

Original Article

Effect of internet shutdown on postgraduate trainees in Manipur: A qualitative study

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Background & objectives: Internet shutdowns, although rare can be imposed by governments or affiliated entities and can intentionally disrupt online information and communication systems. While justified for maintaining public order, these shutdowns cause substantial economic losses, public suffering, and reputational damage. The internet shutdown in Manipur, initiated on May 3, 2023, due to civil unrest, has affected various sectors. The impact on doctors, amidst an era where internet access is considered as an integral part of practice, warrants deeper exploration of the challenges faced during such a prolonged shutdown period. Therefore, this study was conducted to explore the impact of internet shutdown among postgraduate trainees from two tertiary care hospitals in Manipur.

Methods: A study was conducted in two tertiary healthcare centers in Manipur from July to August 2023 among medical postgraduate trainees. Participants were selected using purposive sampling. Twenty-two in-depth interviews (IDIs) were conducted, recorded, and transcribed verbatim. Thematic analysis was done to identify codes, categories and themes.

Results: This qualitative study was undertaken among postgraduate trainees in two different academic institutes. A total of 21 IDIs were carried out. The major themes emerged from the study, namely, impact on professional life, impact on personal life, social consequences and coping. Internet shutdown affected patient care such as seeking timely opinions from consultants, delays in sharing patient reports and inconveniences in the hand-off process and the academic performance of postgraduate trainees like unavailability of study materials or keeping up with recent advancements. On a personal level, it negatively affected communication with family and friends, mental well-being and caused inconvenience in shopping and transactions. The study also found some positive impacts, such as less screen time leading to better sleep and increased physical activities.

Interpretation & conclusions: The findings of this study suggest that the internet shutdown significantly affected both the professional and personal aspects of postgraduate trainees' lives in Manipur. The implementation of a targeted ban on social media platforms and the establishment of designated internet access points are proposed as potential alternatives.

Key words Internet shutdown - postgraduate trainees - public suffering - qualitative study - screen time

The internet is now integral to modern life^{1,2},
reshaping how we work, communicate, and learn.

It facilitates rapid communication *via* email and
messaging, grants instant access to vast information

resources, and acts as a conduit for online education^{3,4}. Additionally, it has revolutionized commerce, enabling e-commerce, online banking, and digital transactions. It also fostered global social connections, facilitating relationships and encouraging the exchange of ideas^{5,6}. The internet plays a vital role in healthcare⁷, enabling rapid access to patient data for more precise diagnoses and disseminating the latest medical research and treatment guidelines.⁸ It supports telemedicine, allowing remote consultations and medical advice. Overall, the internet catalyses progress, convenience, and connectivity in shaping modern daily life.

Internet shutdowns often involve complete blocks of internet connectivity or accessibility to affected services⁹. Internet shutdowns, though occasionally deemed necessary for public order, are often imposed arbitrarily, resulting in substantial economic losses¹⁰, public suffering, and severe reputational damage to the country⁵.

Internet shutdowns have been employed for diverse reasons in the past¹¹⁻¹⁵. Shutdowns serve as an early and preventive measure to deter riots, control the dissemination of government-related information, impede activist communication, curb the spread of rumors/fake news during unrest, or prevent exam cheating^{16,17}. The internet shutdown in Manipur since May 3, 2023, amid civil unrest, endured for over seven months (till December 2023), impacting all sectors. However, this particular study was undertaken after only two months of internet shutdown. Examining the challenges doctors face during this prolonged shutdown, especially in an era where internet access is considered a fundamental right, is crucial. Postgraduate students, serving as healthcare providers and learners, are in their early careers and at a critical stage of professional development; hence, they are likely to hold varied perspectives on the shutdown's impact on the medical community. Therefore, this study explored the impact of internet shutdown among the postgraduate trainees in two tertiary care hospitals in Manipur.

