1, 2, 7): Total 15 points	12 (10–12)	3	12 (10–12)	2	12 (11–12)	2	11 (10–12)	1	<.01
People consider students' feelings [My colleagues consider students' feelings]	4 (3–4)	5	4 (4–4)	3	4 (4–4)	6	4 (3–4)	4	.10
People consider colleagues' feelings [My colleagues consider how others are feeling]	4 (3–4)	3	4 (3–4)	3	4 (4–4)	3	4 (3–4)	1	.03
Students are shown exactly what has to be done in this workplace.									
Factor 6 Flexibility (5, 6, 10, 14, 31): Total 25 points	19 (17–21)	3	19 (17–21)	2	19 (17–20)	4	18 (16–20)	1	<.01
I receive support and advice when I am having trouble with my work	4 (4–4)	3	4 (4–5)	2	4 (4–4)	2	4 (4–4)	1	.08
In this workplace I am encouraged to try new things	4 (3–4)	4	4 (3–4)	3	4 (4–4)	5	4 (3–4)	2	.02
Different ways of teaching are used in this workplace	4 (4–4)	5	4 (4–4)	2	4 (4–4)	6	4 (3–4)	4	<.01
My contribution is recognized	4 (3–4)	4	3 (3–4)	3	4 (3–4)	5	3 (3–4)	2	<.01
I am encouraged to ask questions	4 (4–4)	5	4 (4–4)	2	4 (4–4)	6	4 (3–4)	4	.03
Factor 7 Workload Balance (12, 21, 24, 27, 30): Total 25 points	15 (13–16)	4	14 (13–16)	2	15 (13–16)	4	13 (12–15)	2	<.01
I am allowed to work at my own pace[d]	NA	NA	NA	NA	NA	NA	NA	NA	NA
I am allowed to negotiate my workload in this workplace	3 (2–4)	4	3 (2–4)	2	3 (2–4)	4	3 (2–4)	2	.53
I am able to balance all of the requirements of my role	4 (4–4)	4	4 (3–4)	2	4 (3–4)	5	4 (3–4)	2	.02
Teaching approaches here facilitate me to proceed at my own pace	4 (4–4)	5	4 (4–4)	2	4 (4–4)	6	4 (3–4)	4	.05
Workload allocations are carefully planned	4 (4–4)	5	4 (3–4)	2	4 (3–4)	6	4 (3–4)	4	<.01
Added questions: Total 45 points	35 (33–38)	3	34 (30–37)	2	35 (32–37)	2	33 (28–35)	1	<.01
The nursing leadership team are approachable	4 (4–5)	3	4 (4–5)	3	4 (4–4)	2	4 (3–4)	1	<.01
The nursing leadership team enables change by helping remove obstacles	4 (3–4)	3	3 (3–4)	2	4 (3–4)	3	3 (3–4)	1	<.01

TABLE 3 (Continued)

	Median (inter-quartile range)								
	2015 (n = 75)	Missing	2016 (n = 75)	Missing	2017 (n = 113)	Missing	2019 (n = 147)	Missing	p value[b]
I know how to find out the scope of practice of a learner or newcomer	4 (4–4)	4	4 (4–4)	3	4 (4–4)	6	4 (4–4)	2	.06
The nursing leadership team is actively involved in improving work practices	4 (4–5)	4	4 (3–4)	2	4 (4–5)	4	4 (3–4)	2	<.01
Clinical staff feel a strong connection with the nursing leadership team	4 (3–4)	4	3 (2–4)	2	3 (3–4)	5	3 (2–4)	2	<.01
The nursing leadership team know what they are talking about in relation to changes in practice	4 (4–4)	5	4 (4–4)	2	4 (4–4)	6	4 (3–4)	2	.13
The nursing leadership team are readily able to answer questions about unit-based changes	4 (4–5)	5	4 (4–5)	2	4 (4–4)	7	4 (3–4)	4	.02
I am encouraged in my day-to-day work, learning and career progression to proceed at my own pace	4 (4–4)	5	4 (4–4)	2	4 (4–4)	6	4 (3–4)	1	.25
The nursing leadership team are knowledgeable about practice change	4 (4–4)	5	4 (4–4)	2	4 (4–4)	6	4 (3–4)	1	.09
Total survey score: Total 190 points	147 (134–156)	4	142 (127–153)	2	142 (133–152)	4	133 (122–143)	2	<.01

[a]Survey scores range from 1 to 5, higher scores indicate improved workplace culture.

[b]p value calculated using Kruskal–Wallis test.

[c]Item scoring reverse.

[d]Not included in this survey.

TABLE 4 Incident data

Incident	2015	2016	2017	2018	2019
Pressure injuries per 1000 accrued patient days	19.80	16.39	9.89	12.65	11.27
Medication administration incidents per 1000 accrued patient days	11.39	7.29	8.48	9.56	9.24

