# Adoption of health technology; unveiling the issues in public hospitals during COVID Pandemic

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**Abstract**
The current technological era is marked for high generation of clinical data by healthcare providers on day to day basis. Developed countries store this electronic medical record digitally as a storehouse of hospitals but government hospitals in developing countries like Pakistan are struggling. Traumatized by COVID pandemic, world is under constant competitive pressure and social influence for adoption of health technology irrespective of developed, under-developing, as well as emerging states. The current study targeted to unveil issues confronting government hospitals in Pakistan regarding implementation of electronic medical records (EMR). This research employed the social constructivism as an approach to comprehend employee perceptions within the prevailing sociopolitical and cultural regime. 20 participants were selected for data collection. A score of individual as well as institutional factors were identified that impede the adoption and implementation of EMR in government hospitals of Pakistan. Key issues unveiled as deficient planning, restricted IT skills, inefficient professional qualification, and excessive workload that hinder integration of other systems with EMR. Three established theories DOI, AMO and institutional were consulted to address these issues and recommend strategies to implement EMR in a successful way in government hospitals of Pakistan.
**Keywords:**
Health technology, Issues, Electronic Medical Record, Government hospitals

**Introduction**
The current technological era is marked for high generation of clinical data by healthcare providers on day to day basis. Developed countries store this electronic medical record digitally as a storehouse of hospitals (Shah, & Khan, 2020) but government hospitals in developing countries like Pakistan are struggling (Qureshi, Qureshi, Khan, Nawaz, & Shah, 2014).

The COVID Pandemic endured to accentuate the challenges endangering public health declared an emergency by the world health organization (WHO) for entire the globe on 30th January, 2020. Different countries of the world responded differently to overcome threat of this outbreaks

as per their vulnerable capacity yet health technology presented countless solutions to alleviate these challenges but despite evolving could not make its mark (Jason, 2020). Time and again, humanity looks towards these technologies to provide healthcare through innovative means and bring wellness for them (Andarge, Fikadu, Temesgen, Shegaze, Feleke, Haile, & Glagn 2020).

Contrary to the obscurity posed by the COVID-19 2$^{nd}$ wave, a flickering light comes through the control exercised by digital tools to protect patients' health record data for prospective times. For instance, telemedicine has taken a new leaf in providing health care and government along with international agencies are forced to recognize the key role of electronic maintenance of patients' data. In the context of a developing country like Pakistan, this milestone is yet to achieve in terms of achieving healthcare digitalization in a systematic and reliable manner (Naeem, & Alqasimi, 2020).

Maintenance of electronic medical record abbreviated as EMR, highlights as "an electronic record of health-related information on an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organization," (Andarge,et al., 2020).. Physicians get a score of benefits from this capacitated system. Nurses, paramedic and IT technicians can use EMR as utilization of secondary data for efficiency, and quality enhancement at government hospitals (Shah, & Khan, 2020). Research has acknowledged that EMR has become an integral part of advanced healthcare services as it offers patients data including patient history,prescribed medication, lab reports, and patient history (Akhlaq, McKinstry, & Sheikh, 2020). Several benefits as associated with EMR system that includes increased quality of patients' healthcare, taking along electronic record, efficient utilization of resources, promoting accurate clinical decisions, augmenting patient satisfaction, limiting probability of error, augmenting the efficiency as well as effectiveness at the workplace. In spite of the multifarious advantages linked with EMR, it faces a number of implementation barriers which raises the probability of meeting failure to the extent of 90% particularly in developing countries (Hasanain, 2015). For instance, lacking computer skills, low standards of education, and lacking motivational support pose greater barriers in developing countries to embrace an innovative technology like EMR (Khalifa, 2017). Literature on advanced technology established that there exists no solitary framework that could streamline universal implementation of EMR particularly in the countries where educational and environmental factors are not supportive (Uluc & Ferman, 2016). Both developed as well as developing countries face challenges and obstacles dissimilar in public as well as private hospitals leaving negative effects.

In spite of enormous significance of EMR in healthcare organizations, the pace of adopting EMR as healthcare technology is exceedingly low in government hospitals in Pakistan as these hospitals have tall structure, low skilled labor, lack of professional education as well as computer skills, less orientation of health technology comparing with private sector hospital (Shah, & Khan, 2020). The main resistance for stopping the implementation of EMR came from employees of public sector hospitals (Heart, Ben-Assuli, & Shabtai, 2017). EMI implementation therefore, faces complications and difficulty in government hospital. Government hospitals involve multiple stakeholders as well as decision makers including Ministry of health, interior ministry, local administration, federal administration and defense ministry that influence the implementation of novel health technology (Qureshi, et al., 2014).