Materials & Methods

This qualitative study using the grounded theory approach was conducted by the department of Community Medicine, Regional Institute of Medical Sciences, Imphal, Manipur, India, between July 2023 to August 2023 after obtaining ethical clearance from the Institutional Research Ethics Board.

Study sample: The study sites included an autonomous institute under the Ministry of Health and Family Welfare, Government of India (college 1), and a State-funded medical college (college 2), catering to 449 and 183 postgraduate trainees, respectively, from different parts of the country. Prior permission was taken from the respective authorities of both institutes before conducting the study. Fifteen interviews were planned initially. Participants were recruited purposively until the theoretical saturation point was achieved. We included only those students who worked in their respective institutes for two months since the internet shutdown.

Interviews: Two of the investigators (Postgraduate trainees), trained in qualitative research, conducted the interviews. The researchers prepared the interview guide after an extensive literature review and expert opinion. Piloting of the interview guide was done, and changes were made accordingly. Participants were approached in their departments and interviewed privately in the doctor's room, maintaining confidentiality. After explaining the purpose of the study, informed written consent, which specifically mentioned that the interviews will be audio-recorded, were obtained from each participant. The participants were reassured about their anonymity during the data collection. Data were collected using in-depth interviews (IDI) with the help of an interview guide. The participants were informed that at the end of the interview, they can review and delete/add parts of the interview. All the interviews were recorded using an audio recording device. The audio recordings were transcribed on the same day by the respective interviewer and codes were assigned manually after thorough reading and re-reading of the data. To protect the confidentiality of the data, unique numeric codes were assigned for the transcribed data. Theoretical saturation was achieved after 20 interviews, as evidenced by the emergence of no new insights, and an additional two interviews were conducted to confirm saturation. The thematic analysis comprised familiarizing with the data, initial code generation, grouping codes into categories and identifying underlying themes through iterative searching, which were reviewed and refined to ensure that they accurately represented the data. The researchers involved in the interviews were independently assigned the codes. Any differences between coders were reconciled through a consensus.

Table. Sociodemographic characteristics of the participants (n=22)

Variable	n (%)
Age in completed yr (mean±SD)	29.8±3.6
Range (in yr)	25-40
Gender	
Female	12 (54.54)
Male	10 (45.46)
Marital status	
Married	4 (18.18)
Unmarried	18 (81.82)
Home State	
Manipur	11 (50)
Tripura	1 (4.54)
Arunachal Pradesh	1 (4.54)
Meghalaya	1 (4.54)
Mizoram	1 (4.54)
West Bengal	1 (4.54)
Tamil Nadu	2 (9.09)
Karnataka	2 (9.09)
Haryana	1 (4.54)
Nagaland	1 (4.54)
Branch/department	
Obstetrics & gynecology	1 (4.54)
Paediatrics	4 (18.18)
Community medicine	3 (13.63)
Psychiatry	1 (4.54)
General surgery	2 (9.09)
General medicine	5 (22.72)
Physiology	3 (13.63)
Biochemistry	2 (9.09)
Anatomy	1 (4.54)

Results

Twenty-two IDIs were carried out in this study, of which 14 were from college 1 and eight were from college 2. The average duration of the interview was 25 minutes. The minimum and maximum durations were 15.2 min and 27.55 min, respectively. The socio-demographics of the participants are shown in table. The mean age of the participants was 29.8±3.6 yr, and 54.5 per cent were females. Half of the participants were originally from Manipur, and the rest were from different parts of the country. The maximum number of participants were from the department of General

Medicine. Four key themes and eleven categories were identified through the IDIs. The themes were impact on professional life, impact on personal life, social consequences, and coping.

Theme 1: Impact on professional life:

Affects patient-care: In healthcare, clinical and emergency services were affected the most. One such example was the hand-off process, a critical component of patient care, which was halted, particularly during shift changes and department transfers. This interruption accentuated the importance of reliable hand-off services in maintaining efficient care and preventing potential errors. Participants opined that previously, it was more accessible and more convenient to share patient information through social media. However, after the internet shutdown, it had a detrimental impact.

