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Enhancing nursing team resilience to manage continuous change in practice: A qualitative descriptive study

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ABSTRACT

Aim: The study explored nurses' perceptions of team resilience in coping with continuous changes and in developing nursing practices. Additionally, it sought to identify what nurses need to strengthen their team's resilience in adapting to change and how clinical nurse specialists can support these efforts.

Background: Persistent changes in healthcare require nursing teams to continuously adapt and develop their practices. However, development and implementation processes are often challenging, stressful, or unsuccessful. This can lead to change fatigue and, when combined with daily workload pressures, high job turnover. Currently, individual resilience is regarded as a key factor in coping with workplace stressors and burdens. Yet, growing critical perspectives emphasise the importance of team resilience, which differs from individual resilience. Despite practice development being mainly a team effort, nursing team resilience remains underexplored in the literature.

Study design and methods: This qualitative descriptive study involved 29 registered nurses from two nursing teams at a Swiss paraplegic rehabilitation clinic. Data were collected through eight semi-structured group discussions, and the analysis was conducted using structured qualitative content analysis.

Results: The nurses identified four key areas as crucial factors for team resilience in managing change:

1. A lack of knowledge about team resilience and interest in integrating the concept as fundamental resource.
2. Psychological safety within the nurse team and the desire to enhance interprofessional psychological safety, recognised as key factor in team resilience.
3. Readiness to learn.
4. Anticipated burdens. Furthermore, they expressed a need for support from clinical nurse specialists to strengthen team resilience.

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Conclusion: Team resilience was identified as an unrecognised and neglected concept, yet it was acknowledged as being significant both intra- and interprofessionally for coping with challenges; weak team resilience was considered disadvantageous. Clinical nurse specialists should play a key role in supporting team resilience.

Recommendations for research and practice: Team resilience should be promoted among nurses across all education levels and fostered within nursing teams. Models for interprofessional collaboration and implementation could enhance team resilience factors that are essential for managing change. Additionally, the perspectives of other professionals on collaboration with nursing teams should be explored further.

What is already known?
- Nursing teams must continuously adapt their practices due to persistent changes in healthcare. This process is often challenging and stressful, increasing daily workloads and potentially leading to change fatigue and job turnover.
- The level of resilience in individuals, teams and organisations becomes evident when challenges and stresses arise. Currently, individual resilience is regarded as a key factor in coping with workplace challenges and burdens.
- Hospital nursing relies on a strong team-based approach, and nurses face numerous challenges, including those arising from ongoing change.

What this study contributes:
- This study highlights the importance of team resilience. A knowledge gap regarding this concept was identified and addressing it could enhance teams' ability to cope with change.
- Nurses recognised team resilience as an essential resource for managing persistent change and fostering future development. Consequently, they expressed a desire to gain knowledge about team resilience and to strengthen key factors such as psychological safety in interprofessional collaboration, readiness to learn, and the anticipation of burdens associated with change.
- Integrating and strengthening team resilience in change implementation may facilitate more successful and sustainable development.
- Clinical nurse specialists should play a key role in enhancing team resilience.

Keywords: Advanced practice nursing, change, clinical nurse specialist, practice development, psychological safety, team resilience.

INTRODUCTION

Healthcare organisations are in a constant state of transformation due to technological advances, demographic shifts, evolving disease patterns and new treatment options.[1] Increasing demands from society and the health care system require nurses to undergo continuous professional development and adaption to ensure patient-centred, safe and, effective care.[2–4] Frequent change and transformation have become an ongoing challenge, often triggering varied responses, including resistance and change fatigue driven by fear and uncertainty.[5,6] The well-documented effects of frequent change on staff health and well-being include reduced commitment, decreased productivity, work-related stress, emotional exhaustion, mental health issues, and absenteeism.[7–9] However, how nurses navigate this constant and inevitable change remains largely overlooked and insufficiently researched.[10]

In Switzerland, advanced practice nurses with clinical nurse specialist (CNS) profiles are increasingly leading practice development in hospitals by initiating innovations and change processes.[11–13] They support teams at intra- and interprofessional levels to evaluate and adapt care practices using team-building, training strategies and, leadership skills.[14] Leading change is a complex process, not yet fully understood, and remains one of the most challenging leadership tasks.[15,16] In nursing literature, the failure rate of change efforts is estimated at 40-80%.[16]

Resilience, originally a concept in physics, describes the ability of materials to withstand pressure, maintain function, and regain their original form. In psychology, the concept of resilience was first transferred and applied to humans in the 1970s and is now widely recognised for managing burdens, crises and change.[17] In its original technological domain, this concept evolved into an interdisciplinary field known as resilience engineering, which integrates multiple disciplines to enhance systems abilities to function, resist, adapt, and learn.[18] This is significant, as resilience and learning are closely linked.[19] In the workplace, resilience is regarded as both a key factor and a critical asset for maintaining performance and well-being, and for coping with – and ideally maturing through – changes and challenges.[20,21]

Resilience is crucial at both the individual and team levels.[22] Despite its relevance for organisations, team resilience (TR) is particularly in nursing less studied compared with individual resilience.[23–25] Research throughout various nursing settings

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has predominately focused on individual resilience.[26–31] However, there is growing criticism and concern about the focus on individual resilience, as this places the burden on individuals to cope with adversity rather than fostering collective responsibility to support and protect them.[32] TR emerges from interactions among team members and goes beyond the sum of individual resilience; achieving shared goals through teams' collective ability to manage challenges and burdens.[22,33]

Resilience cannot be measured directly; it is derived from the relationship between risk-taking and positive adaptation.[34] Numerous models outline key factors for enhancing resilience. In the context of TR, the primary factor is psychological safety (PS), followed by collective efficacy, optimism, learning readiness, solution and goal orientation, problem-solving ability, an open error culture, reflective practice, and burden anticipation.[21,35] At the organisation level, critical factors include value orientation, a shared vision, knowledge transparency, change anticipation, adaptability and leader encouragement.[17]

The literature underscores that resilience is fundamental to sustaining nurses' health, functioning, and professional development. Initially discussed in terms of individual resilience, the importance of TR is now increasingly recognised.