One thing is more striking that government hospitals in Pakistan particularly in rural areas are still working with traditional procedures (paper based medical record of patient) that raises the cost incurred on operational and administrative expenses while in urban areas, these hospitals are

struggling to make shift to healthcare technology(Qureshi, et al., 2014). This scenario inspires the researcher to unearth the challenges and present a roadmap that could facilitate the implementation of EMR in government hospitals of Pakistan.

The following objectives are drawn from the above: The 1st objective was to carry out critical review of the literature regarding public healthcare particularly EMR. The 2nd objective was to explore the causes that impede implementation of EMR in government hospitals of Pakistan. The 3rd objective was to gather views of the health professionals concerning the issues confronting implementing EMR in the cultural context of Pakistan. The 4th objective was to specify quality practices that can expedite EMR implementation in government hospitals of Pakistan.

## Literature review

EMR refers to a digital system of maintaining patient record for the purpose of sharing, storing, displaying, and retrieval of required primary and secondary data ensuring safety, and quality of health care with optimal allocation as well as utilization of resources (Essuman, Apaak, Ansah, Sambah, Ansah, Opare, & Ahinkorah 2020). Research is evident that EMR is capacitated to provide diagnostic, lab results, prescribed dose of medication along with history of medical record of patient subsequently, developed world remains curious to utilize secondary data provided by EMR but many developing countries including Pakistan still lag behind and looking for implementing EMR system in government hospitals though their outcome is not similar in both private as well as government hospitals. Several private hospitals i.e. National Hospital, Lahore, Hameed Lateef Hospital, Adil hospital, Ittefaq Hospital Lahore Pakistan are maintaining successfully EMR system, however, government hospitals like Mayo Hospital, Services Hospital, Sir Ganga Ram hospital and General Hospital, Lahore are struggling to employ EMR system; despite the fact that digital technologies including EMR presents digital environment and novel opportunities to identify needs and take decisions according to deliver healthcare from prevention towards curative interventions besides self-management(Essuman, et al., 2020).

Previous studies have highlighted paucity of sharing of knowledge based information sharing, low employee involvement, lacking employee experience and so low employee commitment like barriers that impede the implementation of EMR in government hospitals. Therefore, both the sectors government and private hospitals face different kind of challenges as well as implementation strategies (Khalifa, 2017; Uluc & Ferman, 2016).

As said by Willian Shedd, technology carries little value until its potential is exploited. As 2021 is finding its shape at the cruel hands of the coronavirus pandemic, digitalization refers to a ship laden with capacitated technology to enable mankind for combating the infectious disease. But in developing countries, technology is still sailing in harbor and needs to sail outwards to fine tune the operating procedures widely needed by humanity but the promise is yet unfulfilled hampered by the indecision and uncertainty of bureaucracy. Since, the pandemic waves are showing turbulence amid uncertainty, this research study endeavors to seek potential enablers along with recommendations to promote health care learning in public hospitals of Pakistan during COVID Pandemic.

Detecting the gap, COVID-19 has created a wide negative divide amid clinical as well as public health professionals in terms of reflecting weak data ecosystems on efficiency as well as receptiveness of health system in both developed and less developing nations. Acquiring a comprehensible data with robustness has become a colossal challenge; this is mainly due to insufficient processes, provoked by divergent models, methodologies, as well as technologies

across the world that hinder compilation, accumulation, and evaluation mainly attributed to centralized tailored systems resultantly there is an inadequate investment in technology and use of electronic pipelines for collection and reporting (Bates, 2002). Mobile apps like digital tools are capacitated to strengthen contract tracing strategies to control and get the reversal of the COVID-19 spread. This option was widely followed by countries globe wise to support health authorities in controlling the continuity of COVID through app use facilitating the organizations to get them self-quarantine, and tested for isolation.  Academics as well as researchers have emphasized the need to exchange rapid data as well as effective interoperability of public health issues (Jason, 2020).