“We must communicate using any available means. For every patient we receive and any patient we have to look after in the wards, our primary mode of communication was through WhatsApp. However, the shutdown of the internet has significantly impacted all of us, hindering our ability to elaborate on the patient's condition and discuss ongoing matters. Since the shutdown, chaos has ensued, and we have faced numerous challenges.” (27 yr old male, Internal Medicine)

PG students expressed concerns about delays in seeking opinions from senior colleagues due to difficulties obtaining and sharing patient reports. In complex cases, although it is customary to seek input from seasoned experts, but delays in this process reportedly hindered decision-making, potentially impacting the quality and timeliness of patient care.

“We have encountered difficulties; obtaining reports quickly has become challenging. Sometimes, when facing issues in reading any USG or MRI, we usually send it to our seniors. Now it's difficult to share reports with our senior doctors who are eager to know and start the treatment” (32 yr old male, Surgery)

One of the participants expressed the opinion that retrieving information from both the patient and the caregivers was also affected. In urgent situations requiring prompt medical treatment, obtaining necessary information swiftly is crucial. The reliance on traditional communication methods poses challenges in obtaining accurate and timely information, impacting the swift administration of appropriate medical care.

“Suppose if some poisoning case comes in emergency and we need to inquire about the type of poison involved. Currently, taking photos from home and sending them is not feasible. Additionally, when we inquire about the patient's previous medication, communication is limited to phone conversations. In the past, they could send photos, allowing us to easily identify the type of drug involved” (27 yr old male, Internal Medicine)

Affects academics: The prevailing view among the participants was that the internet is a crucial resource for them when it comes to obtaining information and staying informed. Many individuals conveyed that they heavily depend on the vast online resources to enhance and update their knowledge.

“This internet shutdown poses a significant challenge for us, especially since we are currently engaged in our studies and doing our post graduate training. We often rely on the internet for referencing for our presentations and studies. So, coping with such a situation is really difficult for us...” (33 yr old female, Physiology)

“Having an internet connection is like having a textbook in your pocket or you can always google, you can always go to YouTube and see for some educational material where you can utilize it. So, it is a bit difficult losing the internet. “ (30 yr old female, Community Medicine)

“...The recent advances, those journal updates... we can't go through this one ...any of the updates and ...it's been like 2-3 months so... every week there used to be update from the journals but for three months we have to wait like that .. So ..it's very difficult for recent advances and all” (33 yr old female, Community Medicine)

Theme 2: Impact on personal life:

Digital disconnect's impact on social bonds: Participants voiced concerns over reduced social interactions caused by the internet shutdown. They highlighted difficulties connecting with others and staying updated on acquaintances' lives without social media. Some emphasized the importance of internet-based video calls to communicate with family and friends, noting disruptions caused by the shutdown, which challenged communication and staying in touch with loved ones.

“We become somewhat disconnected, you know. You feel a bit distant. Nowadays, with social media, you can connect with everyone daily. There's no need to physically visit and inquire about their well-being. Through the internet and social media, you can always converse with them, arrange meet-ups effortlessly.” (33 yr old female, Community Medicine)

“But here we are, far from our home State. The only link connecting our families is through mobiles and the internet, enabling us to make video calls. Being distant from our families, we rely on the internet to communicate with them. Despite daily calls to our parents and everyone else, not being able to see their faces makes it difficult for us to stay here. (33 yr old male, Anatomy)

Psycho-emotional effects: Several participants expressed restlessness due to an unexpected internet shutdown, revealing discomfort caused by their heavy reliance on the internet in daily activities. The sudden disruption disrupted routines, underscoring the internet's significant role in their daily lives.

“In the beginning, I was okay with the internet shutdown for the first 3 or 5 days. However, as they kept extending it, the frustration also prolonged because we need the internet every day. It's comparable to a person dependent on something. I think everyone felt that way in the initial days. I experienced that phase too because I had to find a way to get internet somehow.” (26 yr old male, Psychiatry)

Some respondents reported feeling left out because they no longer use social media apps such as WhatsApp or Facebook.