practice. Workplace developments led by the nursing leadership team in the ICU integral to this study included: open, honest conversations that responded to staff expressed needs, such as, increasing staff access to strategies to assist with well-being, eg team feedback sessions, peer support, openings for secondments, associated with feelings of staff connected to work important for psychological empowerment (Mufti et al., 2020). These occurred concurrently with activities aimed at improving open communication and relationships across medical and nursing teams to optimize involvement in patient care; important for staff compliance with policy and procedure to reduce errors in patient care (Farnese et al., 2019). These initiatives are commensurate with empowerment, engagement and developing social relations recognized as central to healthy work environments that deliver safe, quality care (Wei et al., 2018). Consistent with leadership that assists organizational change the local leaders 'took risks' (Hofmann & Vermunt, 2021). Activities were conducted alongside competing fot the external activity that impacted personal issues, that was, disruptions to expected salary, shifting work processes with an electronic patient data record, and reductions in staffing (refer to Figure 1). Incident data that reports reduced pressure ulcers and medication errors suggest that responding to staff concerns and facilitating their engagement in patient trajectories may have positively impacted on the commitment to delivering quality care. Also, a consistent relatively positive work climate during 2015, 2016 and 2017 indicates a level of robustness to bureaucratic directives that challenge staff working conditions. However, drastic staffing reductions in 2019 were associated with general staff dissatisfaction, that is, significant difference across all subscales indicating negative sentiments.

Of interest, our concept of 'clinical capital' is sustained quality care provision (evident in incident data) when the work climate was adversely impacted in 2019 (evident in statistical differences in work climate sub-scales). We understand that 'clinical capital' was generated through the support of nurses to constructively contribute to clients and families through addressing nurses' priorities. Our findings indicate 'clinical capital' was created through the commitment of activities that were focused on the promotion of social and psychological well-being around issues that interfaced with patient care, for example, more information about patient trajectories post-discharge, insights into medical decision-making shared with bedside clinicians. These 'supplemental' activities with bedside nurses appeared to give rise to a robust climate; and possibly more robust than activities such as middle management sharing information about resource management issues that they cannot control and advocating 'mindfulness' for nurses, where nurses' well-being is often promoted in isolation of clinical practice issues. Our project led by clinical leaders that addressed immediate, relevant issues in practice is possibly the first of its kind to demonstrate how quality care can be sustained in seemingly adverse situations because nurses were assisted to better engage with the dynamics of patient care and develop a more nuanced temporal understanding of the generation of capital.

'Clinical capital', a specific arrangement of composite factors is possibly the type of capital resilient in difficult times when resources are strained—It may serve to sustain a positive climate when factors known to impact well-being are under threat, for example, understaffing and tight resources. This is of particular importance given that recent research suggests leaders with genuine concern for staff are limited in positively impacting these external demands (Marques-Quinteiro et al., 2021). These findings demonstrate the circumstances of nurses' commitment to quality work at times of drained morale and resources. The vital nature of leadership in engaging, valuing and responding to staff needs reaps rewards through the creation of 'clinical capital'. These findings indicate the commitment of staff, at least temporarily, to work 'above and beyond' when resources are constrained to ensure quality care.

Of ongoing concern is the well-established evidence that personal needs and social-relational factors in the work environment affect quality care (Braithwaite et al., 2017). Historically, significant deficits in quality care provision have been closely associated with culture (Francis, 2013). Given these known associations, it is imperative for 'clinical capital' to be sustained that these emergent situations of staff reductions are successfully readily addressed. Otherwise, 'clinical capital' is eventually lost and a negative culture results—for which 'clinical capital' is unable to be revived.

Produced and demonstrated in healthcare organizations, 'Clinical Capital' is vital to reduce the vulnerability of quality of care during periods of intermittent organizational demands and pressures.

5.1 | Limitations

There were multiple limitations to this study. First, this study was a single site in a complex care environment, namely a quaternary ICU, and therefore the results are not generalisable. Second, the education opportunities were broad and based on individual needs; the impact of these was not assessed. Finally, workplace surveys were not coded for individual staff it is not known whether the same nurses completed the survey each year. However, a significant number of the cohort each year completed the survey suggesting that it is reasonably representative of the ICU team of nurses. Workplace perceptions are fluid and complex. It is because of the very fluid,

complex nature of workplaces that data was derived from multiple sources, along with the reporting of extrinsic external events to construct a comprehensive picture.

6 | CONCLUSION

This study conducted in a tertiary acute care-identified unit-based activities were associated with a reduction in adverse patient incidents that were sustained across the study period despite external factors potentially negatively impacting nurses identified through the workplace survey. Exploration of the many known nuances of care provision, gave rise to a new theoretical concept that we have termed 'Clinical Capital'. This concept arose from our analysis of different data sets, that is, staff well-being and patient indicators, considered in the context of unit-based initiatives requested by staff and external requirements over which staff had no control. Continuous analysis of 4 years of multi-sourced data at the site suggested the existence of a tenacious concept, 'clinical capital', indicative of a collective (social, psychological, intellectual, physical) capacity for quality care. Quality care can be sustained through external adverse situations when nurses' engagement in patient care issues is increased. This arguably contributes to 'clinical capital', assisting resilience and robustness in the workforce to fluctuations in the short term.

CONFLICT OF INTEREST

None. We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

AUTHOR CONTRIBUTIONS

All authors have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content and (3) final approval of the version to be submitted.

PEER REVIEW

The peer review history for this article is available at https://publons.com/publon/10.1111/jan.15264.

DATA AVAILABILITY STATEMENT

Authors do not wish to share the data.

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How to cite this article: Henderson, A., Takashima, M., Burmeister, E., Strube, P. & Winch, S. (2022). Towards the idea of 'clinical capital': A longitudinal study exploring nurses' dispositions and workplace manifestations in an Australian intensive care unit. *Journal of Advanced Nursing*, 78(*11*), 3673–3686. https://doi.org/10.1111/jan.15264