Health care has become an integral part of information technology (IT) because this sector has substantially evolved through electronic health record (HER), remote patient monitoring (RPM) and population health management tools (Pahayahay, & Khalili-Mahani, 2020).The medical data generated from these sources are vast and cumbersome, thereby leading to problems with the quality of medical data, such as complicated analysis, diagnosis and prediction and the risk in data confidentiality due to the increasing number of cybercrime cases.

Healthcare records or medical records have proven their importance to patients because of the valuable asset recorded in consonance with their point of view. Although sharing patient information amongst various healthcare providers through EHR may boost diagnostic accuracy, the health information repository may become a single point of failure and may be targeted by attackers resulting in ransomware attacks or denial of services. Therefore, data security is an important component of healthcare applications and plays a key role in protecting sensitive data. Healthcare data include patient details, which should not be disclosed to any untrusted third-party because of safety issues and misuse of information. This particular type of data comprises a list of patient information in medical repositories gathered from the beginning of patient illness to recovery. Consequently, this feature may lead to the disclosure of patients' data and may not fulfil the legal requirements of the Health Insurance Portability and Accountability Act of 1996 (HIPAA). However, sharing and accessing medical records in EHR is extremely significant to receive intelligent and advanced medical services (Deely, 2020).

Pakistan, a country with a population of over 21000 million is densely populated, has weak healthcare infrastructure as per its Georgraphy (8,81,913 km) and diversity among people. Though government in Pakistan remained flexible in taking situational measures such as enhancing testing and diagnostic facilities, setting up quarantine and mobilizing administrative and healthcare machinery within the ambit of its constrained resources and sociocultural and economic realities yet fears about spread of COVID are ubiquitous (reference from Pakistan). According to statistics, 32.4% of the Pakistani population had insufficient health literacy with a low rating of 17.6% while 65.9% patients having denied access to adequate health literacy as they are granted negligible formal schooling between 0 to 4 years (Saniya Sabzwari, 2017).

Hasanain and Cooper (2014) unveiled different dimensions relating to sociocultural, political, religious, economic, and education that vary among different countries. For instance, the national culture of Pakistan reflects collectivism and resists uncertainty hence employee as well as resistance from organization is high for implementing EMR in government hospitals (Hasanain, 2015).

**Theories**

A number of past studies selected theories on the technology adoption model (TAM) (Kim, Lee, Hwang, & Yoo, 2015), unified theory of acceptance and use of technology (UTAUT)

(Venkatesh, Sykes, & Zhang, 2011), and diffusion of innovation (DOI) that worked to implement EMR successfully (Tucker, 2009). Critical evaluation reveals that TAM ignored the significance of employee experiences, inherent motivation, knowledge and skills essential to implement EMR in government hospitals (Hasnain, 2015). While DOI theory mostly dealt with health technology and significance of leadership skills required in relation to implementing health technology (Greenhalgh, Stramer, Bratan, Byrne, Mohammad, & Russell, 2008). In this scenario, relying on a solitary theory is not suffice to understand the involvement and influence of different factors like organizational structure, resources, culture, in addition to political force for EMR implementation in governments hospitals. Another theory based on ability, motivation and opportunity highlights the significance of motivation, employee skills, intentions lead to learn for adopting new technologies for private or public organizations (Govindaraju, Hadining, & Chandra, 2013). Public organizations experience the role and influence of social structure as well as political forces while implementing EMR in a direct or indirect manner while Institutional theory focuses more on social structure based on social as well as cultural norms and values, rules, and procedures that help to determine social as well as employee behavior to adopt technology (Phiri & Guven-Uslu, 2018). Past studies established that institutional forces encompass sociopolitical, and cultural facets for enhancing the resistance level, organizational politics, as well as negative attitude leading to adoption of technology (Aslam, Muqadas, & Imran, 2018). Driven by the facts, the current study is determined to comprehend issues pertaining to implementation of EMR and develop a theoretical framework based on AMO as well as institutional theories.

## RESEARCH METHODOLOGY
### Research design
Understanding philosophical commitment is imperative to select a suitable strategy (Guetterman, Fetters, & Creswell, 2015) thus helps to understand and solve the specific research problem (Colorafi & Evans, 2016). According to ontological perspectives, a reality is split into various cultural as well as multi-score realities to reach a knowledge based reality (Naeem, 2019). Following the relativist ontological approach, this study aims to reveal different perceptions and experiences towards EMR implementation by adhering to a qualitative inquiry that utilizes thematic analysis to get in depth understanding of issues subsequent of adoption of health technology in government hospitals where medical system is in jeopardy during COVID Pandemic. Thematic analysis presents methodical examination of the data through an interpretive procedure unveiling patterns lying inside that helps to form expressive themes. By this method, data was read multiple times to get meaningful themes to codify these.