“Everyone is using this social app media app WhatsApp, Facebook we.. our family we used to interact through these only ... so they are interacting daily in the WhatsApp group. sharing photos, videos, chatting with each other, I feel sometimes left out.” (30-year-old female, Obstetrics and Gynecology)

Hassle in shopping and transactions

Some participants noted increased wait times at ATMs due to the lack of online transactions, leading to inconvenience. Previously reliant on online shopping services, they faced challenges accessing basic conveniences during the internet shutdown. The combination of longer ATM queues and the absence of online shopping apparently caused notable inconvenience to these individuals.

“The most challenging aspect currently is the transaction process. Previously, we relied on digital payment methods like G-pay, but now we're forced to use ATMs, leading to considerable time wasted in queues. The current internet restriction exacerbates this time drain” (35 yr old male, Pediatrics)

“Obtaining essentials like books or daily necessities has become impossible. Even basic needs such as food, which we used to order from Swiggy or Zomato, are no longer an option. Our odd working hours leave us unable to physically purchase items. The once-useful online ordering and delivery services are now unavailable” (30 yr old female, Obstetrics and Gynecology)

Positive consequences: The study also found some positive outcomes of the internet shutdown. Participants reported a significant increase in face-to-face interactions with friends and family, prioritizing meaningful connections over online distractions. Without social media and multimedia, they allocated more time for self-reflection, leading to reduced screen time and improved sleep quality. Additionally, some participants saved money by avoiding online impulse purchases and engaging in new physical and extracurricular activities, utilizing their newfound free time.

Theme 3: Social consequences:

Going backwards: Several participants conveyed their concerns about the absence of the internet, highlighting a perception that society was regressing in terms of development. The sentiment shared among these individuals was that the current lack of internet connectivity hindered societal progress and innovation, creating an atmosphere reminiscent of earlier, less technologically dependent eras.

“...In a way, it's a negative development because everything that has been created is supposed to contribute to progress, moving towards the future to enhance and improve everyone's life. When you regress, taking things back to a time when people had just begun to learn and utilize these advancements for the better, it's counterproductive.” (29 yr old male, Surgery)

Unaware of the outside world/ Out of touch with the outside world: Some expressed a profound sense of disconnection from the external world, attributing this

feeling to the information scarcity stemming from the internet shutdown.

“Another problem is that we don't know what's happening around us. Personally, I haven't signed up for a newspaper, so not knowing what's going on in the world makes me feel a bit uneasy. It's not good to be unaware of what's happening worldwide, and not being informed about general news can limit your knowledge. That alone can slow down your understanding of things.” (28 yr old male, Medicine)

Economic consequences: The participants pointed towards the economic challenges they are currently facing. The cessation of activities such as trading in the stock market has been abrupt and has led to substantial financial losses.

“This ban is hurting us in many ways, especially financially. Personally, for me, trading in the stock market and all these sorts of things suddenly came to an end, causing significant losses. It's affecting various areas and making things difficult.” (28 yr old male, pediatrics)

Theme 4: Coping:

Finding alternatives: Some participants elaborated on different ways in which they adapted to the current situation, such as reading more books offline rather than depending on the internet for information and using SMS to stay connected with their loved ones instead of internet-based apps.

“Since there's no internet, we can't just Google anything, so the only option is to find information from books. Now, our visits to the library have increased. If I'm alone and free, I spend my free time watching movies that I have on my hard drive” (31 yr old female, Physiology)

Discussion

The present study utilised a qualitative research approach to explore the impact of internet shutdown on the day-to-day lives of postgraduate trainees in two tertiary care hospitals in Manipur. The analysis of the IDIs provided a comprehensive understanding of the multifaceted challenges faced by postgraduate trainees during the internet shutdown.

