University of Reading

A grounded theory approach to exploring the experiences of community pharmacists in Lebanon to a triple whammy of crises: the Lebanese financial crisis, COVID-19 pandemic, and the Beirut port explosion

Article

Published Version

Creative Commons: Attribution-Noncommercial-No Derivative Works 4.0

Open Access

Bajis, D., Bajis, S., Akel, M., Pena Bizama, A. and Chaar, B. (2023) A grounded theory approach to exploring the experiences of community pharmacists in Lebanon to a triple whammy of crises: the Lebanese financial crisis, COVID-19 pandemic, and the Beirut port explosion. Exploratory Research in Clinical and Social Pharmacy, 9. 100217. ISSN 2667-2766 doi: 10.1016/j.rcsop.2022.100217 Available at https://reading-pure-test.eprints-hosting.org/121855/

It is advisable to refer to the publisher's version if you intend to cite from the work. See Guidance on citing.

To link to this article DOI: http://dx.doi.org/10.1016/j.rcsop.2022.100217

Publisher: Elsevier

University of Reading

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the End User Agreement.

www.reading.ac.uk/centaur

CentAUR

Central Archive at the University of Reading

Reading's research outputs online

Exploratory Research in Clinical and Social Pharmacy 9 (2023) 100217

Contents lists available at ScienceDirect

Exploratory Research in Clinical and Social Pharmacy

journal homepage: www.elsevier.com/locate/rcsop

A grounded theory approach to exploring the experiences of community pharmacists in Lebanon to a triple whammy of crises: The Lebanese financial crisis, COVID-19 pandemic, and the Beirut port explosion

Dalia Bajis [a,e,*], Sahar Bajis [b], Marwan Akel [a,c,f], Alicia Pena Bizama [d], Betty Chaar [e]

[a] International Pharmaceutical Federation, the Netherlands
[b] The Kirby Institute, UNSW Sydney, Sydney, New South Wales, Australia
[c] Lebanese International University, School of Pharmacy, Beirut, Lebanon
[d] University of Reading, Reading, United Kingdom
[e] The University of Sydney, School of Pharamcy, Faculty of Medicine and Health, Sydney, New South Wales, Australia
[f] Institut National de Santé Publique d'Épidémiologie Clinique et de Toxicologie-Liban (INSPECT-LB), Beirut, Lebanon

ARTICLE INFO

Keywords:
Pharmacist
Resilience
Coping
Pandemic
Financial collapse
Health system
Pharmacy practice
Sustainability

ABSTRACT

Background: Community pharmacists like other health care professionals in Lebanon have been grappling with a series of multifaceted, country-wide and ongoing challenges that have formed the impetus for this research. We aimed to explore experiences of community pharmacists in Beirut, Lebanon, during three concurrent crises in 2020: the Lebanese financial crisis, COVID-19 pandemic and the Beirut Port explosion.

Methods: A qualitative approach using a constructivist grounded theory methodology was employed. Between October 2020 and February 2021, semi-structured interviews were conducted with purposefully recruited community pharmacists working in Beirut. All interviews were conducted virtually, and data collected were analysed using inductive reasoning, with open coding and concept development.

Results: Thirty-five participants (63% female, mean age 30) were interviewed online. Emergent categories and theoretical concepts included 1. painting the picture - pharmacists describing the context/setting; 2. impact of the crises - on community pharmacists, the profession, patients and the system; 3. response to the crises - of community pharmacists, the profession (+ practice), patients and the system; and 4. need for advocacy and leadership. A theory was developed about "unsustainable resilience" in the scheme of ongoing crises.

Conclusions: The findings revealed a shared sense of futility and despair among pharmacists collectively as a profession, as well as a sense of unsustainable healthcare systems in Lebanon, and environments impacting on the resilience of pharmacists at an individual level. A call for action is needed for urgent sustainable structural and financial reforms, advocacy and planning for future resilient systems, as well as a resilient pharmacy profession and protection of pharmacists' wellbeing and livelihood.

1. Background

In 2020, the world was consumed with catastrophic events unfolding with the onset of the Covid19 pandemic.[1] No country was spared, including Lebanon, an Eastern Mediterranean country, already crippled by a financial crisis threatening the livelihood and well-being of its entire population.[2]

Renowned for its great beauty, Lebanon is equally renowned for its multitude of misfortunes over many decades. Incessant civil unrest and internal warfare causing constant chaos and poverty, in addition to external warfare causing tragic loss of lives and land, have taken their toll over the years.[3] Yet, these long-standing issues paled in significance in comparison to the year 2019, when an unprecedented financial crisis hit Lebanon like a tsunami.[3]

October 2019 marked the sudden and steep downfall in the value of the local currency (Lebanese Lira - LL) against the $US to a fraction of its standard value.[4] The Lebanese currency tumbled from the fixed rate of 1500 LL against the $US for the past 3 decades to losing around 90% of its value.[5] The Lebanese Lira has been described as the "most undervalued currency in the world".[6] To add to this, limits were implemented on any receipt or exchange of foreign currency, which collectively affected the salaries of all government (such as teachers, immigration officers, army personnel, police, etc) as well as privately paid services.[4] Banks denied citizens access to their assets, and whole empires of local businesses collapsed under the

* Corresponding author at: International Pharmaceutical Federation (FIP), Andries Bickerweg 5, 2517 JP The Hague, the Netherlands.
E-mail address: dalia@fip.org (D. Bajis).

http://dx.doi.org/10.1016/j.rcsop.2022.100217
Received 5 September 2022; Received in revised form 6 December 2022; Accepted 15 December 2022
2667-2766/© 2023 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

pressure.[7] The people of Lebanon, of all ages and diversities, revolted against these measures,[4] yet the Lebanese financial crisis continued, causing ongoing economic failure affecting the entire nation from October 2019, further exacerbated by both the COVID-19 pandemic (2020) and the catastrophic 4th of August 2020 Beirut Port explosion,[8] in quick succession.

In March 2021, 78% (three million people) of the Lebanese population was estimated to be in poverty.[9] In November 2019, Banque du Liban (BDL: Bank of Lebanon), also known as the Central Bank of Lebanon, reduced its subsidy of the import of medicines to 85% of the foreign currency needed for pharmaceutical products at the official fixed rate of 1507.50 LL.[10] This meant that importers were forced to buy the remaining 15% of foreign currency on the black market at the unofficial exchange rate, thereby driving up medication prices.[10] However, with the Lebanese Lira losing over 90% of its value and the depletion of foreign-currency reserves, the BDL warned it was obliged to remove all subsidies from most medicines, meaning importers had to charge full price to pharmacists and patients.[11] Lebanon imports approximately 95% of its pharmaceutical products, spending more than US$ 1 billion annually.[11]

Food prices increased by a staggering 400% between January and December 2020. Revised food survival and minimum expenditure basket (SMEB) recorded a 21% increase between March and April 2021.[12] The overall cost is four times higher than at the start of the crisis.[12] At the end of 2020, 19% of Lebanese nationals reported the loss of their main sources of income.[12] Assessments indicate unemployment among migrants was up to 50%, with significant job losses in final quarter of 2020.[12]

The number of Covid cases was disproportionate to its small population of just over 6.5 million.[13] The Lebanese people tried valiantly to fight Covid, following the World Health Organization (WHO) guidelines as best as possible, only to be challenged with lack of resources and healthcare facilities, over and above lack of financial support to help with lockdown restrictions and even further exacerbating the financial situation at hand.

These two major events continued to plague the country with poverty, dire circumstances and collective misery caused by shortages of food, medicines and basic amenities (including water, electricity and Internet). And, as if all this was not enough, on the 4th of August 2020 yet another catastrophic event hit the country. The impact of what became known as "The Beirut Blast" was described[14] as follows: "With the Aug 4, 2020, devastating explosion in Beirut, Lebanon's dire health and humanitarian crises have escalated." The blast left 217 dead and more than 7000 wounded, of whom at least 150 acquired a physical disability and caused many untold psychological harms.[15]

The destruction from the explosion was widespread, with about 40% of Beirut severely damaged.[14] According to WHO reports, impacts on health infrastructure included three hospitals rendered non-functional, three substantially damaged, 500 hospital beds lost, and many primary care facilities damaged.[14] Essential food and medical supplies were also affected, including damage to grain silos and the destruction of 17 containers of medical supplies and a shipment of personal protective equipment.[16] Other infrastructure, including roads, businesses, educational facilities, and cultural heritage buildings also sustained damage.[14] Initial World Bank estimates costed the physical damage at US$3·8–4·6 billion and economic losses at US$2·9–3·5 billion.[17]

The blast generated a new humanitarian emergency in Lebanon. Hospitals could not source basic materials such as anaesthesia, oxygen and medicines – for lack of funds and access. Companies would not supply unless paid in dollars and in cash.[7] Healthcare insurance companies stopped honouring their debts. 136 private hospitals in Lebanon stopped receiving patients unless guaranteed or subsidized by the BDL.[18] Importers of medical supplies could not acquire approval from the BDL for money transfers for payment of imports of medical supplies.[18] All hospitals took austerity measures by closing departments and dismissing employees and staff.[11] Many pharmacies in Beirut were damaged and those in the vicinity of the port were completely ruined. One pharmacist lost her life from injuries caused by the blast.[19]

Amid all this turmoil and disaster in Lebanon, pharmacists continued to serve their people. In the direst of situations, when healthcare was most needed, pharmacists were there. Their community pharmacies never closed their doors, despite the debilitating financial circumstances or the devastation of the pandemic.[20] Yet, their voices were hardly ever heard. They were never described as 'front line' healthcare workers and suffered their own extraordinary troubles almost in isolation. Little is known about the challenges faced by pharmacists in Lebanon enduring a triple whammy of catastrophic events.

