Discussion Paper Series

Building Resilience through Experiential Learning: A Study of Health Professionals

Discussion Paper n. 02/2025

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ISSN 3035-5567

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DP N. 02/2025
May 2025

Purpose

The study examines how healthcare professionals' experiential learning during crisis periods at work unfolds and how it contributes to the building of their resilience. While previous studies analyzed the linkages between learning at work and the resilience of healthcare professionals, we complement these studies by offering insights about experiential learning and its relation to resilience that occurs both on the job – in highly stressful environments – and parallelly outside work, in an intra-professional university setting.

Design/methodology/approach

We analyzed inductively the diary data that captures the lived experiences of healthcare professionals with the aim of grounded theory building. Observing the dynamics among the aggregated dimensions that emerged allowed us to understand the experiential learning process and its relation to resilience.

Findings

The analysis allowed us to generate a theoretical model that depicts how the learning process is characterized by experiential processes at work and outside of work in an intra-professional course setting, acting as an enabler of healthcare professionals' resilience. The model identifies components of the experiential learning process contributing to the development of two types of resilience: adaptive resilience and emotional resilience. Our results further show that these two types of resilience are interconnected rather than separate.

Originality

Our study provides novel insights related to the dynamic relationship of two forms of resilience, and provides evidence into how resilience might be developed in healthcare professionals through an experiential learning process and as a means of dealing with future crises.

Keywords: Resilience, experiential learning, healthcare professionals.

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This study was funded by the European Union - NextGenerationEU, in the framework of the GRINS - Growing Resilient, INclusive and Sustainable project (GRINS PE00000018 - CUP D13C22002160001). The views and opinions expressed are solely those of the authors and do not necessarily reflect those of the European Union, nor can the European Union be held responsible for them.

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Declarations of interest:

This study was funded by the European Union - NextGenerationEU, Mission 4, Component 2, in the framework of the GRINS -Growing Resilient, INclusive and Sustainable project (GRINS PE00000018 – CUP J33C22002910001). The views and opinions expressed are solely those of the authors and do not necessarily reflect those of the European Union, nor can the European Union be held responsible for them.

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Introduction

Healthcare systems and professionals working in their settings are used to being exposed to unprecedent challenges at work, requiring them to adapt and respond effectively in high-pressure situations. These challenging situations at work test their abilities to cope with crisis and ultimately their physical and mental strength in overcoming this kind of situations (Baskin and Bartlett, 2021). The sense of urgency was not only related to the need for managing responsibilities at work but at the same time to the need for balancing the work with personal safety and safety of their families (Chua et al., 2004), hence bearing a heavy emotional burden (Bozdağ and Ergün, 2020).

In such crisis driven contexts, the ability to actually continue working became critical for sustaining healthcare services. While this required knowing how to apply the expertise related to care concretely, at the same time this knowledge was supported with the capacity to adapt, resist, not to give up to despair- capacity to be resilient. And it is precisely the capacity to adapt and delivery of high-quality care, that make part of the essential aspect of resilience definition: "*capacity to adapt to challenges and changes at different system levels, to maintain high quality care*" (Ree and Haraldseid-Driftland, 2022, p.2) and for the purpose of our

research we add to this also the "*capacity of bounce back*" to maintain the service (Wildavsky, 1998, p.77). In order to develop these capacities, learning and adapting have been found to be crucial, since they can trigger the reseilience potential (Hollnagel, et al., 2018, Wiig et al., 2020).

In this study we are interested in the learning that contributed to the process of resilience building of health professionals during the periods of crisis at work. More specifically, we are looking at the process of resilience building through the lenses of experiential learning as captured by the healthcare professionals' perceptions, during the Covid-19 pandemic.

Against this background, previous research on resilience stressed the importance of learning in enabling individuals to effectively cope with stressful events at work (McAllister and McKinnon, 2021). However, previous studies that have explored the linkage between experiential learning and resilience in management and among healthcare professionals (McAllister and McKinnon, 2021), are only starting to grasp from an explorative point of view these processes and it is a body of a literature that is still in development (Thomas and Suresh, 2022; Garcia-Pereze et al., 2023). In this literature, there is space for explorative studies on how healthcare professionals engage in experiential learning under extreme conditions, and these, due to the involvement or uncertainty, risk and need for experimentation are a solid ground for the exploration of both experiential learning and the process of resilience building in relation to it.