The findings revealed that the ban on Internet services disrupted essential activities, adversely affecting the academic pursuits of postgraduate trainees.

The inability to access online resources hindered their ability to stay updated about all the latest medical advancements, potentially impacting the quality of patient care and the overall learning experience.

The respondents elaborated on the information inaccessibility during studying and the difficulty faced during the preparation of their presentations and getting access to the latest updates without the internet, this finding aligns with research conducted in Jharkhand, Ranchi¹⁸, where 75 per cent of participants (60 individuals) reported significant disruptions to daily study-related activities due to internet shutdowns. Similar findings were reported in another study, where 48 per cent of the private practicing participants (43 individuals) in Zimbabwe cited that their online learning was negatively affected¹⁹. The consistency of these findings across the studies from different regions^{4,8} suggests that these internet shutdowns profoundly impact the academic community, hindering their ability to access information, prepare presentations, and engage in online learning.

Furthermore, the study highlighted the broader implications of the internet shutdown on the psychological well-being of postgraduate trainees as reported in previous study by Satriawan *et al*²⁰. The digital connectivity that the internet provides is not merely a professional tool but also a means of maintaining social connections and emotional support networks^{2,13}. The isolation from the lack of internet connectivity emerged as a significant theme, leading to increased stress and a sense of detachment among trainees. Policymakers and stakeholders must consider these broader implications when deciding on internet shutdowns, weighing the potential benefits against harm to individuals' mental health and well-being.

This study also highlighted that the participants' sleep duration was extended due to the absence of internet access and improved their sleep quality; where our participants were post-graduate doctors from a tertiary care hospital, the same findings were seen in a study conducted among female nursing students²¹. Participants in the current study highlighted how internet shutdowns disrupted communication with fellow doctors (both physicians from different departments and also opinions from senior doctors), delaying treatment, which aligns with findings from study from a Zimbabwean¹⁹ study where 97 per cent of private practicing physicians reported disrupted communication with patients and colleagues. The

adverse impact of internet shutdowns on professional lives, particularly patient care, has also been reported, with Zimbabwean physicians lamenting the negative effects on healthcare service delivery¹⁹ similar to the findings of the present study.

Participants also reported struggling to access online services for essential items like food during internet shutdowns, a challenge similarly observed by Qadir *et al*²², who found that online shopping restrictions in Kashmir severely impacted entrepreneurs' online transactions.

The study's strengths include a diversity of perspectives among the healthcare professionals and in-depth exploration in specific areas such as patient care, academic impact, personal life, psychological effects, socialization and economic consequences, which extracted rich qualitative data. However, this study included only postgraduates; perspectives from doctors in their early and mid-career. Including senior doctors could have added further value and diversity to the premise. Other limitations of this study were the non-inclusion of all the departments in the tertiary care centers and the potential impact of social desirability bias on the reported experiences stemming from individual perspectives. In the event of future internet shutdowns, we recommend setting up dedicated internet hubs within the hospital campus, specifically in the library and lecture hall, to facilitate seamless access to critical online resources. Furthermore, providing internet access to healthcare staff during shutdowns would help maintain continuity of care and support informed decision-making.

In conclusion, this qualitative study provides a holistic view of the challenges faced and the adaptive strategies employed by healthcare professionals during internet shutdowns. Future research could expand the scope to include a more extensive and diverse sample, allowing for a more comprehensive understanding of the implications of internet shutdowns on healthcare professionals. Combining qualitative insights with quantitative data (mixed-method study) could offer a more thorough understanding of the impact of internet shutdowns. Examining the effects of internet shutdowns over an extended period (longitudinal study) could reveal how individuals adapt and cope over time.