We aimed to explore experiences of community pharmacists in Beirut, Lebanon, during three concurrent crises in 2020: the Lebanese financial crisis, COVID-19 pandemic, and the Beirut Port explosion. We were interested in understanding how community pharmacists coped in the workplace, what would have prepared them and their workplace better to cope, and what lessons were learnt, all in light of the extraordinary circumstances of the time.

2. Methods

2.1. Study design

This was a qualitative study using a constructivist grounded theory methodology as described by Charmaz.[21] Grounded theory is a qualitative research methodology that helps researchers gain an understanding of the perceptions and experiences of participants and social contexts. A theory is then constructed from analysis of the collected data, to help explain the process.[21] Constructivist grounded theory adopts earlier grounded theory strategies[22] but differs from its predecessors by: "(1) assuming a relativist epistemology, (2) acknowledging researchers and research participants, multiple standpoints, roles, and realities, (3) adopting a reflexive stance toward researcher background, values, actions, situations, relationships with research participants, and representations of them, and (4) situating research in the historical, social, and situational conditions of its production. Constructivist grounded theory attends to researchers and research participants' language, meanings, and actions".[23]

Ethical approval was obtained from the Lebanese International University, School of Pharmacy, Research and Ethics Committee [Approval number: 2019RC-027-LIUSOP].

2.2. Study participants and sampling

Inclusion criteria required being a pharmacist practicing in a community pharmacy situated in Beirut Alkobra (a suburban area in Beirut occupying 200Km^2 around Beirut Port.). A purposive/convenience sampling strategy informed the selection of participants. Participants were recruited from within an area of ten kilometres radius around the site of the Beirut Port blast. Participants were purposefully sampled to ensure the study captured representation of the experiences of pharmacists affected by the blast. Within constructivist grounded theory there is no consensus regarding standard sample sizes; the data collection aims to obtain information about the phenomena studied. Participants were recruited until theoretical saturation was achieved. Theoretical saturation refers to the point in data collection when no additional issues or insights emerge from data and all relevant conceptual categories -related to grounded theory- have been identified, explored, and exhausted.[23] This relates to the development of theoretical categories; related to grounded theory methodology and provides a more comprehensive understanding of the issue being studied.

2.3. Participant recruitment

In-depth semi-structured interviews took place between October 2020 and February 2021. Interviews were conducted by author (xx), who is an academic pharmacist with experience in research methods and community pharmacy and residing in Beirut, Lebanon. Participants who expressed willingness to share their experiences with the crises, were selected and invited through the professional network of the Lebanon-based researcher (xx). Participants were selected based on their field of work – being community pharmacy- and geographical location of community pharmacy ensuring

this location is in Beirut Alkobra. Participants were initially contacted by email or by phone text messages. Those who were interested in participating in the study were provided with a participant information and informed consent form, and consent was obtained from all participants included in the study.

2.4. Data collection

A semi-structured interview guide was developed, framed around three major overlapping crises in Lebanon: the Lebanese financial crisis, COVID-19 pandemic, and the 4th of August 2020 Beirut Port blast (Appendix 1). Face and content validity were pilot tested with other colleagues. Demographic information was also collected including, gender, age, years of pharmacy experience, current role in community pharmacy, and geographical location of the pharmacy.

All interviews were conducted virtually, audio-recorded using video conferencing software (Google Meet and Zoom™) and transcribed verbatim by one member of the research team (MA) and checked by another two in the research team (DB and SB). Field notes were created during interviews to supplement transcribed data to help researchers produce a more in-depth understanding of the experiences and feelings of participants. Interview recordings, deidentified transcripts and interviewee demographics were stored as electronic files on a password protected computer belonging to the lead researcher.

Participants were interviewed in their preferred language, either English or Arabic. Four of the research team were bilingual in English and Arabic (DB, SB, MA and BC). When needed, one or two of the Arabic-speaking researchers translated interviews from Arabic to English, which were then verified by an accredited translator/interpreter. BC is a National Accreditation Authority for Translators and Interpreters (NAATI) accredited translator/interpreter [licence number: 23.92].

2.5. Data analysis

Data collection and preliminary data analysis were conducted in parallel. The research team met weekly following the third interview to discuss findings ensuring an inductive approach to data analysis is pursued. Inductive reasoning or indictive analysis utilises a "bottom-up (approach), using the participants' views to build broader themes and generate a theory interconnecting the themes"-.[24]

Appendix 2 demonstrates the stages followed in data analysis as suggested by Charmaz.[21] Data analysis started with *open coding,* where transcripts are coded line by line and labelled into concepts; followed by *focused coding* which involved the *development of concepts*; where codes were grouped according to emerging issues and themes. Next *grouping concepts into categories* was performed. Categories are refined through a process of checking the fit of each category with the coded data it represents and also with each of the other categories and thereby the entire data set. Finally, the formation of a theory was undertaken. The data analysis was an iterative process allowing constant evaluation and revision of codes and categories (cyclical constant comparison).

An illustration of how the interviews were analysed, different types of coding and overall theoretical concepts were developed is provided in Appendix 3.

To ensure rigor of the qualitative research, the research team engaged the following aspects[25]:

- Prolonged engagement: The research team spent adequate time (over 12 months) to learn about the culture in which the research was conducted, build trust and form connections, and reflect on potential distortions introduced by the researchers and participants.
- Trustworthiness: Measures taken to reduce subjectivity/increase objectivity, included a multiple triangulation approach.[26] The first was "investigator triangulation" which includes the use of several researchers in a study,[27] and this was achieved in this study by the multidisciplinary composition of the research team (pharmacists and academics, public health expert and a counselling psychologist). "Theory triangulation" which encourages several theoretical schemes; to examine a situation/phenomenon from different perspectives, to enable interpretation of a phenomenon was also conducted in data analysis.
- Peer debriefing: The team organised, as part of the research process, optional meetings to debrief after the interviews. The aim was to process the experiences and consider different perspectives to maintain an open mind. This was particularly important given the highly emotional charge of participants' narratives.
- Authenticity: Caring and trusting relationships were nurtured with participants during the interviews which enables capturing multiple perspectives. A follow-up letter was sent to participants to convey a sense of appreciation for their involvement in the study and sentiment of solidarity considering the difficult challenges they were experiencing.

3. Results

3.1. Participant characteristics

Thirty-five participants (63% female, mean age 30) were interviewed online. Descriptive data is summarised in Table 1. The interview time ranged from 15 to 90 min.

3.2. Emergent categories and theoretical concepts

An abundance of data was collected from participants highlighting a diverse array of experiences, coping strategies, and responses to the ongoing crises in Lebanon. An overarching issue that all pharmacists agreed upon was the lack of sustainable mechanisms, strategies, and support available to them to counteract the multitude of simultaneous stressors inflicted upon them by the crises in Lebanon: the crippling national financial downturn, a global health pandemic and the devastating impact of the Beirut blast.

Whilst the research questions did not focus on the resilience of individuals (pharmacists), resilience surfaced as a pivotal concept, as data collection and analysis deepened. Resilience was alluded to by the majority of participants and findings revealed its manifestation when individuals were experiencing ongoing crises or disasters. Participants described the multiple crises and the impact on them as pharmacists, on the profession in general, and on their patients. Participants described their response to the crises as well as the response of patients, the profession, and systems existing within communities in the country. Whilst the focus of the research was to explore community pharmacists' response to the crises, the interconnectedness with patients' behaviour and responses to the crises, as well as the overall response of the profession and systems in place became apparent, leading to the development of a deeper understanding of resilience, coping mechanisms and overall lessons learnt.

3.3. Emergent categories and subcategories

Across the participants' pool, four main categories emerged from the data analysis with subcategories (Table 2).

Table 1
Participant characteristics.

Characteristic	Overall = 35, n (%)
Female	22 (63)
Male	13 (37)
Age, median (range)	29 (23–50 years)
Years of experience, median (range)	4 (0.5–18 years)
Community pharmacies	35 (1 pharmacist recruited from each pharmacy)
Distance of community pharmacy from Beirut Port, mean (Km)	5

Table 2
Summary of categories and subcategories.

Category	Subcategory
1. Painting the picture	–
	Declining financial viability and sustainability of community pharmacies
	Limited pharmacy services
	Changing patient (consumer) health-seeking behaviour and attitudes
	Deteriorating mental health of pharmacists and patients
	Burnout
	Fear and misinformation
	Fluctuations in patient-pharmacist relationship
3. Response to the crises	Expanded scope of pharmacist practice: First aid response and disaster preparedness
	Enhanced problem-solving and adaptation
	Pharmacist perceptions of ethical and professional conduct
	Pharmacist "Identity" crisis as health care professionals
	Lack of recognition
	Lack of remuneration
	Resilience and coping strategies
	Patience
	Hope
	Family support
	Lack of support
	Futility
4. Need for advocacy and leadership	–

1. Painting the picture - pharmacists describing the context/setting.
2. Impact of the crises - on community pharmacists, the profession (+ practice), patients and the system.
3. Response to the crises - of community pharmacists, the profession (+ practice), patients and the system.
4. Need for advocacy and leadership

1. Painting the picture – pharmacists describing the context/setting

The financial crisis was perceived by participants as the most crippling factor in retail pharmacy affecting their livelihoods:

"*My money in the bank has evaporated – gone – this money in the bank is for my pharmacy but we can't withdraw any money. Forget it.. my dollars (US$) are gone.. count the losses.. 12 years of hard work sitting in the bank but I am not allowed to withdraw them. The supplier companies (of medicines) demand we pay them in cash, and we have money sitting on the shelves (in the form of medicines/items) but they are worth nothing."* [Ph12].