In paraplegic rehabilitation care, patients remain on the same ward from the acute phase until rehabilitation is complete, placing considerable physical and mental demands on nursing staff. Nurses support these patients through highly stressful periods, characterised by significant uncertainty and severe physical dependency. Moreover, medical advances, ageing, and multimorbidity necessitate continuous adaptation of care. Consequently, nurses are highly dependent on effective teamwork.

To date, no studies have explored TR in paraplegic rehabilitation nursing or its role in ongoing development within this setting. Therefore, this study aimed to understand how nurses perceive their TR, what they require to strengthen TR in managing continuous development and change, and how TR can be supported by CNSs.

The research questions were as follows:

1. How do nurses in a paraplegic rehabilitation setting describe TR in relation to change and practice development?
2. Which TR related factors do nurses wish to enhance to cope with change and development, and how can CNSs support them in increasing TR?

METHODS

A qualitative descriptive design was employed to address the research questions, guided by a content analysis approach.[36] According to Margrit Schreier (2014), content-structuring qualitative content analysis is a systematic method for analysing qualitative data, aiming to provide a structured and detailed description of content categories. This approach facilitates the organisation and interpretation of large volumes of qualitative material by dividing the process into clearly defined steps. It is particularly well suited for understanding and describing the perceptions, views, and needs of care team members.[36,37]

DATA COLLECTION

Between December 2021 and January 2022, eight semi-structured group discussions were conducted with nurses from two wards using an interview guide. The groups were specifically composed for each ward, allowing for the identification of shared dimensions of interaction, attitudes, behaviours, and action patterns within a their social group. The aim was to facilitate a dialogue among participants with minimal external influence, enabling them to select the topics within a predefined thematic framework. This approach was intended to help uncover implicit knowledge derived from their everyday interactions.[38–40]

Recruitment, inclusion criteria's, participants, and group composition:

For the study, 51 nurses from two teams at the paraplegic rehabilitation centre were contacted by email in November 2021 via an information flyer and invited to participate. A total of 29 nurses were recruited, all of whom met the following inclusion criteria: a) Holding a nursing degree for at least six months. b) Being employed in one of the two teams for a minimum of six months with a work schedule of no less than 40%.

Of the participants, 26 were female and 3 were male, reflecting the department`s gender ratio. The average age was 42.9 years (range: 21 to 61 years), with an average of was 17.6 years in the profession and 9.7 years of employment at the rehabilitation centre.

The groups were formed from randomly selected nurses who were either assigned to a shift that day or willing to come to the clinic for the discussion. From each ward, three groups of four nurses were formed, while one ward had an additional group of three nurses. Ward managers were interviewed separately in pairs to provide them with the opportunity to speak freely about the relationships between employees and management.

The discussions were conducted in a medium-sized hospital in German-speaking Switzerland, in a meeting room at the participants' workplace, free from patient calls, outside their working hours. The interviews lasted between 60 and 90 minutes and were digitally recorded using a free-standing microphone.

The interview guide was developed based on resilience models and their key components.[21,35] Items were selected in alignment with the research questions on TR, with a particular focus on teamwork and its relevance to learning processes and change management in practice development (Table 1).

TABLE 1. INTERVIEW GUIDE

Introductory phase: Introductory question & narrative stimulus
What do you know about TR?
To what extent is this term familiar or understood?
Consolidation phase
Attitude/resources for learning and change
How does the team manage the demands of learning?
What team resources are available to support change and development?
How do you perceive TR in relation to learning, change and development?
How do you perceive the key components of TR in relation to these aspects? • Psychological safety • Collective efficacy-beliefs • Learning readiness • Orientation towards the future • Reflectivity • Error culture in learning • Solution orientation & coping styles • Optimism • Creativity • Burden anticipation • Uncertainty tolerance • Perseverance
Solutions & wishes
What could enhance TR to manage change and practice development?
Which key concept(s) should be promoted?
How is the leadership style experienced in practice development?
How can CNSs support TR?
Exit phase: Closing question for open points

Each discussion started with introductory questions about TR knowledge, followed by general questions on learning and managing change. To minimise external influence, key components were gradually introduced throughout the discussion.

Each session concluded with questions about support, needs, unmet challenges and unresolved issues.

DATA ANALYSIS

The digital interview recordings were transcribed using MAXQDA analysis software (version 2022). Following the analysis of the group discussions for each ward, similarities were identified. The coding process was theory-driven, employing deductive coding for the main categories (based on the interview guide) and inductive coding for subcategories emerging from the data.

The subsumption strategy was applied, where subcategories were continuously developed based on newly mentioned relevant terms. This combined concept- and data-driven approach resulted in fewer additional main categories. To enhance clarity and consistency, all main and subcategories were clearly defined with content specifications. Text codes were continuously reviewed, eliminating the need for sample coding and subsequent revisions of the coding system.[36,37]

To ensure intracoder reliability, repeated analyses were conducted to verify the categorisation within the category system. All coded text passages were summarised and annotated. Approximately 1100 coded segments related to key components were grouped based on factors that either promoted or weakened resilience. A qualitative descriptive design was selected to address the research questions, employing a content analysis approach [37].

ETHICS

The Cantonal Ethics Committee of the Canton of Zurich confirmed its non-responsibility in accordance with the Swiss Human Research Act (BASEC no. Req-2021-00900).[41]

All participants received detailed study information and were given several days to make their final decision. They provided written consent, understanding that they could withdraw at any time without facing any disadvantages. Anonymity was ensured, and the results were securely stored. Quotations were assigned randomly generated numbers.

RESULTS

Four key TR areas and associated requirements for the CNS role were identified:

1. A lack of knowledge about TR
2. The need to enhance PS in interprofessional collaboration
3. Learning readiness.
4. Burden anticipation.