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References

- Botta A, De Donato W, Persico V, Pescapé A. Integration of cloud computing and internet of things: a survey. *Future Gener Comput Sys* 2016; 56 : 684-700.
- Temnikova LB, Vandsheva AV. Social media as an integral element of modern communication. *Commun Stud* 2022; 9 : 274-84.
- Gupta R, Kumar K. What missing the Internet means in digital era: A case study of longest ever Internet blackout in Jammu & Kashmir. *IJAST* 2020; 29 : 155-171.
- Tarisayi KS, Munyaradzi E. A teacher's perspective on the impact of internet shutdown on the teaching and learning in high schools in Zimbabwe. *Hum Behav Emerg Tech* 2020; 1 : 1-7.
- Legal Service India E-Journal. *Internet ban in India. Legal Service India E Journal*. Available from: <https://www.legalserviceindia.com/legal/article-5209-internet-ban-in-india.html>, accessed on October 16, 2014.
- Internet Society. *Let's keep the Internet on for everyone*. Available from: <https://www.internetsociety.org/let's-keep-internet-everyone>, accessed on February 24, 2024.
- Okyere Boadu R, Adzakupah G, Kumasenu Mensah N, Okyere Boadu KA, Kissi J, Dziyaba C, et al. Healthcare providers' perception towards utilization of health information applications and its associated factors in healthcare delivery in health facilities in Cape Coast Metropolis, Ghana. *PLOS One*. 2024; 19 : 1-18.
- Misgar SM, Wani ZA, Ayoub A. Impact of Internet blockade post abrogation of article 370 of Indian constitution on doctoral students pursuing research on Kashmir. *Lib Phil Pract* 2021: 6229.
- KeepItOn. *The state of internet shutdowns around the world, the 2018 #keepiton report*. Available from: <https://www.accessnow.org/wp-content/uploads/2019/07/KeepItOn-2018-Report.pdf>, accessed on July 14, 2023.
- Wagner B. Understanding shutdowns: A case study from Pakistan. *Int J Comm* 2018; 12 : 3917-38.
- Freyburg T, Garbe L. Authoritarian practices in the digital age: Blocking the bottleneck: Internet shutdowns and ownership at election times in Sub-Saharan Africa. *Int J Comm* 2018; 3896-916.
- Marchant E, Strelau N. The Changing landscape of internet shutdown in Africa: A spectrum of shutdowns: Reframing internet shutdowns from Africa. *Int J Comm* 2020; 14 : 4327-42.
- Passah AL. Internet blackouts in Meghalaya: A case of emerging complexities in the digital age. *Media Cult Soc* 2021; 43 : 1515-27.
- Momen MN, Das D. Mediated democracy and internet shutdown in India. *J Inf Comm Eth Soc* 2021; 19 : 222-35.
- Bhatia KV, Elhussein M, Kreimer B, Snapp T. Protests, Internet shutdowns, and disinformation in a transitioning state. *Media Cult Soc* 2023; 45 : 1101-18.
- Qadir S, Jaggarwal S. The study on reasons of internet shutdown in J&K. *MSUB J* 2022; 55 : 1-9.
- Ayalew YE. The Internet shutdown muzzle(s) freedom of expression in Ethiopia: competing narratives. *Inf Commun Technol L* 2019; 28 : 208-24.
- Upadhyay SK, Dutta SC, Kumar P. Impact of the internet shutdown in Ranchi, Jharkhand: A survey. *J Emerg Tech Innovative Res* 2022; 9 : 553-7.
- Madziwa PK. Effects of network disruptions on health service delivery among private practicing physicians in Bulawayo Metropolitan Province, Zimbabwe. *IJHISI* 2021; 14 : 17-21.
- Satriawan I, Elven TM, Lailam T. Internet shutdown in Indonesia: An appropriate response or a threat to human rights. *SL Rev* 2023; 7 : 19-46.
- Borgohain U, Thongam B, Chappain M. A study to explore the impact of internet shutdown among nursing students in selected colleges, Guwahati, Assam. *Int J Sci Res* 2019; 9 : 1670-3.
- Qadir S, Dar AA. How internet shutdowns affects the entrepreneurs in Jammu and Kashmir. *IJABIM* 2021; 12 : 109-16.

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