Participants described the rising cost of living in Lebanon amid shortages of essential items (including medicines) and frequently portrayed the stress and frustration experienced by pharmacists and the communities they serve. Painting a picture of people's struggle to survive the financial crisis was a shared narrative among participants, who described the general atmosphere as follows:

"*Where my pharmacy is located, people are poor. Surviving day by day… they bargain over 1,000 or 2,000 Liras. When such a customer walks into the pharmacy, he is shocked at the price of items…he says 'how can I buy formula milk for our baby when I can't afford it on my salary? I can barely afford my house rent'. The condition is very bad and especially with COVID, which kept people home and stopped going to work. The bad economic condition in Lebanon is the number one [issue].*" [Ph22].

The emergence of COVID-19 was described in several ways, reflecting the dynamic nature of the pandemic. Community pharmacists described an unprecedented rush by consumers to purchase "*vitamins, hand sanitisers, masks, antibiotics, and aspirin tablets*", and seek pharmacists for "*information and advice*". However, the ongoing health pandemic was perceived to have sparked "*panic*" in the community and "*complicated"* an already struggling economy:

"Circumstances became more difficult when COVID-19 started, especially with the economic situation we are in, also with the steep depreciation of our local currency against the US$. This seriously impacted negatively on the viability of community pharmacies… the whole situation is dire." [Ph24].

Horrific scenes of the aftermath of the explosion that destroyed Beirut's port on 4th August 2020, in which much of the city and countless lives were lost, were recounted by participants. A few participants equated its perceived magnitude and impact to an "*atomic bomb*":

"Let me stop at the bomb [referring to the blast] more than COVID-19 because I was very angry after the "atomic bomb" [Ph7].

Many participants described an overwhelming sense of horror and shock at what they had unexpectedly witnessed on the day of the blast.

"My pharmacy is very near the blast, so people rushed in, covered in blood, some with glass in their eyes, they were coming to the pharmacy because all hospitals were full, the situation was so tragic.

For days, people came in seeking products for wound care. After the blast, we were mentally traumatised for over a month." [Ph28].

2. Impact of the crises - on community pharmacists, the profession, patients and the system

According to our participants, political instability and economic collapse led to a host of problems in pharmacy in Lebanon - including declining financial viability and sustainability of community pharmacies, limited pharmacy services, changing patient (consumer) health-seeking behaviour, mental health issues, fear and misinformation, fluctuation in the patient-pharmacist relationship, unstable and collapsing health care system.

Subcategories:

Declining financial viability and sustainability of community pharmacies

Participants expressed grave concerns over the viability of community pharmacies in Lebanon. The local currency became so undervalued and the BDL lifted subsidies on essential medicines, which led to a further spike in the price of essential medicines amid ongoing medicine shortages. This, in addition to smuggling of subsidized products outside the country, the inability of pharmacists to pay medication suppliers, the stockpiling and hoarding of chronic medicines, and delays in processing import requests:

*"In retail pharmacy, we sell drugs at an exchange rate of US$1 = L.L.1500, while the pharmacy expenses are at US$ 1= L.L. *7000 (Feb 2021 exchange rates) so there is a big gap (between income and expenses). We [pharmacists] are getting paid at a US$1 = L.L.1500. We are very affected. Buying products is a burden for my pharmacy."* [Ph6].

This exchange rate soon became $US1 = 20,000 LL:

"We have a serious cash flow issue. The suppliers who we used to pay after 60-90 days, now want cash and we are a new pharmacy. So, it's difficult to manage the cash flow" [Ph11].

Limited pharmacy services

Participants described the impacts on the provision of pharmacy services e.g., chronic disease monitoring:

"During COVID-19, we stopped doing blood glucose and pressure measurement, I did injections only for our known clients/patients who I am sure follow social distancing." [Ph14].

Changing patient (consumer) health-seeking behaviour and attitudes

"People are panicking… some are afraid there will be drug shortages, some are worried that drug prices will increase. For example, a box of Panadol now [at the time of interview] costs 3,300 L.L. If drug prices are no longer supported by the BDL, the price will rise to 18,500 L.L." [Ph06].

Deteriorating mental health of pharmacists and patients

Many participants stated that the multifactorial effect of the crises in Lebanon has negatively impacted the mental health of both pharmacists and patients (consumers). A sense of inability to cope with the "depressing" country situation impacted all.

"We noticed that after the blast the demand for antianxiety, antidepressant and muscle relaxants has increased, and this may be related to the current situation. We have also noticed that although we [pharmacists] are working and getting paid, we are easily provoked and lose our temper. We have probably also been indirectly affected by the blast and current situation. This year [2021] was all negative" [Ph19].

Burnout

Participants described feelings attributed to burnout such as feeling "tired", "undervalued" and "exhausted". Many attributed this to a lack of professional recognition by the government and professional bodies.

"The Lebanese army or organizations came and checked the damage; however, repairs were done at the pharmacist's expense… I was trying to gather energy to serve the patients because this is our duty. It took time to return to normal, the first period any sound of a door slamming closed or anything like that would startle us because the blast was in our minds. As pharmacists we are burned out, work is tiring. I am tired." [Ph06].

"The profession has almost collapsed. We feel tortured. I hope things get better and this profession can return to normal. I don't regret being a pharmacist, but yes, I regret being in Lebanon., I am thinking of leaving and I am applying because we can't remain like this, you can't progress here, we are very restricted, and the salary is low. There is no respect from patients, or appreciation, pharmacy has no value. Many pharmacies are closing, only the strong are standing" [Ph09].

Fear and misinformation

Impact of misinformation and fear on patient behaviour was alluded to by participants who shared that patients tended to self-medicate trying to "protect" themselves from COVID-19.

"With regard to Flu vaccine, people were requesting it hugely, we brought two times. People know it isn't related to Covid19, however many thought they are boosting their immunity for the virus" [Ph15].

Fluctuations in patient-pharmacist relationship

Participants experienced fluctuations in pharmacist-patient relationships, specifically concerning issues of mistrust/trust due to impacts of medicine shortages.

"People don't believe that we don't have stock and argue with us." [Ph27].

"Now we have medicine shortages. In our pharmacy patients are elderly thus we have a demand for chronic medicines, so we are suffering to explain to people that we are not hiding drugs but the supply is low and things suddenly got unavailable" [Ph05].

3. **Response to the crises - of community pharmacists, the profession, patients and the system**

Subcategories:

Expanded scope of pharmacist practice: First aid response and disaster preparedness

Participants shared that they had to step up in the wake of the port blast to become first responders/first aiders, especially with hospitals reaching capacity limits(ref). Examples were shared about pharmacists having to be adaptable and responsive such as "*calling on defence services for help*", "*attending to the wounded*", and "*applying wound dressings*". Subsequently, there was a shared sense of trauma and distress among pharmacists who had to respond to casualties, particularly those who kept seeing those patients for weeks after the blast. According to the participants, responding to those in need (and for "free") was part of their humanitarian responsibility as health care professionals.

"We were hugely affected. All the glass in the area was shattered…People were on the streets injured. It was 6:30 pm when it happened - all the team (13 pharmacists) worked till 5 am. People were on the floor, blood everywhere, we tried to help as much as possible. In some cases we couldn't help because they were severe, children and elderly, people were shouting and crying. We even asked nurses and people from civil defence to come to help us, because hospitals couldn't occupy more. Some people were stitched all wrong and it was scary. They were being stitched on the street. I don't like to remember that day, I couldn't sleep because of what we saw. We did our role and hopefully, it won't happen again. Everything we did was for free although we used a lot of tools/products. We kept getting blast victims for a week, hospitals even referred patients to us." [Ph15].

Enhanced problem-solving and adaptation

The experiences shared by participants conveyed a significant extent of workarounds practiced by pharmacists in the crises. These included: generic or brand substitution, rationing medications, prioritising patients according to medication condition, offering medication alternatives, and monitoring patient medication buying behaviour.

"Drug shortage is a problem, if we used to get 100 boxes of Panadol, now they [suppliers] only send us 24 boxes… so we are now selling by the sachet… we also switched patients' medications to different brands for two reasons: to reduce cost on them [patients], and to give an alternative; but sometimes we can't find an alternative" [Ph01].

"The strategy we adopted was not to give anyone [non-regular customers] more than one box [medicine], and prioritise our regular patients living with chronic diseases." [Ph03].

Pharmacist perceptions of ethical and professional conduct

Participants expressed how the crises impacted their perceived sense of professionalism, duty of care and code of conduct. Often, pharmacists faced situations with patients where they felt ethically challenged:

"Elderly patients had been asking about the flu vaccine since September (2020) and we were recording their names. The medications supplier only provided 20-30 vaccines… so we had to prioritise those patients with comorbidities to supply the vaccine to. I feel bad. I can't say it's unethical because it isn't in the pharmacist's control" [Ph05].