KNOWLEDGE ABOUT TEAM RESILIENCE

Almost all nurses were unfamiliar with TR. The topic had not been covered in their education; only individual resilience was occasionally discussed. However, during the interviews, they reported a wealth of implicit experiences with components of TR, distinguishing factors that strengthened or weakened their ability to cope with change. They likened

themselves to elements of a mobile sculpture, highlighting how they were interconnected, mutually dependent, and moved as one team.

> "I think it's much harder to build TR in a nursing profession, (…) you might only work with someone twice in two months, and then not meet them again." N_14

This quote illustrates the challenges of developing TR amid constantly changing team compositions, which are exacerbated by shift work, frequent reliance of temporary staff, and evolving requirements. The nurses expressed a strong desire for direct attention to TR and for acquiring relevant knowledge, and they recognised that CNSs play a key role in this process.

PSYCHOLOGICAL SAFETY

The teams described PS as essential for teamwork, enhancing the quality and effectiveness of collaboration in managing daily tasks and changes. Both teams reported differing experiences between intra- and interprofessional collaboration, highlighting a significant need to strengthen interprofessional PS. They recognised that CNSs play a key role in mediating between professions.

Intraprofessional psychological safety

The nurses felt psychologically safe within their teams; some had previously experienced a lack of safety, which made them value it more.

> "I think it's simply because we have a good team spirit. I don't feel stressed knowing my colleagues are there and I can reach them, and I feel much more relaxed working, even running all day (…). I`m feel like I'm in good hands." N_24

Feeling supported, trusting their colleagues and being able to ask for help enhances nurses' PS. In caring for the paraplegic population, nurses are highly dependent on one another; due to patients` often severe physical impairments and psychological burdens, nurses typically work together to provide care for a single patient. The nurses stated that without effective team performance it would be impossible to deliver care, facilitate professional development, and adapt to change.

> "We know each other and how to take care of us. We support one another super well; I think that's a great resource that we have there. (P11: I think so too). If that was not the case, we would have even more significant fluctuations." N_26

All groups affirmed the nursing team's crucial role as a cornerstone of their professional experience. Remaining in the workplace, which is highly valued in today's world, was strongly influenced by the team and also contributed to their professional development. However, this setting is also frequently challenged by staff turnover and shortages.

> "I noticed the team has moved extremely close together and the remarkable factor is the ability for teamwork, (…) social competencies are almost paramount in the team at the moment, (…) we can handle it together, no matter what happens". N_20

The intraprofessional PS of nurses has remained stable despite numerous intense and stressful periods. They take pride in their mutual appreciation, which fosters optimism and reinforces their sense of capability as a team. Some nurses emphasised the importance of strengthening collaboration with healthcare assistants to support future development.

Interprofessional psychological safety

The nurses aimed to enhance their PS through interprofessional team collaboration.

> "I think a lot of work has to be done regarding how we are perceived from others as a professional group." N_04

Despite significant advancements in nursing, it continues to be perceived as a service profession. This perception does not align with the contemporary therapeutic understanding of nursing as an equal discipline alongside other professions. It is the shared responsibility of nurses and other professionals to challenge and reshape this view.

> "Sometimes I truly have the feeling I am everyone's secretary. (…) It makes me very unhappy and eats up a lot of my energy and time, which I could invest much better." N_11

This issue was frequently described as a lack of respect for the nursing profession, exemplified by tasks being delegated without consultation, frequent work interruptions, and the requirement to adhere to timelines set by other professions. The nurses expressed a desire for greater recognition, as both they and their work were negatively impacted by these circumstances.

> "Often, we as nurses simply lack appreciation; I think that is the problem (N_02: Exactly, exactly). (…) the cooperation, the whole interdisciplinary thing, is difficult sometimes, isn't it! Because doctors are still so hierarchical; he decides, he says, partly you are not even asked, I think that is still a problem in rehabilitation." N_12

All groups expressed concerns regarding positioning and recognition of the nursing profession, which they viewed as inherently interdisciplinary, particularly through greater participation in decision-making. They noted that hierarchical structures continue to shape the healthcare system, especially in rehabilitation care.

> "However, what CNSs could maybe change, during rehabilitation meetings, so there is a bigger voice from nursing." N_08

The importance of being heard was explicitly emphasised. The participants stated that nurses` input should be recognised as an essential contribution. They also highlighted the potential for their voices to be strengthened interprofessionally through the role of CNSs.

> "In general, I would like to see more self-confidence in our profession, also in relation to other disciplines. I have a feeling that things are getting better, but there is still room for improvement." N_26

The nurses also reflected on their own roles, recognising the need for development. They discussed their responsibility for improving presentation skills, to represent nursing care more professionally, which was closely linked to strengthening their own PS. Most nurses saw the potential for future interprofessional synergies and believed that development could be encouraged and hierarchies flattened. However, a few showed resignation and expressed little or no confidence in this regard.

LEARNING READINESS

The nurses' readiness to learn was influenced by a constructive approach to mistake management culture, along with their capacity for reflection and mutual support. Sensemaking and practical applicability were also top priorities for nurses when learning and implementing changes.

> "It must truly make sense; it must save us time or *increase* quality *(*N_24*: Exactly)* and not just be a theoretical thing." N_01

The nurses reported being open to change, but they emphasised the importance of practical relevance. They also cited negative experiences with theory-driven changes that lacked clear practical benefits or disregarded their input.

> "I think there's something new every day. Therefore, that's what it feels like." N_21

Ongoing learning is the norm rather than the exception; it is integral to nursing care. The nurses noted that innovations and changes were continuous, requiring extensive learning and frequent information-seeking among colleagues.

> "Well, we are mostly determined, you know, almost in everything. We determine very little ourselves as a team." N_27

Under a top-down approach, nurses were generally only informed about changes and were rarely involved in decision-making.

> "I would say the reaction is usually resistance at first because it is an additional task that is added. Structures need to be rearranged for new things." N_18

The nurses reported that learning is influenced by how change is communicated; changes can significantly disrupt an individual's routine, pushing them beyond their comfort zone. This can lead to stress and potentially weaken both resilience and learning readiness.