Based on this, in our study we aim to answer two research questions:

1. How does the experiential learning of healthcare professionals evolve during a crisis?
2. How does this process contribute to the development of resilience among healthcare professionals?

To answer our research questions, we look into how healthcare professionals experience learning in a multi-layer systemic environment where interactions occur- both on the job,

during the peak of the pandemic, and in a parallel intra-professional university setting. The intra-professional context, both at work and in academic settings, as described by Wenger (1998), supports the notion of communities of practice, where professionals engage collectively in reflective and experiential learning. The at – work setting is also relevant, where we explore how experiential learning contributes to resilience-building in the high-pressure environments faced during emergency at work. By focusing on experiential learning in both these contexts, we aim to provide a more comprehensive understanding of the mechanisms of resilience-building, highlighting not only the professional tangible knowledge required but also the emotional and cognitive strategies developed in supportive academic and work settings.

Method-wise, the study employed an inductive qualitative approach, utilizing diary data collected from healthcare professionals during the pandemic period, who participated in an extra-curricular managerial program conducted by the Sant'Anna School of Advanced Studies and its Management and Health Laboratory. The diaries, as reflective and learning tools (Hägg, 2021) provided rich, first-hand accounts of participants' experiences, capturing their reflections on the challenges faced and the adaptive strategies employed. At the same time, diaries are serving as a learning method based on experiential pedagogical approach (Roberts, 2012, 2015, Hägg, 2021).

With respect to our results, the analysis allowed us to generate a theoretical model that depicts how the learning process is characterized by experiential processes at work and outside of work in an intra-professional course setting, acting as an enabler of healthcare professionals' resilience. This is also our main theoretical contribution to the fields of healthcare management and human resources, learning, and resilience. The model identifies four components of the experiential learning process that are characterized by: change management, learning culture, crisis-driven innovation, and commitment to a common purpose contributing to the development of two types of resilience: adaptive resilience and emotional resilience. Our

results further show that these two types of resilience are interconnected rather than separate. Therefore, this provides much-needed insight into how resilience might be developed in healthcare professionals through a learning process and as a means of dealing with future crises.

Literature review

By building on the call that inductive studies do not require extensive literature review (Gioia, 2013) we offer the insights into the main theoretical developments with regard to the experiential learning of health professionals and their resilience, without extensive elaboration. Resilience in the context of healthcare management has been studied (Hollnagel et al., 2007; Rubbio et al., 2020) and in particular as enabled by the digitalization during the pandemic period (Rubbio and Bruccoleri, 2023; Abdel-Basset et al., 2021; Lee and Lee, 2021; Secundo et al., 2021).

Previous studies have emphasized that contextual factors play a significant role in shaping how experiential learning occurs, especially under conditions of stress and uncertainty (Cohen et al., 2020; Hägg and Kurczewska, 2020). For example, organizational culture was found to be related to learning and the capacity to enhance adaptability among healthcare teams during the pandemic (Alonazi, 2021). Moreover, digital and remote training environments have been shown to provide critical support for learning of healthcare professionals by stimulating team work and helping resilience under conditions of isolation and resource constraints (Blake et al., 2020).

Previous studies also addressed educational strategies for building resilience in healthcare, emphasizing the importance of combination of learning and organizational factors (Forsgren et al.,2022, McAllister and McKinnon, 2009). Forsgren et al., 2022 for example found that continuous learning feeds back to the organizational capacity in resilience-building. The study emphasizes the need for health systems to learn from past experiences and adapt their strategies

for future crises. McAllister and McKinnon (2009) find that resilience can be also thought so as to equip the healthcare professionals with the emotional and cognitive demands of their work. They find that developing resilience through education is argued to improve overall job satisfaction which in turn helps the organization.