"I have been a student rotating in community pharmacies since 2007 (so a total of 13 years), and the last 2 months were the worst, ethically speaking, in terms of counselling and dispensing. You are unable to help the patient access their medicines, so I advise them to go outside Beirut maybe they can find their medicines. This is due to the large population in Beirut, so a high demand" [Ph02].

Pharmacist "Identity" crisis as health care professionals

Impacts on self-worth and value as healthcare professionals were expressed by all participants- including a sense of regret practicing pharmacy in Lebanon.

"We paid a lot of money to study pharmacy for 5 years… to get the chance to practice what we love. To try to serve and benefit our patients. At the same time; we don't have rights in this country. We are tired because we don't earn the income we deserve, which in turn affects our physical and mental health." [Ph18].

Lack of recognition

"We are tired, everyone is tired, we are front liners, but we are not given credit, everyone in the media talks about doctors and forgets about pharmacists. The media should highlight this role." [Ph20].

Lack of remuneration

"We are getting paid the same, in Lebanese at a 1500 LL rate, the salaries are still the same there is no increase. Because if someone is working in a community pharmacy the owner will tell him that they are still working at a 1500LL rate and he can't increase his salary. Many people's lives have changed." [Ph24].

Resilience and coping strategies

Participants reported the many factors or triggers that enhance resilience and factors or triggers that deplete it, as follows:

Patience

"Economically, we are trying as much as possible to tolerate this situation and its burden on us, so no one can do anything except tolerate this period." [Ph24].

Hope

"Now, we are trying to adapt and be positive. You can get depressed and lock yourself, but there are always ups and downs in life, so we expect positive things, we live in the hope of a better tomorrow." [Ph10].

Family support

"I can pay because of my husband's support - patients who have family abroad are being supported- otherwise people are borrowing and in debt. Thank God I am not responsible for the household, I would have become depressed (laughing)" [Ph12].

Lack of support

"Because our income is still the same, we can't afford everything like before. Everything is way more expensive, things are double and triple and our income is still the same, so this has affected us immensely. We even started to think that we either should travel or work multiple jobs to be able to deal with everything" [Ph21].

Futility

Participants projected a sense of futility in their professional lives. They described tendencies, aspirations, coping mechanisms and plans to migrate out of Lebanon- all instigated by futility.

"I don't regret studying pharmacy since I help people and will continue to do that in the future. But if I have to regret something, then it is this country [Lebanon] and the conditions that we have endured… it is better to leave and continue [living/working] abroad." [Ph24].

"No one is appreciated in this country, low salary, I'm not sad, I'm not happy, I am trying to cope, I am keeping my options open, and I may travel" [Ph31].

"Pharmacists don't have rights here from OPL [Order of Pharmacists of Lebanon] or MoPH [Ministry of Public Health]. We are overworked and underpaid compared to physicians. I don't regret becoming a pharmacist. I am tired of this profession, but I love it and I am good at it …I always give it my best. I also love Lebanon, so I don't regret being here. I tried leaving then came back" [Ph15].

4. **Need for advocacy and leadership**

Majority of participants were of the view that there was a vast lack of oversight and leadership by authorities, for purposes of information and advocacy in Lebanon as well as access to reliable and trusted information in order to pass on to the public.

"I only knew about COVID because when it started in China, they started exporting masks to China in early October/November 2019, that is when we knew about it. Also from journals, from people, and in the news. The OPL [Order of Pharmacists of Lebanon] and MoPH [Ministry of Public Health] didn't do anything at all. A while back I wrote a post on Facebook about the OPL who didn't conduct any meetings with pharmacists, even online, and didn't provide any official recommendations. Every pharmacist is working on their own with no rules…some taking precautions while others aren't." [Ph17].

"We don't know a lot about the COVID vaccine. People ask for our opinion, but we don't know much about it, and we don't have information… nothing is happening that is why we reached 5000 cases per day" [Ph13].

3.4. Emergent theoretical concepts

Further grouping of the emergent categories formed higher-order theoretical concepts grounded in the data. Two theoretical concepts were constructed which explain and depict the phenomena studied:

1. Unsustainable resilience amid ongoing crises. The interconnectedness between impact and response is represented by an infinity loop between impact and response (Fig. 1)
2. Unsustainable resilience – is represented by a "tilting board" of resilience (Fig. 2)

Collectively, findings revealed a complex set of interactions impacting pharmacists and their response to the ongoing crises. Whilst the study's focus was on community pharmacists' experiences and perceptions, participants also provided perspectives related to the impact on and response of patients, the profession, and the overall healthcare/public health system in Lebanon. A depiction of the interconnectedness between impact and response is presented in Fig. 1.

Based on participants' statements and considerations of factors described earlier, it was revealed that the ongoing crises, worsened by a lack of systemic and professional support, have pushed community pharmacists into "survival mode". Whilst participants shared multiple examples of adaptability, problem-solving, and ability to cope with uncertainty and adversity – demonstrating features of resilience, there were expressions of limitations to their resilience. Resilience, although a multidimensional construct, generally encompasses "the capacity of individuals, families, communities, systems, and institutions to anticipate, withstand and/ or judiciously engage with catastrophic events and/or experiences; actively making meaning with the goal of maintaining normal function without fundamental loss of identity".[28]

In this study, participants described themselves as "resilient" by "trying to cope", "trying to survive", but often these were followed by "we are tired of being resilient":

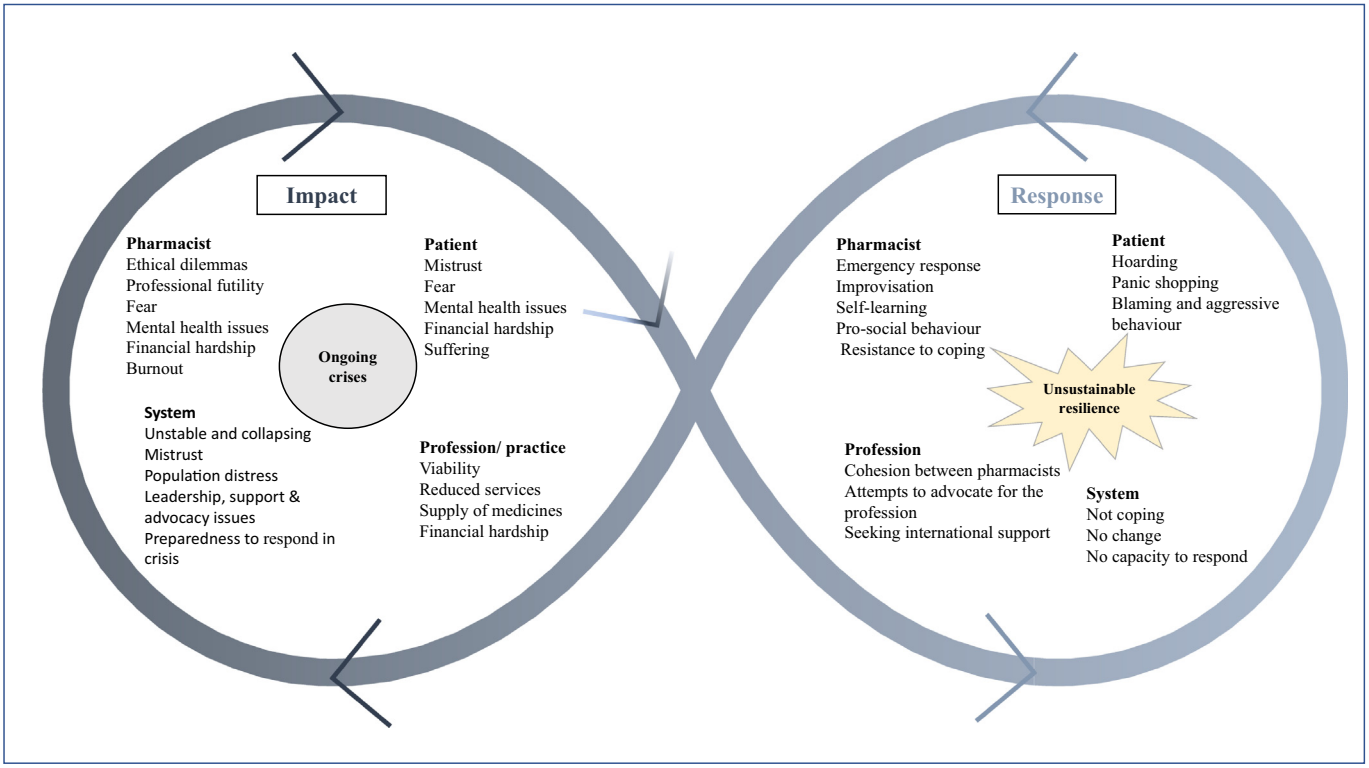
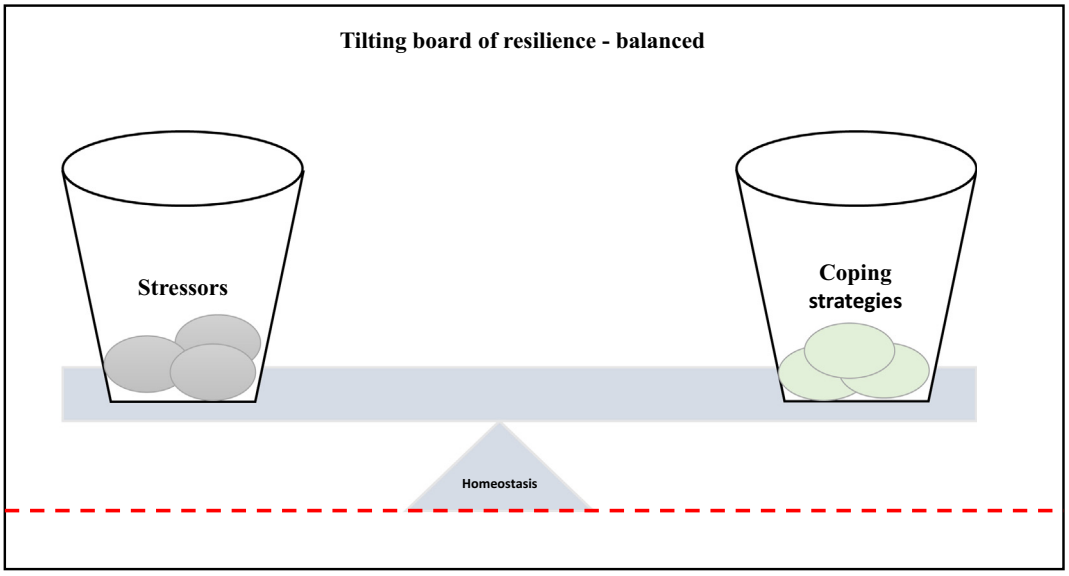
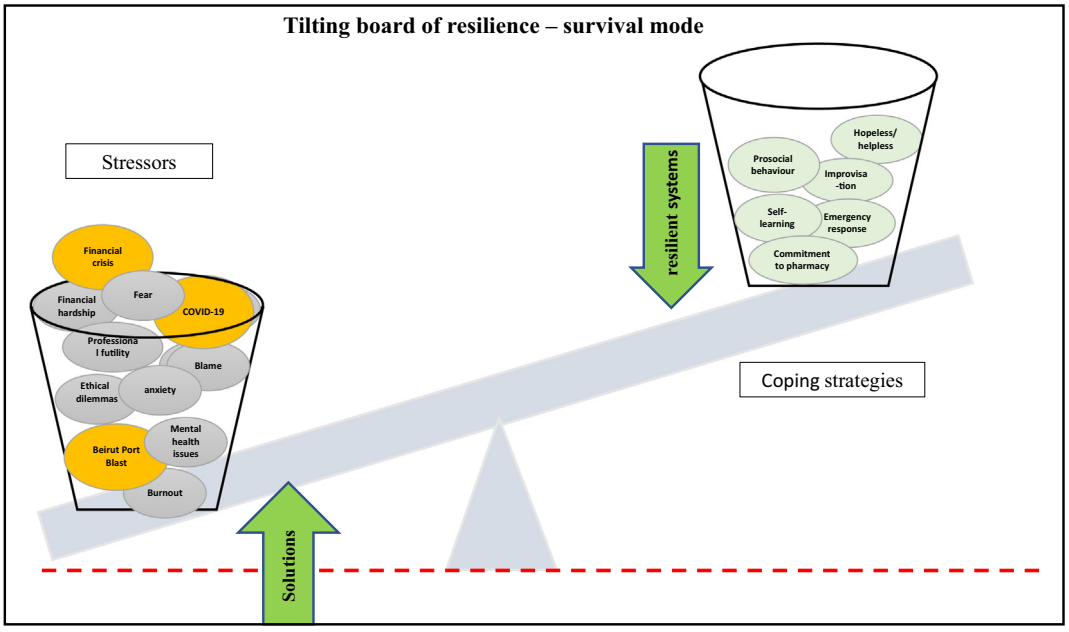