### Participants
The convenience sampling method was preferred by the study that included medical staff at all cadres that faced COVID patients and their health record. The rationalization of adopting the convenience sampling technique was based on easy access, convenient for the researcher, geographical location along with deployment of resources (Guetterman, Fetters, & Creswell, (2015). The criteria of selecting participants was based on volunteership for providing information readily, had association with the government hospital for the last 5 years, aging above 25 years, and their job directly or indirectly influenced by EMR implementation. Initially, 25 participants were selected, however five out of them withdrew on personal grounds. The final sample came up with 20 participants (Table 1) those showed their satisfaction with researcher' confidentiality as well as anonymity policy conveyed before conducting interviews.

**Table 1: Characteristics of participants**

| Participant No. | Age | Gender | Designation | Experience |
|---|---|---|---|---|
| P1 | 26 | Male | Medical technician | One year |
| P2 | 28 | Female | Nurse | Two years |
| P3 | 30 | Male | Doctor | Two years |
| P4 | 33 | Male | Doctor | Five years |
| P5 | 30 | Male | Doctor | Five years |
| P6 | 32 | Male | Doctor | Five years |
| P7 | 34 | Male | Doctor | Five years |
| P8 | 29 | Female | Nurse | Two years |
| P9 | 28 | Female | Nurse | Two years |
| P10 | 36 | Female | Head Nurse | Four years |
| P11 | 37 | Female | Head Nurse | Four years |
| P12 | 39 | Male | IT technician | Four years |
| P13 | 27 | Male | IT technician | Four years |
| P14 | 29 | Male | IT technician | Four years |
| P15 | 28 | Male | IT technician | Two years |
| P16 | 31 | Male | Para medic | Four years |
| P17 | 35 | Male | Para medic | Four years |
| P18 | 34 | Male | Para medic | Four years |
| P19 | 37 | Male | Para medic | Four years |
| P20 | 29 | Male | Para medic | Four years |

The interview protocols were outlined on the basis of pertinent literature, pre-interviews through building interview questions like
1.  What is your expression about COVID and its horrors in Pakistan?
2.  Do you think skills possessed by you serve during COVID?
3.  What initiatives do you believe government hospitals are required to implement?
4.  What are the challenges that impede ERM implementation in government hospitals?
5.  What is your feeling about the effectiveness of ERM system in Pakistan?

**Data collection**

Time and locale of interview was settled with every interviewer on convenient basis from the perspective of participant. A sound proof environment was created with availability of comfortable room furniture. A recording facility was provided with strict observance of confidentiality. Data collection was planned to initiate by starting interviews from 20 participants. The sample included doctors, technicians, IT staff, administrative staff, Nurses at superordinate and subordinate levels. Each interview on average took time of 30-35 minutes and it took one week to complete the interview activity. No participant exhibited any stress as they were voluntary and had the obligation to quit the interview at any stage. However, no such thing occurred.

**Data analysis**

Process of transcription initiated as the interviews were recorded to analyze data through conducting thematic analysis. According to Braun and Clarke, (2015), a range of analytical methods was recommended to follow orthographic transcription apprising verbatim account to cover verbal and non-verbal expression. For this purpose, transcript was read many times to filter meaningful statements, themes and sub-themes and numbers were assigned to each participants with preservation of anonymity. A research established that codes along with keywords can be highlighted in case of repetition from interviewees (Braun and Clarke, 2006). The researchers pondered the transcriptions to develop a number of codes initially prove supportive to the major themes, in other words, major themes along with codes as well as keywords were built to enhance homogeneity among these elements (Poland, 1995) and connect the ideas. Two major themes are based on issues concerning EMR implementation and quality practices to resolve these issues (Table 2 & 3). Formal permission was sought from the authorities to initiate the proceedings under Ethical standards under the 1964 Helsinki Declaration that abhors the use of plagiarized content, fabrication, and falsification of data with repeated publication.