Experiential learning however, as proposed by Kolb (1984), involves learning through direct experience, and as such it is highly relevant to healthcare workers navigating emergencies. Despite this fact, there is scarce of current research on the topic of experiential learning of healthcare professionals during the pandemic and its relation to resilience. Some of the very few studies discussing the experiential learning during the pandemics, have highlighted the benefits of education in promoting resilience among participants (Bulter, 2022, Ickes and McMullen, 2016), including the healthcare students, of an intra-professional educational practice (Nagel et al., 2024, Fewster-Thuente and Batteson, 2018). Butler, 2022 found that the participants and course organizers adapted to the pandemics emergency and this not only ensured safety but also promoted a sense of community that helped the students with mental health aspects of the pandemic (Bulter, 2022). While this study concludes that learning models can serve as valuable frameworks for fostering resilience, there is so far limited understanding of how experiential learning during crisis evolves in healthcare professionals and how it helps build their resilience, questions we care about in our study.

Methods

Empirical setting

The empirical setting of the study is based in two complementary locations, the university course that was attended during the Covid19 pandemic by healthcare professionals coming from various backgrounds in medicine, and at the same time their respective work settings, placed in Italian regions of Tuscany and Sardinia. The healthcare professionals attended the

intra-professional managerial course entiteled: “Management training course for managers of complex structures and aspiring health directors”, organized by the Management and Health Laboratory of Sant’ Anna School of Advanced Studies, on behalf of the Tuscany Region. Extraordinary the course opened also to the participants from other regions of Italy, due to the interests of the healthcare staff and accepted two more participants from the Region of Sardinia. A total of 50 students were admitted to the training program, divided into two classes: one class with 26 students (Class 1) and the other with 24 students (Class 2), involving 50 professionals in total. Of these, 49 completed the course, as one participant from Class 2 withdrew due to personal reasons.

The teaching program had to adapt to the outbreak of the pandemic, which severely impacted Italy starting in February 2019, leading to the first nationwide lockdown on March 10, 2020, and halting all in-person activities. The pandemic’s impact was even more significant for the course participants, as they were on the front lines in the fight against the virus.
For this edition, particularly for Class 2, the challenge arose to almost entirely redesign the program, shifting from in-person to online synchronous lessons.

- For Class 1, only the final module and the closing day were delivered remotely.
- For Class 2, as many as five modules were delivered online.

Source of data

The source of data for this paper is a diary- project work that course participants delivered, by working in a group. Diary is a rich source of data, and when conducted during the period of study, it serves as a monument to experiential learning practice, which allows students to engage in reflection and bridge knowing with doing (Hägg, 2021). In this psecific case, the diary aimed to collect analyses, suggestions, and proposals from the direct experience of those who, as professionals in the National Health System organizations, faced this pandemic.

Participants were asked to focus on one or more of the following topics:

- Description of how work processes changed during this emergency compared to one or more processes they were involved in.
- Lessons learned from the experience related to a care pathway or process they were involved in.
- Description of their personal work experience during the pandemic.

Contributions could be individual or collaborative (up to 3 participants per group). The expected length was between 1,500 and 3,000 words. The breakdown of participants who wrote the diary that we analysed, is detailed in Tables 1 and 2 below.

Table 1 here

Table 2 here

Data analysis

The diary data has been analyzed inductively, following the Gioia (2013) method. This analysis followed several steps. The first author read the diary and coded inductively the first order codes, that are captured with the voices of the informants. The first order codes that initially counted many entries, were reduced to a manageable number (136 open ended codes). Following this the codes were grouped based on their meaning in the second order categories that still captured the voices of the informants but were closer to the theoretical language. Since the second author worked as a coordinator of the study, she remained outside of this coding procedure, to ensure objectivity. However, since she also had unique insights in the dynamics and relations of the course, once the first author obtained the second order categories, these were discussed together. Following this, the first author went back to the coding and completed the classification of the second order categories into the aggregate dimensions. We, as an author team then discussed the dynamics between the aggregate dimensions and how these can be the

related to the existing literature to understand a grounded but also theory -informed understanding of the process.