Fig. 1. Representation of the interconnectedness of identified themes and the concept of "unsustainable resilience" in response to ongoing and persistent crises.



A. "Tilting board" of resilience – hypothetical representation of resilience as a balanced entity between stressors and coping strategies



B. Tilting Board of resilience – hypothetical representation of unsustainable resilience and the need for solutions and systemic resilience to support pharmacists cope and maintain resilience

Fig. 2. Tilting Board of resilience.

"*The practice of pharmacy has changed. We used to be consulted… now patients only ask about their medicines and if an alternative is available. The pharmacy profession has suffered. It is humiliating. Even the suppliers, and agents all talk to us in a humiliating way*" [Ph09],

"*We are no longer able to help patients*" [Ph02],

"*Medication smuggling, greedy suppliers, angry patients, frustrated pharmacists who themselves need to survive.*" [Ph12], and.

"*We are not surviving, we are dying*" [Ph23].

With a constructivist grounded theory approach, findings revealed the notion of what we described as "**unsustainable resilience**" experienced by community pharmacists, trying to survive persistent and ongoing crises. Participants demonstrated resilience in their ability to cope and respond to the crises in all its facets. Participants shared worries and fears of nearing a breakpoint or collapse on an individual level –both emotionally and mentally, exacerbated by a fragile and non-responsive system (including government and professional bodies). Participants described a sense of hopelessness and helplessness as no systemic support, solutions or resources were offered.

To the participants, the crises only seemed to be worsening, further complicating their response without adequate resources, support, financial capacity and unprecedented medicine shortages.

Resilience of community pharmacists in the study is depicted as a "titling board", illustrated in Fig. 2. On one side are the array of crises (stressors), and on the other side are pharmacists' ways of coping (coping strategies). Our participants attributed resilience to their "ability to cope" and "to manage", especially in the initial phase of the crises. This is when it was perceived that one's coping strategies (e.g. workarounds and collaborative relations with others) were just enough to balance the negative

impact of the crises or stressors – maintaining the "tilting board" in a state of balance or homeostasis (Fig. 2A). The data revealed that as the crises persisted and worsened, pharmacists struggled to cope, often referring to themselves as being "in survival mode".

We propose that when the stressors of life increase disproportionately to one's coping mechanisms the "tilting board" of resilience tips heavily to one side weighing down individuals and shifting them into a state of futility, hopelessness, and helplessness as described by the vast majority participants (Fig. 2B). However, participants' lack of "sustainable resilience" is a microcosm of country-wide systems, organisations, authorities and teams. Their resilience to be maintained, sustained, or even to thrive in crisis, people must be supported by "resilient systems" and provided "solutions" to the crises (green arrows in Fig. 2B). Our participants shared the urgent need for top-down solutions and resilient systems that are adaptive and responsive to peoples' and communities' needs and priorities. It is proposed that with serious and purposeful solutions and the development of resilience systems the "tilting board" can be reset, and peoples' resilience prevails.

4. Discussion

While there is a growing body of research examining the impacts of the COVID-19 pandemic among healthcare workers, to the best of our knowledge, this is the first comprehensive qualitative exploration of the experiences of the concurrent crises - the Lebanese Financial Crisis, COVID-19 pandemic, and the Beirut Port explosion in 2020 - among community pharmacists in Lebanon. The Lebanese Financial Crisis, compounded by the pandemic and the Beirut Port explosion had a range of impacts on pharmacists' professional practice and their wellbeing, including managing severe medicine shortages, declining viability of community pharmacies, limiting patient pharmacy services, ethical dilemmas and subsequent burnout and professional futility.

Responses to the evolving and dynamic impacts of these crises saw the expanded role of pharmacists in disaster emergency response, practice adaptation, and altered patient health-seeking behaviour. Furthermore, our study provided evidence for the limits of individual-level resilience in the context of unresponsive and collapsing systems. On this basis, our study generated a theory of "Unsustainable Resilience", a notion whereby: pharmacists' inherent capacity to cope in crises, informed by lessons learned from historical and ongoing events and circumstances, and the unceasing exertion of effort and stress with fewer improved results and, lead to burnout and hopelessness, and depleted reserves of resilience. These findings and theory, highlight important implications for system-level resilience, research, policy, pharmacy practice and education.

Our findings are consistent with previous research investigating COVID-19-related impacts among pharmacists in Lebanon and other countries, including exacerbation of medicine shortages, problematic patient health-seeking behaviour and pharmacist practice adaptation and adoption of coping strategies.[29–33] Medicine shortages has been a global public health issue since before the pandemic.[29,34] Participants reported managing exacerbations of medicine shortages during these concurrent crises with extremely scarce resources, including fuel and electricity (at times available for three hours/day) essential for 'cold chain' preservation of refrigerated items and general operation of pharmacy, coupled with limited purchasing power for essential medicines and depleted stocks.[12,29,30] While evidence related to the impacts of economic crises among health workers is emerging,[35] economic shocks such as the one experienced in Lebanon pose wide challenges affecting all sectors, including households, governments and the labour market.[35,36]

The strain and responses economic crises elicit have significant impacts on health system performance, access to health and health outcomes.[36] Health uninsured people and those from poor socioeconomic backgrounds in Lebanon, estimated to comprise half of the total population, are particularly vulnerable with limited access to healthcare.[12] Limited access to medicines, particularly for chronic diseases, has resulted in an increase of hospitalisations in Lebanon. However, financial deposits needed for hospitalisations remain unaffordable among many.[12] According to Amnesty International, at least 70% of the population is unable to afford their medications, and Lebanon is experiencing severe shortages of chronic diseases medicines such as that for heart diseases, diabetes, mental health, epilepsy and cancer treatment.[11] Economic and security crises increase peoples' demand for, and limits their access to, healthcare.[37] This was evidenced in Ukraine, where access to health services has become increasingly limited due to the Russian invasion in early 2022, compounded by a surge in COVID-19 infections.[38] Unemployment, declining incomes and increasing debt reduce household financial security, as well as that of reduction in government resources, resulting in changes to levels of stress, health-seeking behaviours and in access to healthcare.[36] At the time of writing, the economic situation in Lebanon continues to worsen. In November 2021, the BDL removed subsidies on essential medicines, which saw medicine prices soar to four times that at the beginning of the financial crises in 2019.[11] Measures and policies, including medicines subsidies, and partnerships with international donors and pharmaceutical companies are urgently needed to safeguard and ensure access to healthcare.[11]

Participants adopted creative problem-solving skills and coping strategies to fulfill their duty of care and meet the healthcare needs of their patients, including the generation of informal networks such as WhatsApp communication groups to help manage medicine shortages, and rationing and prioritisation of medications among patient groups. However, participants described facing ethical dilemmas when making decisions to prioritise one patient over another, culminating in feelings of distress and helplessness. This phenomenon has been described as moral injury, "the psychological distress which results from actions, or lack of them, which violate someone's moral or ethical code".[30] On the other hand, patients responded to uncertainties and medicine shortages by stockpiling, further exacerbating limited supply. Participants reported aggressive behaviour, harassment and verbal abuse from patients when medicines were not available accusing pharmacists of hiding them. In a national survey of community pharmacists in Canada, 73% reported an increase in harassment and verbal abuse by patients against pharmacists.[30] Effective public health messaging and education and community engagement are needed to support pharmacists and patients in times of crises.