> "That's why I think if you let people have a bit of a say (…), I think that's how you can increase resilience in a team extremely fast." N_01

Good guidance and support are crucial for innovation, including pilot phases and opportunities to discuss difficulties, progress, and outcomes; however, these processes were frequently lacking.

BURDEN ANTICIPATION

The nurses' daily routines had become significantly more burdensome and demanding over the past two to ten years.

> "The basic work, nursing itself, demands more from us every day; the healthcare system, demographic development, patient expectations, have changed in recent years, which means the basic workload is much more and that there is always more research work, more change, more new things coming our way". N_10

Constant change, increasing complexity and a shifting demographic in the patient population were the primary causes of heightened burden.

> "Officially, we still are a paraplegic rehabilitation centre, but there have been fewer classic rehabilitation patients in recent years; (…) only a few patients can be rehabilitated nicely, and most have additional complicating diagnoses." N_26.

The diverse needs of patients had a significant impact on nurses. Gerontological, oncological, palliative, and psychiatric care are becoming increasingly complex, often making traditional rehabilitation challenging or unfeasible.

> "We have old people with multimorbidity here. (…) You push them, but (…) what we achieve is so little. Hardly anything. And that's frustrating, of course, because you give everything and maybe the patient does too (…), but it doesn't work." N_27

This led to ethical dilemmas, placing increasing strain on nurses.

> "And if we mention it, (…) most of the time you don't get very clear ideas and goals, also from the doctor's side. (…) I think if it would be more clearly defined; (…) I could deal with it differently and then I would somehow have other instruments to work with and a different attitude." N_18

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There was a lack of concepts, knowledge, and skills among nurses to address specific patient needs. They expressed a desire for interprofessional agreement and collaborative development to meet the demands of this evolving patient population. The complexity of these challenges could only be effectively addressed by amplifying nurses' collective voices.

> "The implementation of new things, concepts, (…) in the team, sometimes proves to be very, very difficult (…) because the workload has increased very, very much. People are exhausted and there is always something new, (…) then it's uuuhhhh!!!! Not again! We have enough and where should we find time for this? (…) I also think, we have our job, and now we must do something new again and again!" N_17

A predicament is emerging due to the strain caused by both a lack of change and excessive change, compounded by the intensity of the daily workload. Changes must be context-appropriate and adapted to everyday practice; if they are unsuitable or occur too frequently, they can become overwhelming or unmanageable, leading to work overload and change fatigue.

DISCUSSION

The interview results revealed that TR was an unconsidered area, with a lack of knowledge and no practical application in managing change. All nurses agreed that acquiring knowledge is essential to understanding TR and developing the capability to enhance it for professional development.

According to literature from 2007/2009, personal resilience is considered a necessary quality for success in nursing. In the context of adverse conditions[42], resilience theory should be incorporated into nursing education to foster resilience through training, education, and modifications in workplace culture.[43] More recent literature (2018/2019) confirmed that education remained focused on individual resilience, as stated by younger interviewees.[44,45]

The nurses encountered the concept of TR for the first time in this study yet simultaneously recognised their implicit experiences with TR-related factors. They realised that TR is inherent and accessible construct within self-regulation.

TR has emerged as a crucial mechanism for nurses to cope with challenges and adapt to change, but guidance and support are essential, as highlighted by the following two citations. Nursing leaders play a vital role in ensuring excellent-quality care and supporting nurses in demanding situations,[46] while also bearing responsibility for fostering a culture of resilience.[47]

CNSs should integrate and cultivate TR to guide nurses through change, employing resilience models such as the TR Compass (adapted from Wellensiek, 2011). This model could provide theoretical knowledge about TR factors and serve as a practical assessment tool.[48,49]

Among the possible TR factors, the nurses identified PS as the most important. PS is widely recognised as a central resilience factor that emerges from strong cooperative relationships. It establishes the conditions necessary for experimentation, risk-taking, and learning from mistakes while fostering trust, courage to explore new ideas, and a sense of appreciation.[50,51]

Aligned with these qualities, the nurses in this study confirmed that they felt psychologically safe within their nursing teams. They also stated that intraprofessional PS played a crucial role in their decision to remain in their workplace.

In today's strained staffing environment, staff turnover demands substantial resources and leads to knowledge loss, which can, in turn, hinder effective teamwork.[52]

In contrast, the nurses perceived PS within their interprofessional team as quite low. They expressed a desire to strengthen PS, believing it would enhance the position of nursing by increasing in involvement and ensuring their voices were heard.

As confirmed by studies in healthcare, successful interprofessional teamwork is essential for effective and efficient treatment, high-quality care, and the safety and satisfaction of both patients and staff.[53,54]

Interprofessional teamwork was identified as a key factor influencing nurses' working environments and their decision to leave their organisation.[55] This underscores the significance of the interprofessional team, as described by the nurses.

Traditionally, medical doctors (MD) occupy a higher position then nurses and other health professionals within the medical hierarchy, making them the primary decision-makers in hospitals.[56] Such a hierarchical structure can discourage health professionals from voicing their opinions, potentially limiting valuable contributions to patient care.[57,58] The literature indicates that nurses report lower levels of satisfaction with teamwork climates compared to MD`s. It is more challenging for nurses to express their opinions, and they often feel that their contributions are not adequately recognised.[59]

These experiences were discussed in the groups, with existing hierarchies were identified as a significant obstacle. In the interviews, this issue was described as a systemic problem related to roles and professional groups. However, this culture is gradually evolving, with the role of nurses shifting towards greater autonomy.[60–62]

The finding of this study could support this transformation by fostering interprofessional discussion on TR and PS in rehabilitation nursing. CNSs, through their leadership skills and commitment to evidence-based nursing, can support nursing and interprofessional teams in interdisciplinary collaboration by assisting them in jointly reviewing and adapting their practice concepts.[14,63]

Notably, the nurses emphasised the importance of strong PS within both their nursing teams and at the interprofessional level.