Results

In the results section we present firstly the aggregate dimensions that emerge with respect to the experiential learning, as reported in the Table 3. Following this, we present how these aggregate dimensions contribute to building of health professionals' resilience.

Based on our analysis, four aggregate dimensions emerge with respect to the experiential learning evolution: Change Management, Learning culture, Crisis-Driven Innovation, and Commitment to a Common Purpose.

Table 3 here

Change Management

The first aggregate dimension is change management, and it highlights the perception of the professionals about the need to rapidly adapt and learn in response to changes due to the pandemic. This aggregate dimension is characterized by the two themes: adaptation to change in light of the pandemic and resource management.

Adaptation to Change in light of the pandemic as a theme emphasizes how professionals needed to swiftly develop new skills and competencies to meet new requirements and adapt to a new situation provoked by the pandemic. They had to learn about how to address newly emerging needs and provide rapid even structural reforms so as to ensure continuity of their service: " *Come FO, ci siamo trovati a dover mettere velocemente in atto una serie di cambiamenti organizzativi volti a soddisfare le nuove necessità emergenti ma continuando a garantire anche le attività quotidiane indispensabili e non differibili."*

Ability to manage and leverage resources was another learning aspect that is part of the change management and its second order theme. For example, the shortage of personal protective equipment forced the organization to find innovative solutions, such as producing disinfectant gel internally: " *...perciò le farmacie ospedaliere hanno cercato, dove presenti, i laboratori galenici, per sopperire, almeno in parte, a tale mancanza.*" Furthermore, the pandemic exposed need to rediscover and learn about the resources related to the IT infrastructure, which were already existing but not being used: "*L'utilizzo della tecnologia informatica ha supportato tutta l'organizzazione sanitaria attraverso un maggiore uso dei canali digitali e la riscoperta dell'utilità di strumenti che prima di questa emergenza erano usati raramente*."

Learning culture

The second aggregate dimension is *Learning culture*, which reflects the process that of learning related to personal and shared experiences through which healthcare professionals learned during the pandemic. Three key themes emerged under this dimension: intra-professional peer learning, collective work and support, and learning about communication and coordination.

Intra-Professional Peer Learning captures the perceptions of healthcare professionals about the importance of sharing knowledge with professionals from different backgrounds, both at work and in an academic setting. In these processes the professionals perceive that they could engage in reflective learning and share their experiences with intra professional peers which are seen as complementary to theirs. As one participant noted: "*I have therefore learned and understood (during the academic course) how a shared approach to the problem (with medical professionals from other fields) can be a key pathway. I hope that the pandemic, in addition to being a great global tragedy, will truly serve as an opportunity to bring together public health doctors and veterinarians, with a focus on collecting health data on humans and animals, which together can aid in future prevention efforts..* " Another participant wrote

down: "*The network we established has been a source not only of support but also of rapid and interdisciplinary communication of best practices, anticipated challenges, and creative solutions adopted elsewhere."*

Experience of the learning in intra-profesonal academic setting, that was evolving parallely to the developments at work during the pandemic, served also as an inspiraton on how to handle the unexpected situations and face these changes in light of uncertainty, something that participants took with them to their daily job*: "The course, shared with the faculty through an equitable negotiation between healthcare learners, with their own urgencies, and university teaching staff, facing the challenges inherent in education at every level, was for me a profound example of crisis management and change management. It inspired me to rethink and adapt my daily work."* The participants also reflected about the importance of intra-professional environment at work as important during the emergency period: *"Certainly, in stressful situations such as the Covid emergency, teamwork and interdisciplinary exchange are facilitated by the fact that the entire system converges toward a single goal. In contrast, under "normal" conditions, although all healthcare activities are aimed at ensuring care for citizens, each healthcare professional operates within a micro-reality with intermediate objectives that differ from those of others. This sometimes makes collaboration more challenging."*

Collective work and support is a second theme that makes part of the learning culture, that has emerged as an important element of the process of learning, as captured by this quote: "*We have been a team that worked by making the best use of different skills*." Collective work and support were particularly evident in providing both technical but also emotional support to the medical staff. The sharing of good practices and personal experiences also contributed to the environment where work is done collectively, to be able to better address the emergency.