Experiences from other countries corroborate findings that the expansion and adaptation of the role of community pharmacists in response to COVID-19, has "led to the recognition of pharmacists as essential members of the healthcare workforce, with potential long-lasting professional role changes"[31,33,39] Pharmacists provided COVID-19 screening and testing, public health messaging, mental and psychosocial support, provision of personal protective equipment and telemedicine services.[31,33,39] Pharmacists have been viewed as a trusted source of reliable and evidence-based information about medicines and their use.[40]

Although participants felt fluctuating patient trust throughout the course of the pandemic, they faced increasing demands in the provision of updated information and managing misinformation regarding COVID-19 management and treatment. Previous research demonstrated that the pandemic strengthened the role of pharmacist in evidence-based information sharing and education among patients[41] and health professionals and guidance and policy.[33,40] The first example of pharmacists' expanded response to COVID-19 comes from China. In field "Cabin" hospitals, pharmacists were assigned a range of tasks from those that are traditional, such as developing emergency COVID-19 formulary, medicine procurement, and healthcare provider education through to evaluating the evidence to inform clinical decisions in COVID-19 management, monitoring patient mental health, and outsourcing drug information queries to universities and pharmacy organisations.[32,33,42] Notably, participants in the current study reported having to fend for themselves in obtaining up-to-date guidance on COVID-19 management and misinformation circulating widely in communities, as local/national guidance and polices and support were not unavailable.

Pharmacists are often the first port of call for patients, increasingly playing an important role in public health and community engagement.[43] Participants reported playing a critical role as first responders - providing first aid, wound care, anti-tetanus vaccinations in the aftermath of the

Beirut Port explosion. The role and scope of practice of pharmacists in disasters have evolved over the last two decades from logistics and supply of medicines to assessment, screening and prescribing roles.[43,44] Similarly, in 2005, Category 4 "Hurricane Katrina" in the United States, instigated the expansion of pharmacists' role in disaster response and recovery, including clinical tasks, especially in absence of other health professionals.[45] This included triaging patients in evacuation centres, performing basic medical assessments and medication histories, as well as vaccinations (e.g., tetanus).[45] They treated minor illnesses and prescribed 30-day supply for chronic diseases, participated in the overall administrative, communication and coordination response with state stakeholders.[45,46]

The International Pharmaceutical Federation (FIP, The Hague, Netherlands) has recognised these extended roles by releasing guidelines for disaster management focused on pharmacy preparedness and response, as well as COVID-19 guidelines.[47,48] Despite these guidelines and support from international professional societies, pharmacists are often not included in disaster management planning. Barriers include lack of recognition by other health professionals of pharmacists' value in such events, lack of disaster management and training, insufficient interest from the pharmacy profession, lack of funding and reimbursement issues, and legislative constraints.[43] Including pharmacists in contingency planning and disaster preparedness, response and recovery are urgently needed.

A sense of frustration, fatigue, and hopelessness was observed among participants working under difficult conditions, increasing work demands, personal and professional financial difficulties and near absent support from authorities and professional societies. Similarly, it has been well documented that healthcare workers, including community pharmacists, working under extreme pressure with limited resources and guidance are at risk of exhaustion, burnout, disengagement and mental and physical health issues.[8,14] The effects of COVID-19 on health workers' (including community pharmacists') mental health have been widely reported, including depression, anxiety, where resilience correlates negatively with burnout.[30,39,49,50] In Lebanon, increase in mental health issues during COVID-19 and stockpiling of psychotropic medications have been reported.[51]

Resilience is defined as "*the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma. Assets and resources within the individual, their life and environment, facilitate this capacity for adaptation and 'bouncing back' in the face of adversity*."[25] Resilience is at the core of the United Nations Sustainable Development Goals and the World Health Organization European policy framework for health and wellbeing.[52] This study advocates a new perspective on individual resilience in that it can become "unsustainable" in the presence of persistent, ongoing crises. As described above, pharmacists in this study exhibited multidimensional resilience in the face of the three levels of crises, however, their resilience started to fade due to the lack of support, leadership and political will in the country. Authors of this study argue that in the impact of the ongoing crises is the diminishing of coping mechanisms in the context of unresponsive and unprepared systems to support them. Participants reported that supportive environments were lacking in Lebanon, who almost unanimously described the absence of supportive resources, recognition and advocacy for their services to the public throughout the crises.

Resilience is often considered to apply at three levels - individual, community and system levels.[52] Supportive and resilient systems are pivotal to the promotion and protection of health, and in preparedness and mitigation of future predicted or emerging ill health, such as pandemics and emergencies.[52] Individual-level resilience should always be seen in relation to the availability of such environments. Supportive environments include health-protective and health-promoting resources, as well as those cultural, economic and political resources necessary for the health and well-being of the population.[52] Work is ongoing among global community pharmacist groups and professional societies in researching and implementing education and training of pharmacists and pharmacy students in efforts to strengthen sustainable resilience among the pharmacist workforce.[53]

Although participants generally reported ongoing commitment to the pharmacy profession, the intention to migrate outside the country to seek more sustainable opportunities as well as to enhance their wellbeing was commonly observed. This is consistent with previous research demonstrating work-related burnout has been associated with lower job satisfaction, reduced work productivity, high intention to quit, and poor health outcomes among community pharmacists in Lebanon, and in other countries.[49,54] The consequences include accelerated pharmacist attrition and destabilisation of the labour market, with long-term impacts on health-system resilience, poor access to health and health outcomes.[55] In a recent survey in Lebanon assessing community pharmacists' resilience, around 40% of respondents indicated an intention to quit their current job in the next 12 months, and 86% were planning to either migrate outside the country, seek early retirement, or work in a non-health related organization.[49] Effective policy and interventions are urgently needed to support community pharmacists and prevent further attrition.

Our study has generated several practice, policy and education recommendations. First, pharmacists should be included in disaster and emergency contingency plans, preparedness, and response. First aid and disaster management training and education should be made mandatory for pharmacists and pharmacy students, as well as public health training in emergencies. Training in preparedness and response, particularly in events where tasks such as triaging, vaccine assessment and administration, wound care may be shifted or extended to pharmacists. Second, enhanced leadership and governance is urgently needed at national and international levels to advocate for structural reforms to safeguard and improve access to essential medicines and care to populations, as well as urgent funding scheme to improve medicine shortages and access to medicines. Third, enhanced leadership is also needed at both local and global health policy levels, to increase awareness and advocate for opportunities to recognise the expanded role of pharmacists as well as the inclusion of pharmacists in contingency disaster and emergency planning. Fourth, further research on the impacts, and responses to economic crises and emergencies and resilience among pharmacists in the Middle East and North Africa region is needed. Evaluations of expanded roles and skills of pharmacists in emergencies are also needed. Enhanced support and guidance from national and international authorities and professional societies are needed during public health emergencies. Finally, strengthening system resilience requires the introduction of financial mechanisms that increase economic sustainability, and future planning should include mechanisms that protect access to health and healthcare providers.

This study has several strengths and limitations. The grounded theory approach allowed for a rich and in-depth exploration of experiences of a compound of crises and generated rich data on impacts and responses among community pharmacists in Lebanon. The interviewer was an experienced pharmacist in Lebanon with extensive network allowing for a high recruitment number of participants. The study sample comprised participants recruited from a cluster of districts in Beirut, (Beirut Alkobra) and therefore might not be representative of the broader population of community pharmacists across the various regions in Lebanon. Due to COVID-19 related impacts, we were unable to conduct interviews face-to-face and resorted to online communication. The interviewer may have been identified as a practising pharmacist within the network, and as such, participants may have perceived that the interviewer expected responses that were perceived as aligned with the general views, hence potentially introducing social desirability bias. However, the interviewer provided assurance of neutrality, confidentially and anonymity to mitigate this effect. In addition to the three crises explored in this study, Lebanon continues to grapple with the impact of the Syrian refugee crisis which transpired in 2011, as well as political deadlock which triggers popular protests leading to stalling of reform and recovery efforts. Whilst these crises were outside the scope of this study, the results were indicative of overall sentiments, struggles and coping mechanisms of community pharmacists in the context described.