To enhance interprofessional PS, it is essential to determine the extent to which interprofessional teams perceive themselves as cohesive units and their willingness to apply the concept of TR. This, in turn, could contribute to improved patient outcomes and greater staff satisfaction.

The Safe, Reliable and Effective Care Framework, developed by the American Institute for Healthcare Improvement, could serve as a model to support interprofessional teams. Within its two domains – team culture and learning system – it directly emphasises PS, alongside team collaboration, negotiation, and continuous shared learning. The overarching goals are to improve patient outcomes and staff satisfaction.[64]

Learning readiness and burden anticipation were identified as two central factors in practice change. The nurses reported that excessive changes or those introduced with poor timing or irrelevant content created additional burdens, reduced learning readiness, and, in the worst case, led to resistance or change fatigue.

To prevent this, changes in healthcare are more likely to succeed when health professionals can actively influence the process, feel adequately prepared, and recognise its value in terms of patients benefits.[1] Additionally, learning readiness can be fostered within teams through a learning zone, where performance is supported by strong PS. This approach enhances team learning and promotes a positive work climate, thereby improving effectiveness, efficiency, and overall team functioning.[65]

Furthermore, the nurses expressed a need for continuous learning and found a lack of change to be burdensome. The following statement highlights the importance of addressing such challenges through ongoing development; a workplace culture that fosters learning and professional growth among nurses can further enhance job satisfaction and nurse resilience.[66]

To summarise, change and development are essential, but their timing and scale must be carefully managed, taking the daily workload into account. Both too little and too much change can create challenges. Therefore, nursing teams seek leadership and support from CNSs. They can help teams anticipate pressure, establish priorities, and facilitate change, thereby enhancing learning readiness for successful and sustainable development.

According to the literature, leaders benefit from understanding how to enhance TR, as it can contribute to positive team outcomes.[24] The core objective of the CNSs – to achieve excellent care quality and promote continuous evidence-based nursing – would be strengthened by robust TR.

TR has a positive influence on employees' attitudes and behaviours towards change, increasing their willingness to support organisational transformation.[67] CNSs could directly support teams through a transformational leadership style, which is recognised for its role in fostering resilience.[48] As outlined in the introduction, change processes are challenging and frequently unsuccessful. To date, no studies have examined the link between increased TR and change implementation in nursing. To facilitate change, implementation science offers various implementation models for nursing. CNSs could, for instance, apply the revised Integrated-Promoting Action on Research Implementation in Health Services (i-PARIHS) framework. This model emphasises values, beliefs, team culture, motivation, networks, time resources, boundaries, evaluation, feedback processes, collaboration, the learning environment, and previous experiences with innovation and change.[68] The model incorporates the key factors identified in the introduction as essential for enhancing TR, managing stress effectively, and fostering the bottom-up management approach that nurses seek. Given that separate TR workshops and courses can be time-consuming, costly, and potentially unsustainable. Integrating both a collaborative framework and an implementation model into everyday practice could strengthen TR within the work process while also supporting change, ensuring continuous consideration of the current state of TR.

CONCLUSION

This study confirms existing literature indicating that TR in nursing is largely unconsidered. However, rich implicit knowledge was identified, which nurses could reflect upon and access. The nurses recognised the enhancement of TR as a crucial strategy for managing change and professional development.

CNSs play a key role in facilitating TR knowledge acquisition and linking it with nurses' implicit experiences. Intra- and interprofessional PS was identified as essential for professional growth.

The nurses emphasised that strengthening PS is critical for interprofessional collaboration and highlighted the need for a shared understanding of TR. CNSs are regarded as key supporting and mediating figures between professionals, with the ability to apply team collaboration models to strengthen TR. Addressing today's challenges requires interprofessional approaches based on mutual respect and joint learning.

As highlighted by the nurses, collaborative, adaptive patient care – tailored to the evolving needs of patient populations – could reduce burdens for both patients and nurses while enhancing TR. This may be essential in counteracting the negative spiral of strained nursing conditions.

Furthermore, learning readiness should be actively considered by anticipating workload burdens, thereby preventing change fatigue and Implementation failure.

CNSs could enhance understanding of change and support TR by applying insights from resilience engineering. Whereas resilience is understood as a complex interaction of various disciplines, this highlights the need for CNSs to integrate their understanding of implementation, collaboration, leadership, and resilience theories.

Teams with strong burden anticipation and high learning readiness could, in turn, contribute to improved quality of care, better patient outcomes, greater job satisfaction.

RECOMMENDATIONS FOR RESEARCH AND PRACTICE

TR knowledge should be incorporated into nursing education at all levels, particularly for APNs in context of leadership and change management. The promotion of TR should be firmly established in practice to support demanding teamwork and adaption to change.

In clinical practice, CNSs should recognise TR as a central factor in managing workplace challenges, burdens, and interprofessional collaboration. The collaboration and implementation models mentioned earlier, which incorporate key resilience factors, could be effectively applied.

A professional leadership approach should be oriented towards TR promotion and follow a bottom-up principle, aligning with contemporary concepts of collaborative practice with reduced hierarchy. Additionally, the healthcare sector could draw insights from resilience engineering, a well-established concept in technological fields, which has already demonstrated substantial systemic evidence.

Further research is required to explore the perspectives of different health professionals on TR and to determine which interventions effectively enhance TR in targeted and sustainable manner. Moreover, models that enhance TR in both collaboration and implementation should be tested and evaluated to facilitate and sustain change.

LIMITATIONS

The results are not generalisable due to the use of a qualitative methodology. Additionally, only nurses were interviewed. The first author held a dual role as both a CNS and researcher. She acknowledged and addressed this potential bias through transparency.[69] While no nurses perceived this as problematic, it may still have influenced their responses.