**Results**

Participants described that the major issues pertain to the different working levels i.e. organizational, personal, financial as well as technical levels. That is why, this research included doctors, technicians, IT staff, administrative staff, nurses at superordinate and subordinate levels as its sample population. Though literature highlights a number of studies that discuss EMR with regard to its implementation in Asian context, yet issues as well as quality practices regarding government hospitals were not discussed. The following table illustrates sub-themes along with their definition, initial codes and keywords that throw light on issues concerning EMR implementation in healthcare sector of government hospitals in Pakistan:

**Table 2: Issues concerning EMR implementation in healthcare sector of government hospitals**

| Theme | Definition | Codes | Keywords |
|---|---|---|---|
| EMR implementations and confronted issues | Identifying issues regarding organizational, personal, Financial as well as technical that destabilize the efficiency of EMR in government hospitals. | Personal issues | Personal values as well as norms<br>High resistance<br>Low IT skills<br>Less qualification<br>Less learning abilities<br>Low motivation along with commitment. |
| | | Hospital issues | Ill training and less guidance |

| | | Personal politics<br>Centralization<br>Intricacy<br>Leadership<br>Slack organization<br>Lack of experts<br>Ill management and less supervisor support<br>Less staff and high work load<br>High turnover<br>Less communication. |
|---|---|---|
| | Financial issues | Uncaring for system development as well as improvement. Less focus on training as well as learning.<br>Low technology adoption |
| | Technical issues | Ill planning to upgrade the prevalent technology for the purpose of improvement.<br>Less interconnectedness<br>Lacking system integration. Lacking ability to utilize EMR data for secondary use<br>Lacking rules as well as regulations.<br>Lacking technical and support staff. More challenges confronting privacy as well as security. |

Sub-themes 1: Personal issues that hinder implementation of EMR effectively in government hospitals of Pakistan

While sharing experiences, P3 said,

*Though I have experience of working in government hospitals for many years yet I have deficiency in computer skills. I could not improve my computer literacy despite trainings were provided on many times. I feel myself in comfort zone when indulging the office activity through paper work that is why we could not focus EMR system to learn its new features and implements its functions. This knowledge gap caused resistance in the organization to effectively implement EMR like novel system.*

*P12 accentuated:*

*As merit in our country is missing, therefore mostly recruitment among Doctors, nurses, IT and lab staff are political or reference backed. They lack proficiency and professional education regarding their subject areas. Though many out of these try to perform well yet mostly staff show hesitancy to learn to operate EMR; they feel that they cannot bear the burden of traditional and new form of working. Therefore, my feeling is that more IT skilled and qualified brains of current age should be recruited and get the quality practices with change in mind set.*

Participants believe that personal issues like deficiency in technical qualification as well as skill pose the potential barriers that hinder implementing EMR in government hospitals. Moreover, this lacking lays negative effects on motivation as well as commitment for embracing EMR as a novel system in government hospitals. This develops a kind of organizational politics as well as resistance to impede the implementation of EMR and prefer the paper shuffling environment. in the absence of motivation amid experienced staff, it is recommended that highly qualified, committed and motivated individuals should be selected for recruitment so that adoption of health technology could be promoted.

**Sub-theme 2 Issues that influence implementing EMR within hospital**

*P20 pointed out*:

Implementation of EMR is stressed upon but hospital staff was given no adequate training or guidance to operate EMR, hence there is a need to seek services of EMR experts so that they could resolve the issues through mentoring and guidance on the spot. Lacking expert mentorship is adding to organizational resistance in form of lacking supervisor support. I think despite having high physical and financial resources, utilization of these resources is an issue that has created slackness in government hospitals.

*P19* while sharing thought said,

I feel…… hospital leadership due to power and influence based centralization is adamant to implement EMR system cannot bring one side change and without involving employees. This enhances the already existing complications as well as resistance against change in form of diffusing technology. While everyone is aware of the fact that implementing EMR is likely to subside uncertainty and facilitate exchange of information.

*P 20* added that

The existing IT staff is unable to provide guidance and module based training due to over workload, therefore, it is not possible for them to impart training to doctors, paramedical, nurses and other staff to run the EMR system seamlessly. Lack of coordination among different levels of management cause challenges in using EMR effectively.

*P 5 said,*

Majority of the staff is habitual of doing paper based office communication while EMR offers electronic communication after learning new techniques and functions. Moreover, mostly staff is politically motivated and their tendency to learn new things is minimal. In this baffling environment, government hospitals must recruit potential candidates for different positions purely on merit and train them in a systematic manner to implement EMR efficiently.