Learning about Communication and Coordination of group emerged as a third theme related to the collaborative learning. These were discussed as necessary for maintaining the dialogue, that helped also the creation of organizational culture that is supportive of learning about challenges and solutions, so as to overcome the difficulties during the pandemic. Different tools were used and being familiarized with so as to operationalize the communication and coordination during the pandemics, mostly the digital tools, that helped bridge the gap in communication, but also protocols and ad hoc informal instruments that would foster communication and coordination of a group.

Crisis-Driven Innovation

The third aggregate dimension is entitled Crisis-Driven Innovation and it aims at capturing how healthcare professionals and organizations learnt to be innovative to address the challenges imposed to their work by the pandemic. This dimension is composed out of two themes: innovation and new approaches, and safety and risk management.

Innovation and new approaches is a theme about new strategies and methods developed by healthcare professionals to address work related needs during the crisis and because of the crisis. For example, in-house production of supplies in collaboration with partners, beyond normal working hours and common working duties, emerged as one of the solutions to the shortage of resources: "*L'allestimento galenico di gel alcolico ha impegnato il laboratorio galenico ben oltre le sue normali possibilità e orari lavorativi, ma con la collaborazione di altre professionalità (TSLB) è riuscito a garantire un piccolo ma costante approvvigionamento a tutti gli altri ospedali della ASL TC*." On the other hand also new protocols were rapidly designed and implemented to adapt to the situation, ensuring continuity in patient care and organizational operations. These included updated procedures for patient management, infection control, and the use of medical equipment. The professionals reflected continuously on the need to be adaptive and their efforts, together with

their team to invent the most efficient approaches, to deal with the emergency and adapt and learn quickly.

Safety and Risk Management is the second theme related to the aggregate dimension that relates to the innovative methods for managing the crisis. Participants emphasized the importance of designing and implementing novel strategies to mitigate risks associated with infection spread and operational disruptions. Operational safety was maintained through strict control activities, including monitoring compliance, conducting regular audits, and improving workplace hygiene practices.

Commitment to a Common Purpose

The fourth aggregate dimension is Commitment to a Common Purpose and it emphasizes the elements that helped healthcare professionals be committed to work despite the huge amount of unpredictability and difficulty. The themes that emerged under this dimension are group solidarity and sense of duty.

Group Solidarity is a first theme of this aggregate dimension, and it relates to the participants perception about the importance of group as a catalyst for emotional coping during the pandemic. In this respect the data shows that healthcare professionals leaned on their teams and colleagues to create a sense of unity and shared purpose during the pandemic. This solidarity fostered a collaborative learning space, where mutual understanding led to solidarity of the group: As one participant shared: “We must absolutely rediscover the importance of solidarity. "*Woe to anyone who is alone: if they fall, there is no one to lift them up*.”

Sense of duty is the second theme that emerged in relation to this aggregate dimension, as a driving force of mental and physical dedication in moments of crisis. One of the participants described: " *Only the professionalism and sense of duty of all the staff made it possible to (...)*

respond optimally to clinical needs, providing test results within the appropriate timeframes (...).”

Adaptive and emotional resilience

We now proceed with our results to depict how the experiential learning process identified in the aggregate dimensions and their respective second order themes described above, lead to the development of two types of resilience: adaptive resilience and emotional resilience. What we observed is that adaptive resilience emerged as supported by the change management and crisis- driven innovation aggregate dimensions and emotional resilience emerged in processes related to learning culture development and commitment to common purpose. While the catalyst for the emergence of the resilience is in both cases the crisis- Covid-19 pandemic, we observe that the adaptive resilience seems to be reactive- it comes as a reaction to the external organizational shocks, and it manifests in the ability to adapt to new circumstances and operationalize innovative solutions needed to ensure the continuity and efficiency at work. As illustrated by the following quote about the relation between crisis driven innovation and adaptive resilience: “*With no additional staff available and unable to reduce the UFA shift without risking errors or causing significant disruption to oncological patients undergoing treatment, we optimized the scheduling of gel production by leveraging the expertise of the biomedical laboratory healthcare personnel (TSLB) working in the UFA.”*