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REFERENCES

1. Nilsen P, Seing I, Ericsson C, Birken SA, Schildmeijer K. Characteristics of successful changes in health care organizations: an interview study with physicians, registered nurses and assistant nurses. *BMC Health Serv Res.* 2020;20(1):147.
2. King R, Taylor B, Talpur A, Jackson C, Manley K, Ashby N, et al. Factors that optimise the impact of continuing professional development in nursing: A rapid evidence review. *Nurse Educ Today.* 2021;98:104652.
3. Mulcahy M, Lowry C, Hoban K, Perry L. Perspectives and experiences of nurses as facilitators within a Practice Development program. *Collegian.* 2018;25(1):3–10.
4. Vázquez-Calatayud M, Errasti-Ibarrondo B, Choperena A. Nurses' continuing professional development: A systematic literature review. *Nurse Educ Pract.* 2021;50:102963.
5. Eichenberg T, Behse M. Change-Management: Managed change for a vital enterprise [German]. Gesteuerter Wandel für eine vitale Unternehmung. In: Eggers B, Ahlers F, Eichenberg T, editors. Integrated entrepreneurship: Anniversary publication on the occasion of the 65th birthday of Prof Dr Claus Steinle [German] Integrierte Unternehmungsführung: Festschrift zum 65 Geburtstag von Prof Dr Claus Steinle [Internet]. Wiesbaden: Gabler; 2011 [cited 2021 May 20]. p. 175–90.
6. Brown R, Abuatiq A. Resilience as a strategy to survive organizational change. *Nurs Manag.* 2020;51(2):16–21.
7. McMillan K, Perron A. Nurses Amidst Change: The concept of change fatigue offers an alternative perspective on organizational change. *Policy Polit Nurs Pract.* 2013;14(1):26–32.
8. Dahl MS. Organizational change and employee stress. *Manag Sci.* 2010.
9. Day A, Crown SN, Ivany M. Organisational change and employee burnout: The moderating effects of support and job control. *Saf Sci.* 2017;100:4–12.
10. Delmatoff J, Lazarus IR. The most effective leadership style for the new landscape of healthcare. *J Healthc Manag Am Coll Healthc Exec.* 2014;59(4):245–9.
11. Finkelman A. The clinical nurse specialist: Leadership in quality improvement. *Clin Nurse Spec.* 2013;27(1):31–5.
12. Tracy MF, Sendelbach S. The Clinical Nurse Specialist. In: Tracy MF, O`Grady ET, editors. Hamric and Hanson`s Advanced practice nursing: an integrative approach [Internet]. 6th ed. St. Louis, Missouri: Elsevier Saunders; 2019 [cited 2022 Jul 7]. p. 343–73.
13. Babine RL, Honess C, Wierman HR, Hallen S. The role of clinical nurse specialists in the implementation and sustainability of a practice change. *J Nurs Manag.* 2016;24(1):39–49.
14. Manchester C, Atherton SL, Baker KA, Hadidi-Niakosari N, Modic MB, Tracy MF, et al. CNS Statement – Clinical Nurse Specialist Practice and Education [Internet]. National Association of Clinical Nurse Specialists NACNS; 2019. Available from: https://members.nacns.org/page/CNSState#
15. Karp T. Transforming organisations for organic growth: The DNA of change leadership. *J Change Manag.* 2006;6(1):3–20.