5. Conclusion

This study explored the experiences and perspectives of community pharmacists in Beirut, Lebanon, in the face of concurrent crises. Findings highlight the shared sense of futility and hopelessness among pharmacists and linkages to unsustainable resilience and coping mechanisms. This work calls for urgent action on, and advocacy for, future resilient systems, and support to pharmacists and their profession in Lebanon.

CRediT authorship contribution statement

Dalia Bajis: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Writing – original draft. **Sahar Bajis:** Conceptualization, Data curation, Formal analysis, Writing – review & editing. **Marwan Akel:** Conceptualization, Formal analysis, Data curation, Writing – review & editing. **Alicia Pena Bizama:** Conceptualization, Formal analysis, Methodology, Writing – review & editing. **Betty Chaar:** Conceptualization, Formal analysis, Methodology, Supervision, Writing – review & editing.

Acknowledgments

The authors would like to thank very much the participants for their generous contributions to this study.

We confirm that this manuscript has not been published elsewhere and is not under consideration by another journal. All authors have approved the manuscript and agree with submission to Exploratory Research in Clinical and Social Pharmacy.

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Semi-structured interview guide

1. Introduction: purpose of the study and structure, confirmation of informed consent (including consent for recording the interview), estimated duration (30–40 min), reminder of: voluntary participation, right to withdraw at anytime, no requirement to answer all questions, data can be removed at participant request, participant checking following transcription.
2. Demographics: age, sex, highest degree?, years in practice, current role, location of pharmacy.
3. Interviewer starts by "*we will start with questions related to..*

Lebanese Financial crisis:

- *How has the financial crisis affected your practice and the services you provide in the pharmacy?*
- *As a pharmacist, how did you respond to the financial crisis?*
- *How has the financial crisis affected patients and customers attending your pharmacy?*

I will move on to talk about..

COVID-19 health pandemic:

- *How did you first learn about COVID-19? How did you think it would affect you?*
- *Can you please describe how COVID-19 affected your practice, pharmacy support staff and patients?*
- *What professional support/resources did you have access to, to assist in managing patients or customers in your pharmacy?*
- *In your opinion, how did the pharmacy profession respond to COVID-19? Describe any specific emergency-response policies or procedures in place for pharmacists?*

I would now like to ask you about the ..

Beirut Port explosion:

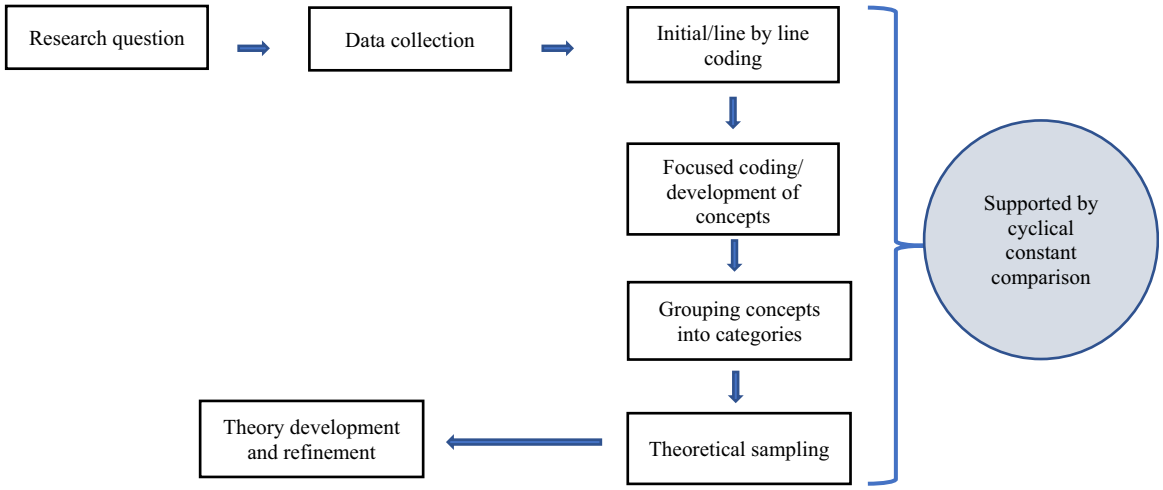
- *How did you first learn about the explosion?*
- *Can you please describe what you, your support staff experienced on the day of the explosion and the following days?*
- *How did you and other staff respond to the needs of the community after the explosion?*
- *How well do you think your pharmacy coped in this crisis?*
- *What did you do differently as a pharmacist during this time?*

Finally, would you like to share any lessons learnt or any concluding remarks.

Lessons learnt:

- *What have you learnt from this crisis so far? What would you do differently? What advice would you provide to someone who had not lived through an international disaster like this (referring to the explosion)?*
- *What did you need to change about your practice as a community pharmacist to deal with all these crises?*
- *What strategies helped the most?*
- *What strategies or support were lacking?*
- *What skills and knowledge do you think you found most useful in dealing with a crisis?*

Appendix B. Steps taken in data analysis



Appendix C. Example of coding from interview data

Example 1	
Excerpt from interview transcript	*"People [*e.g. *patients] are panic-buying; they are afraid that there will be drug shortages, some are afraid that the drug prices will increase."*
Initial coding	People panic buying medicines
Focused coding	Panic behaviour
Category	Response and coping behaviour
Theoretical concept	Impact of the crisis on patient behaviour in the pharmacy and subsequent response
Example 2	
Excerpt from interview transcript	*"There is a dilemma between us [pharmacists] and the patients … not all patients agree that you switch their medicines, some are stubborn they don't agree."*
Initial coding	- Pharmacists provide alternatives ways to provide medications to deal with the shortage - Patients resistant to medication substitution
Focused coding	- Workarounds by pharmacists - Patients' mistrust
Category*	1. Pharmacist behaviour and workarounds/problem solving 2. Patient resistance to substitutions to deal with shortages
Theoretical concept	Response of pharmacists and patients