Emotional resilience on the other hand is triggered by the processes related to the learning culture development and commitment to a common purpose aggregate dimension, since these created a strong sharing working culture and intra-professional personal relationships. As such this type of resilience seems to be proactive rather than reactive, in so far it exists as deeply rooted into the behavior of the professionals, from before the pandemic, as captured by one of the quotes: “*Heroes? Warriors? Despite the wartime rhetoric, I prefer to think of us as*

individuals who, driven by a deep love for caring for others, endure, face challenges, and strive to overcome them together, sharing the still limited knowledge we have."

Discussion and conclusion

Based on our results, we propose the Figure 1 in which the experiential learning process described by the four dimensions leads to a dual resilience model, where both the organization (processes and innovations) and the people (emotional and social support) should be reinforced. This dual resilience ensures that healthcare professionals can sustain operations during crises and recover effectively afterward.

Figure 1 here

In our paper we asked two research questions.

1. How does the experiential learning of healthcare professionals evolve during a crisis?
2. How does this process contribute to the development of resilience among healthcare professionals?

In response to the first question, our findings demonstrate that experiential learning during the crisis evolved through: Change Management, Learning Culture, Crisis-Driven Innovation, and Commitment to a Common Purpose. These dimensions represent the learning mechanisms but also the channels through which healthcare professionals adapted and responded to challenges and redefined their work processes. We find also that experiential learning provided a framework for professionals to overcome crisis-driven challenges. It allowed professionals to draw on real-time experiences, both their own and those of their peers. This is in line with previous studies who found that continuous and collaborative learning from both poisitve and negative events is a crucial aspect of learning to be adaptive (Haraldseid-Driftland et al., 2022).

Regarding the second research question, we found that the experiential learning process contributed to the development of two types of resilience: adaptive resilience and emotional resilience. Adaptive resilience, supported by Change Management and Crisis-Driven Innovation, emerged as a reaction to the need to adress external pressures and ensure work continuity and service delivery. This resilience was seen through professionals capacity to rapidly develop innovative solutions, allocate resources. Previous studies found that indeed adaptability is the core aspect of the notion of resilience particularly in the situations of uncertanty and change (Lengnick-Hall et al., 2011, Floreze-Jiminez et al., 2024). Also, in line with our results, research discussed how crisis-driven innnovation and management support the adaptive resilience (Williams et al., 2017) especially during the period of response to the crisis (Youssef and Luthans, 2007).

Emotional resilience, on the other hand, was fostered through the Learning Culture and Commitment to a Common Purpose dimensions. It reflected in the proactive cultivation of relationships, solidarity, and shared purpose. This fidnings is in line with previous studies who found that emotional resilience should be proactively shaped for better outcomes in healthcare workers stress management (Vitorino et al., 2024).

Crucially, these two forms of resilience were found to foster each other. Adaptive resilience relied on the emotional strength provided by supportive relationships, while emotional resilience was reinforced by the operational solutions created through innovations. Together, these findings highlight the importance of a dual resilience model that integrates adaptability with interpersonal solidarity to enable healthcare professionals to respond effectively to crises. And this ultimately both the theoretical and practical contribution of our study.

To conclude, our study underscores the potential of experiential learning in building resilience among healthcare professionals. It suggests that environments—both academic and workplace-based—that promote time for exchange and reflection, collaborative learning, and

problem-solving can prepare healthcare professinals to better navigate future crises. Furthermore, the findings emphasize the need for healthcare organizations and their human resources management to support both the emotional well-being of their workforce and the structural adaptability or ability to commit to intrapreneurship processes, as important aspectes of holistic approach to reslience.

Future research could extend these insights by examining the application of the dual resilience and experiential learning model in other high-stress healthcare and academic contexts, to improve or argue for the generalzibility of our findings. Indeed, the limitation of our paper is related to the source of data that relies on one specific geographical setting. Furthemore, diary as a method could be complemented with additional focus groups and interviews, as part of the future research studies.

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