16. Nelson-Brantley HV, Ford DJ. Leading change: a concept analysis. *J Adv Nurs*. 2017;73(4):834–46.
17. Mauritz S. Resilience Definition – Resilience Academy: Learning Resilience [German]. Resilienz Definition – Resilienz-Akademie: Resilienz lernen [Internet].. 2022 [cited 2023 Feb 28]. Available from: https://www.resilienz-akademie.com/resilienz/
18. Scharte B, Thoma K. Resilience – Engineeringscience Perspective [German]. Resilienz – Ingenieurwissenschaftliche Perspektive. In: Wink R, editor. Multidisciplinary perspectives of resilience research [German] Multidisziplinäre Perspektiven der Resilienzforschung [Internet]. Wiesbaden: Springer Fachmedien; 2016 [cited 2023 Mar 2]. p. 123–50. (Studien zur Resilienzforschung). Available from: https://doi.org/10.1007/978-3-658-09623-6_6
19. Rolfe M. Resilience-enhancing leadership: orienting and trusting, energising and communicating [German]. Resilienzfördernde Führung: Orientieren und vertrauen, energetisieren und kommunizieren. In: Rolfe M, editor. Positive psychology and organisational resilience: coping better with stormy times [German] Positive Psychologie und organisationale Resilienz: Stürmische Zeiten besser meistern [Internet]. Berlin, Heidelberg: Springer; 2019 [cited 2022 Jul 2]. p. 159–98. Available from: https://doi.org/10.1007/978-3-662-55758-7_5
20. Hartwig A, Clarke S, Johnson S, Willis S. Workplace team resilience: A systematic review and conceptual development. *Organ Psychol Rev*. 2020:22;10.
21. Heller J, Gallenmüller N. Resilience coaching: Between 'hand-holding' for individuals and culture development for organisations [German]. Resilienz-Coaching: Zwischen „Händchenhalten" für Einzelne und Kulturentwicklung für Organisationen. In: Heller J, editor. Resilience for the VUCA world: Developing individual and organisational resilience [German] Resilienz für die VUCA-Welt: Individuelle und organisationale Resilienz entwickeln [Internet]. Wiesbaden: Springer Fachmedien; 2019 [cited 2021 May 20]. p. 3–18. Available from: https://doi.org/10.1007/978-3-658-21044-1_1
22. Alliger GM, Cerasoli CP, Tannenbaum SI, Vessey WB. Team resilience: How teams flourish under pressure. *Organ Dyn*. 2015;44(3):176–84.
23. Chapman MT, Lines RLJ, Crane M, Ducker KJ, Ntoumanis N, Peeling P, et al. Team resilience: A scoping review of conceptual and empirical work. *Work Stress*. 2020;34(1):57–81.
24. Meneghel I, Martínez IM, Salanova M. Job-related antecedents of team resilience and improved team performance. *Pers Rev*. 2016;45(3):505–22.
25. Son DM, Ham OK. Influence of group resilience on job satisfaction among Korean nurses: A cross-sectional study. *J Clin Nurs*. 2020;29(17–18):3473–81.
26. Amsrud KE, Lyberg A, Severinsson E. Development of resilience in nursing students: A systematic qualitative review and thematic synthesis. *Nurse Educ Pract*. 2019;41:102621–102621.
27. Rippstein-Leuenberger K, Mauthner O, Sexton JB, Schwendimann R. A qualitative analysis of the Three Good Things intervention in healthcare workers. *BMJ Open*. 2017;7(5):e015826.
28. Kornhaber RA, Wilson A. Building resilience in burns nurses: a descriptive phenomenological inquiry. *J Burn Care Res*. 2011;32(4):481–8.
29. Kutluturkan S, Sozeri E, Uysal N, Bay F. Resilience and burnout status among nurses working in oncology. *Ann Gen Psychiatry*. 2016;15:1–9.
30. Powell MJ, Froggatt K, Giga S. Resilience in inpatient palliative care nursing: a qualitative systematic review. *BMJ Support Palliat Care*. 2020;10(1):79–90.
31. Davey Z, Jackson D, Henshall C. The value of nurse mentoring relationships: Lessons learnt from a work-based resilience enhancement programme for nurses working in the forensic setting. *Int J Ment Health Nurs*. 2020.
32. Soucek R, Ziegler M, Schlett C, Pauls N. Resilience as an individual and organisational competence: Content-related development and promotion of the resilience of employees, teams and organisations [German]. Resilienz als individuelle und organisationale Kompetenz: Inhaltliche Erschließung und Förderung der Resilienz von Beschäftigten, Teams und Organisationen. In: Janneck M, Hoppe A, editors. Design competences for healthy work: Work design in the age of digitalisation [German] Gestaltungskompetenzen für gesundes Arbeiten: Arbeitsgestaltung im Zeitalter der Digitalisierung [Internet]. Berlin, Heidelberg: Springer; 2018 [cited 2021 May 20]. p. 27–37. (Kompetenzmanagement in Organisationen). Available from: https://doi.org/10.1007/978-3-662-54950-6_3
33. Riolli L, Savicki V. Information system organizational resilience. *Omega*. 2003;31(3):227–33.
34. Fooken I. Psychological perspectives of resilience researchPsychologische [German]. Perspektiven der Resilienzforschung. In: Wink R, editor. Multidisciplinary perspectives of resilience research [German] Multidisziplinäre Perspektiven der Resilienzforschung [Internet]. Wiesbaden: Springer Fachmedien; 2016 [cited 2023 Mar 8]. p. 13–45. (Studien zur Resilienzforschung). Available from: https://doi.org/10.1007/978-3-658-09623-6_2
35. Mauritz S. Resilience models in comparison – Resilienece Academy [German]. Resilienzmodelle im Vergleich – Resilienz Akademie [Internet]. 2020 [cited 2022 Jul 9]. Available from: https://www.resilienz-akademie.com/resilienzmodelle-im-vergleich/
36. Schreier M. Ways of doing qualitative content analysis: disentangling terms and terminologies [German]. *Forum Qual Sozialforschung Forum Qual Soc Res*. 2014;15(1).
37. Schreier M. Qualitative Content Analysis. In: Flick U, editor. The SAGE handbook of qualitative data analysis [Internet]. Los Angeles: SAGE; 2014. Available from: http://dx.doi.org/10.4135/9781446282243
38. Bohnsack R. Group discussion procedures and conversation analysis [German]. Gruppendiskussionsverfahren und Gesprächsanalyse. In: Reconstructive social research [German] Rekonstruktive Sozialforschung [Internet]. 9th ed. Verlag Barbara Budrich; 2020 [cited 2022 Jul 11]. p. 107–30. (utb-Titel ohne Reihe; vol. Reconstructive social research [German]. Rekonstruktive Sozialforschung). Available from: https://www.utb.de/doi/abs/10.36198/9783838585543-107-130
39. Przyborski A, Wohlrab-Sahr M. Qualitative Social Research: A Workbook [German]. Qualitative Sozialforschung: ein Arbeitsbuch. 4th ed. München: Oldenbourg Verlag; 2014. (Lehr- und Handbücher der Soziologie).
40. Kruse J. Interview forms – an overview – Group discussion proceedings [German]. Interviewformen – ein Überblick – Gruppendiskussionsverfahren. In: Kruse J, editor. Qualitative interview research [German] Qualitative Interviewforschung [Internet]. 2nd ed. Weinheim & Basel: Beltz Juventa; 2015 [cited 2021 Jun 19]. p. 147–204. Available from: https://content-select.com/de/portal/media/view/552557c6-9280-4108-8be1-4cc3b0dd2d03