References

1. World Health Organization (WHO). WHO Director-General's Opening Remarks at the Media Briefing on COVID-19 - 11 March 2020. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19—11-march-2020.
2. Saliba AN, Taher AT. A land in agony: COVID-19, economic collapse, political corruption, and a deadly blast. Am J Hematol 2021;96(1):E1–e2. https://doi.org/10.1002/ajh.26029.
3. Perry T, Creidi I. From golden age to war and ruin: Lebanon in turmoil as it hits 100. Reuters 27 August 2022. https://www.reuters.com/article/us-lebanon-security-blast-centenary-insi-idUSKBN25N1PO. Accessed 19.07.2022.
4. Majed R, Salman L. Lebanon's thawra. Middle East Report 292/3 (Fall/Winter 2019); 2022. https://merip.org/2019/12/lebanons-thawra/.[Accessed 19.07.22].
5. El Dahan M, Bassam L. Lebanon currency drops to new low as financial meltdown deepens. Reuters 13 June 2021. https://www.reuters.com/world/middle-east/lebanon-currency-drops-new-low-financial-meltdown-deepens-2021-06-13/. [Accessed 19.07.22].
6. Lebanese pound: the most undervalued currency in the world. Arabian Bussiness; 5 October 2020https://www.arabianbusiness.com/industries/banking-finance/452653-lebanese-pound-the-most-undervalued-currency-in-the-world. [Accessed 19.07.22].
7. Blair E. Explainer: Lebanon's financial crisis and how it happened. Reuters 23 January 2022https://www.reuters.com/markets/rates-bonds/lebanons-financial-crisis-how-it-happened-2022-01-23/. [Accessed 19.07.22].
8. Ghantous Ghaida. Beirut port blast death toll rises to 190. Reuters 30 August 2020. https://www.reuters.com/article/us-lebanon-crisis-blast-casualties/beirut-port-blast-death-toll-rises-to-190-idUSKBN25Q08H. [Accessed 19.07.22].
9. UNICEF. *Lebanon.* UNICEF. August 2021https://www.unicef.org/media/109531/file/2021-HAC-Lebanon-August-Revision.pdf. Accessed 19.07.22.
10. Lebanon: Government Recklessness in Medication Subsidy Reform Violates Right to Health and Life. Amnesty International. 16 December 2021https://www.amnesty.org/en/latest/news/2021/12/lebanon-government-recklessness-in-medication-subsidy-reform-violates-right-to-health-and-life/#:~:text=In%20November%202019%2C%20BDL%20reduced,official%20peg%20of%20LBP1%2C507.50.[Accessed 18.07.22].
11. Amnesty International Government Recklessness in Medication Subsidy Reform Violates Right to Health and Life Amnesty International. 16 December 2021. (accessed 19.07.22) https://www.amnesty.org/en/latest/news/2021/12/lebanon-government-recklessness-in-medication-subsidy-reform-violates-right-to-health-and-life/, 2022.
12. United Nations-Lebanon. Emergency Response Plan – Lebanon. https://lebanon.un.org/en/139099-emergency-response-plan-lebanon-2021-2022 2021-2022.
13. Johns Hopkins University COVID-19 Cases. 6 August 2021. (accessed 21.07.22) https://github.com/CSSEGISandData/COVID-19, 2022.
14. Abouzeid M, Habib RR, Jabbour S, Mokdad AH, Nuwayhid I. Lebanon's humanitarian crisis escalates after the Beirut blast. Lancet 2020;396(10260):1380–1382. https://doi.org/10.1016/s0140-6736(20)31908-5.
15. Amensty International. Lebanon: One Year on from Devastating Beirut exPlosion, Authorities Shamelessly Obstruct Justice. https://www.amnesty.org/en/latest/news/2021/08/lebanon-one-year-on-from-beirut-explosion-authorities-shamelessly-obstruct-justice/#:~:text=More%20than%20217%20people%20were,buildings%20up%20to%2020km%20away 2022.(accessed 21.07.22).
16. World Health Organization (WHO). Lebanon Explosion. https://www.who.int/emergencies/funding/appeals/lebanon-explosion-2020 2020.
17. World Bank. Beirut Rapid Damage and Needs Assessment (RDNA). https://www.worldbank.org/en/country/lebanon/publication/beirut-rapid-damage-and-needs-assessment-rdna—august-2020 August 2020.(accessed 21.07.22).
18. Houssar N. *No Anesthesia, No Oxygen: Lebanon Hospitals Flatline as Cash Crisis Hits.* Arab News. 19 June 2020 https://www.zawya.com/en/life/no-anesthesia-no-oxygen-lebanon-hospitals-flatline-as-cash-crisis-hits-qzvk2gsp.
19. Alameddine L. *Arlette Katta Died Exactly One Year After the Aug. 4 Port Explosion, from the Trauma it Caused.* L'Orient Today. 21 August 2021 https://today.lorientlejour.com/article/1272365/arlette-katta-died-exactly-one-year-after-the-aug-4-port-explosion-from-the-trauma-it-caused.html. [Accessed 21.07.22].
20. Zeenny RM, Dimassi A, Sacre H, et al. A cross-sectional survey on community pharmacists readiness to fight COVID-19 in a developing country: knowledge, attitude, and practice in Lebanon. J Pharm Policy Pract 2021;14(1):51. https://doi.org/10.1186/s40545-021-00327-6.
21. Charmaz K. Constructing grounded theory. Introducing Qualitative Methods. 2nd edition ed. London: SAGE; 2014.
22. Glaser B, Strauss A. *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Mill Valley, CA: Sociology Press. 1967.
23. Charmaz K. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis.* SAGE Publications Ltd. 2006.
24. Creswell J, Plano Clark V. *Designing and Conducting Mixed Methods Research.* Thousand Oaks, CA: Sage Publications. 2007.
25. Amin MEK, Nørgaard LS, Cavaco AM, et al. Establishing trustworthiness and authenticity in qualitative pharmacy research. Res Social Adm Pharm 2020;16(10):1472–1482. https://doi.org/10.1016/j.sapharm.2020.02.005.
26. Denzin NK. *The Research Act; A Theoretical Introduction to Sociological Methods.* Chicago: Aldine Pub. Co.. 1970.
27. Carter N, Bryant-Lukosius D, DiCenso A, Blythe J, Neville AJ. The use of triangulation in qualitative research. Oncol Nurs Forum 2014;41(5):545–547. https://doi.org/10.1188/14.onf.545-547.
28. Almedom AM, Tumwine JK. Resilience to disasters: a paradigm shift from vulnerability to strength. Afr Health Sci 2008;8 Suppl 1(suppl 1):S1–S4.
29. Choo EK, Rajkumar SV. Medication shortages during the COVID-19 crisis: what we must do. Mayo Clin Proc 2020;95(6):1112–1115. https://doi.org/10.1016/j.mayocp.2020.04.001.
30. Elbeddini A, Wen CX, Tayefehchamani Y, To A. Mental health issues impacting pharmacists during COVID-19. J Pharm Policy Pract 2020;13(1):46. https://doi.org/10.1186/s40545-020-00252-0.
31. Goff DA, Ashiru-Oredope D, Cairns KA, et al. Global contributions of pharmacists during the COVID-19 pandemic. J Am Coll Clin Pharm 2020;3(8):1480–1492. https://doi.org/10.1002/jac5.1329.
32. Liu S, Luo P, Tang M, et al. Providing pharmacy services during the coronavirus pandemic. Int J Clin Pharmacol 2020;42(2):299–304. https://doi.org/10.1007/s11096-020-01017-0.
33. Watson KE, Schindel TJ, Barsoum ME, Kung JY. COVID the catalyst for evolving professional role identity? A scoping review of global pharmacists' roles and services as a response to the COVID-19 pandemic. Pharmacy (Basel, Switzerland) 2021;9(2).10.3390/pharmacy9020099.
34. World Health Organization (WHO). Medicines shortages: global approaches to addressing shortages of essential medicines in health systems. WHO Drug Inf 2016;30(2):180–185.
35. Russo G, Silva TJ, Gassasse Z, Filippon J, Rotulo A, Kondilis E. The impact of economic recessions on health workers: a systematic review and best-fit framework synthesis of the evidence from the last 50 years. Health Policy Plan 2021;36(4):542–551. https://doi.org/10.1093/heapol/czaa180.
36. European Observatory Health Policy Series. In: *Maresso A, Mladovsky P, Thomson S, et al, eds.* Economic Crisis, Health Systems and Health in Europe: Country Experience. European Observatory on Health Systems and Policies. World Health Organization 2015 (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies); 2015.

37. World Health Organization (WHO). Social Determinants of Health. https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1 2022. (accessed 05.12.22).
38. Lee A. Ukraine: War has an Impact on people's health beyond bullets and Bombs. The Conversation. https://theconversation.com/ukraine-war-has-an-impact-on-peoples-health-beyond-bullets-and-bombs-178062 2 March 2022.
39. Langran C, Mantzourani E, Hughes L, Hall K, Willis S. "I'm at breaking point"; exploring pharmacists' resilience, coping and burnout during the COVID-19 pandemic. Explor Res Clin Soc Pharm 2022;5, 100104. https://doi.org/10.1016/j.rcsop.2022.100104.
40. Hayden JC, Parkin R. The challenges of COVID-19 for community pharmacists and opportunities for the future. Ir J Psychol Med 2020;37(3):198–203. https://doi.org/10.1017/ipm.2020.52.
41. Bou-Saba AW, Kassak KM, Salameh PR. Public views of community pharmacy services during the COVID-19 pandemic: a national survey. J Pharm Policy Pract 2022;15(1):76. https://doi.org/10.1186/s40545-022-00474-4.
42. Meng L, Qiu F, Sun S. Providing pharmacy services at cabin hospitals at the coronavirus epicenter in China. Int J Clin Pharmacol 2020;42(2):305–308. https://doi.org/10.1007/s11096-020-01020-5.
43. Watson KE, Tippett V, Singleton JA, Nissen LM. Disaster health management: do pharmacists fit in the team? Prehosp Disaster Med 2019;34(1):30–37. https://doi.org/10.1017/s1049023x18001152.
44. Watson KE, Van Haaften D, Horon K, Tsuyuki RT. The evolution of pharmacists' roles in disasters, from logistics to assessing and prescribing. Can Pharm J (Ott) 2020;153(3):129–131. https://doi.org/10.1177/1715163520916921.
45. Watson KE, Singleton JA, Tippett V, Nissen LM. Defining pharmacists' roles in disasters: a Delphi study. PLoS One 2019;14(12), e0227132. https://doi.org/10.1371/journal.pone.0227132.
46. Hogue MD, Hogue HB, Lander RD, Avent K, Fleenor M. The nontraditional role of pharmacists after hurricane Katrina: process description and lessons learned. Public Health Rep 2009;124(2):217–223. https://doi.org/10.1177/003335490912400209.
47. International Pharmaceutical Federation (FIP). *FIP Global Humanitarian Competency Framework (GbHCF): Supporting Pharmacists and the Pharmaceutical Workforce in a Humanitarian Arena.* The Hague International Pharmaceutical Federation. 2021 https://www.fip.org/file/5130.
48. International Pharmaceutical Federation (FIP). FIP Covid-19 Information Hub. https://www.fip.org/coronavirus. (accessed 10.07.22).
49. Alameddine M, Bou-Karroum K, Hijazi MA. A national study on the resilience of community pharmacists in Lebanon: a cross-sectional survey. J Pharm Policy Pract 2022;15(1):8. https://doi.org/10.1186/s40545-022-00406-2.
50. Baskin RG, Bartlett R. Healthcare worker resilience during the COVID-19 pandemic: an integrative review. J Nurs Manag 2021;29(8):2329–2342. https://doi.org/10.1111/jonm.13395.
51. Al-Mulki JM, Hassoun MH, Adib SM. Epidemics and local governments in struggling nations: COVID-19 in Lebanon. PLoS One 2022;17(1), e0262048. https://doi.org/10.1371/journal.pone.0262048.
52. World Health Organization (WHO) - Europe Strengthening Resilience: A Priority shaRed by Health 2020 and the Sustainable Development Goals. 2017. (accessed 19.07.22) https://www.euro.who.int/_data/assets/pdf_file/0005/351284/resilience-report-20171004-h1635.pdf, 2022.
53. Whitfield K, Arya V, Austin Z, et al. Developing a global community of practice for pharmacy workforce resilience-meet GRiT. Pharmacy (Basel, Switzerland) 2021;9(2). https://doi.org/10.3390/pharmacy9020110.
54. Lange M, Joo S, Couette PA, de Jaegher S, Joly F, Humbert X. Impact on mental health of the COVID-19 outbreak among community pharmacists during the sanitary lockdown period. Ann Pharm Fr 2020;78(6):459–463. https://doi.org/10.1016/j.pharma.2020.09.002.
55. Rech MA, Jones GM, Naseman RW, Beavers C. *Premature Attrition of Clinical Pharmacists: Call to Attention, Action, and Potential Solutions*, 5(7). 2022:689–696. https://doi.org/10.1002/jac5.1631.