41. Competence of the Cantonal Ethics Committee [German]. Zuständigkeit der Kantonalen Ethikkommission [Internet]. Kanton Zürich. [cited 2022 Jun 17]. Available from: https://www.zh.ch/de/gesundheit/ethik-humanforschung/zustaendigkeit-kantonale-ethikkommission.html
42. Jackson D, Firtko A, Edenborough M. Personal resilience as a strategy for surviving and thriving in the face of workplace adversity: a literature review. *J Adv Nurs*. 2007;60(1):1–9.
43. McAllister M, McKinnon J. The importance of teaching and learning resilience in the health disciplines: A critical review of the literature. *Nurse Educ Today*. 2009;29(4):371–9.
44. Benfer-Breisacher A. „"Resilience in care" – right from the start! [German]. Resilienz in der Pflege" – von Anfang an! *PADUA*. 2018;13(3):195–202.
45. Ghassemi AE, Zhang N, Marigliano E. Concepts of courage and resilience in nursing: A proposed conceptual model. *Contemp Nurse*. 2019;55(4–5):450–7.
46. Senek M, Robertson S, Ryan T, King R, Wood E, Taylor B, et al. Determinants of nurse job dissatisfaction – findings from a cross-sectional survey analysis in the UK. *BMC Nurs*. 2020;19(1):88.
47. Bernard N. Resilience and professional joy: A toolkit for nurse leaders. *Nurse Lead*. 2019;17(1):43–8.
48. Rolfe M. Resilient teams: flexible, able to deal with conflict and tolerant in their cooperation [German]. Resiliente Teams: Flexibel, konfliktfähig und tolerant in der Zusammenarbeit. In: Rolfe M, editor. Positive psychology and organisational resilience: coping better in stormy times [German] Positive Psychologie und organisationale Resilienz: Stürmische Zeiten besser meistern [Internet]. Berlin, Heidelberg: Springer; 2019 [cited 2022 Jul 15]. p. 199–244. (Positive Psychologie kompakt). Available from: https://doi.org/10.1007/978-3-662-55758-7_6
49. Wellensiek SK. Interaction within the team and at interfaces [German]. Das Zusammenspiel im Team und an Schnittstellen. In: Handbook training in resilience [German] Handbuch in Resilienztraining [Internet]. 2nd ed. Weinheim Basel: Beltz; 2017. p. 275–307. Available from: https://www.beltz.de/fachmedien/training_coaching_und_beratung/produkte/details/35209-handbuch-resilienztraining.html
50. Rolfe M. Resilient organisations: What makes companies crisis-proof, healthy, agile and effective [German]. Resiliente Organisationen: Was Unternehmen krisenfest, gesund, agil und wirksam macht. In: Rolfe M, editor. Positive psychology and organisational resilience: coping better in stormy times [German] Positive Psychologie und organisationale Resilienz: Stürmische Zeiten besser meistern [Internet]. Berlin, Heidelberg: Springer; 2019 [cited 2022 Jul 16]. p. 41–100. (Positive Psychologie kompakt). Available from: https://doi.org/10.1007/978-3-662-55758-7_3
51. Edmondson A. Psychological safety and learning behavior in work teams. *Adm Sci Q*. 1999;44(2):350–83.
52. Buerhaus PI, Donelan K, Ulrich BT, Norman L, DesRoches C, Dittus R. Impact of the nurse shortage on hospital patient care: Comparative perspectives. *Health Aff*. 2007;26(3):853–62.
53. Körner M, Göritz AS, Bengel J. Healthcare professionals' evaluation of interprofessional teamwork and job satisfaction / Evaluation der Teamarbeit und der Arbeitszufriedenheit von Gesundheitsfachberufen. *Int J Health Prof*. 2014;1(1):5–12.
54. de Souza GC, Peduzzi M, da Silva JA, Carvalho BG. Teamwork in nursing: restricted to nursing professionals or an interprofessional collaboration? *Rev Esc Enferm USP*. 2016;50:642–9.
55. Piers RD, Versluys K, Devoghel J, Vyt A, Van Den Noortgate N. Interprofessional teamwork, quality of care and turnover intention in geriatric care: A cross-sectional study in 55 acute geriatric units. *Int J Nurs Stud*. 2019;91:94–100.
56. Hojat M, Nasca TJ, Cohen MJM, Fields SK, Rattner SL, Griffiths M, et al. Attitudes toward physician-nurse collaboration: U cross-cultural study of male and female physicians and nurses in the United States and Mexico. *Nurs Res*. 2001;50(2):123–8.
57. Aase I, Hansen BS, Aase K, Reeves S. Interprofessional training for nursing and medical students in Norway: Exploring different professional perspectives. J *Interprof Care*. 2016;30(1):109–15.
58. Leonard M, Graham S, Bonacum D. The human factor: the critical importance of effective teamwork and communication in providing safe care. *Qual Saf Health Care*. 2004;13 Suppl 1:i85-90.
59. Thomas EJ, Sexton JB, Helmreich RL. Discrepant attitudes about teamwork among critical care nurses and physicians*. *Crit Care Med*. 2003;31(3):956–9.
60. Currie G, Finn R, Martin G. Role Transition and the interaction of relational and social identity: New nursing roles in the English NHS. *Organ Stud*. 2010;31(7):941–61.
61. Eriksson N, Müllern T. Interprofessional barriers: A study of quality improvement work among nurses and physicians. *Qual Manag Health Care*. 2017;26(2):63–9.
62. Niezen MGH, Mathijssen JJP. Reframing professional boundaries in healthcare: a systematic review of facilitators and barriers to task reallocation from the domain of medicine to the nursing domain. *Health Policy Amst Neth*. 2014;117(2):151–69.
63. Heinen M, van Oostveen C, Peters J, Vermeulen H, Huis A. An integrative review of leadership competencies and attributes in advanced nursing practice. *J Adv Nurs*. 2019;75(11):2378–92.
64. Frankel A, Haraden C, Federico F, Lenoci-Edwards J. A framework for safe, reliable, and effective care [Internet]. White Paper. Cambridge, MA: Institute for Healthcare Improvement and Safe & Reliable Healthcare. 2017. Available from: http://www.ihi.org/
65. Kim S, Lee H, Connerton TP. How psychological safety affects team performance: mediating role of efficacy and learning behavior. *Front Psychol*. 2020;11.
66. Wolters Kluwer. The Nursing Shortage Demands Boldness and Creativity [Internet]. Wolters Kluwer; 2022. [cited 2022 Jul 12]. Available from: https://www.wolterskluwer.com/en/expert-insights/the-nursing-shortage-demands-boldness-and-creativity-now
67. Shin J, Taylor MS, Seo MG. Resources for change: The relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Acad Manage J*. 2012;55(3):727–48.
68. Harvey G, Kitson A. PARIHS revisited: from heuristic to integrated framework for the successful implementation of knowledge into practice. *Implement Sci*. 2016;11(1):33.
69. Holloway I, Wheeler S. Qualitative nursing research: Fundamentals of qualitative approaches in nursing care [German]. Qualitative Pflegeforschung: Grundlagen qualitativer Ansätze in der Pflege [Internet]. Wiesbaden: Ullstein Medical; 1998. 282 p. Available from: https://www.worldcat.org/de/title/75822539