Analysis of participants' opinions, it can be inferred that issues identified by respondents impede EMR implementing in government hospitals. Currently, government hospitals are managed through influence and authority by adopting top down communication causing a great deal of resistant culture in the organization for adopting technology. Moreover, it is highlighted that slackness in the organization is another hurdle in embracing EMR technology and causing under-utilization of resources for diffusing technology. Furthermore, in the absence of adequate training and guidance, using EMR has become a colossal challenge for hospital staff due to

which much staff from different cadres had to leave the job as their commitment and allegiance with the hospital is insignificant. Recruitment of much staff is on political basis that is causing another resisting in implementing EMR. The non-availability of expert staff poses another issue as experts are highly needed factor in successful implementation of EMR.

**Sub-theme 3: Financial issues**

*P25 remarked that*

*In his entire service with the government hospital, he has observed no planning to raise investment in system development of EMR. Besides it, technical issues constantly confront while dealing with the software but hospital management is not agile to address these issues. The users entrusted to work on EMR remain demotivated to learn but without training and in the absence of formal incentives, no development opportunities are in sight.*

*P22 stated that*

*No one is determined to invest in EMR; this is mainly due to lack of requisite skills and financial incentives as the medical staff is already under heavy workload.*

Due to lack of investment from management in EMR, lacking financial incentives to already over burden staff are the issues impeding adoption of advanced technology in government hospitals.

**Sub-theme 4: Technical issues that negatively impede EMR implementation**

*P11 said:*

*Our hospital has IT department but it does not have as skilled personnel as required. That is why, electronic record of patients reflect a number of complaints. There is no support from management to get them adequately trained to deliver contour performance. Furthermore, no practical efforts are rendered to improve and upgrade software to keep the patients database secured as several complaints from patients against hospital staff are pending.*

*P14 uttered:*

*Hospital management must address the deficiency of staff in IT department. IT experts are direly required to hire to improve the electronic data base of patients and keep it secure from trespassing. To keep the patient information private and secure is a big challenge as no rules are there to safeguard the data base. Due to lack of committed IT staff, nothing substantiate can be expected.*

**Sub-theme 3: Financial issues**

*P9 stated:*

*Investing in EMR is the right time for system development as well as improvement. EMR system involves a number of technical issues that needs to be enriched. More investment is needed to equip technical as well as operational staff side by side recruiting the more talented and skilled staff with more division in workload and financial benefits package. The issues of IT and other operational staff entrusted to use EMR if addressed can add to employee motivation level.*

High workload and low financial rewards have affected commitment level of hospital staff due to which many has to leave their jobs. They believe that by dint of EMR, overload of work can be addressed by awarding financial as well as non-financial rewards.

**Discussion**

Since COVID Pandemic impacted government hospitals in Pakistan like rest of the world and its havoc is still underway, it is high time to assess capacity of government hospitals with regard to adoption of advanced health technology particularly electronic medical records for patients. Purpose of this study was to investigate the need to adopt health technology by government hospitals in Pakistan since traumatized by COVID pandemic, also targeted to unveil issues and challenges confronting government hospitals in Pakistan for implementing electronic medical records for patients. Using thematic analysis framework, semi-structured interviews were carried out through face to face keeping social distancing. Analysis of data was done through thematic analysis which revealed that participants recommended different strategies to streamline implementation of electronic medical record (EMR) for patients. A certain range of issues and challenges were pointed out by the participants to mend (Table 2). It was further confirmed that no advancement in health technology is possible until the concerned hospital operational staff is well trained, skilled and motivated enough to handle the system.

Subsequent of critical literature review, the study has been able to detect certain research gaps in the contextual conditions of health care implementation (Cocosila & Archer, 2018). As stated above, national culture of an Asian country that is characterized by power distance, authoritarian style, collectivism, low employee participation and change resistant, as a result of negative effects of this culture, change is obstructed hence use of novel health technology like EMR is not supported and in the long run, negative aspects of culture foil the attempts to formulate and implement any novel application like EMR in government hospitals. Furthermore, rationale of implementing EMR lies with useful of this electronic system that brings down the probability of medical errors and issues clinical alerts (Jacob & Kamath, 2019). Despite, scanty literature is available on implementation of EMR in government hospitals of Pakistan, findings of this study lead to unveil three type of forces such as organizational, personal, and institutional that blocks the implementation of EMR in government hospitals. If gaps in these forces are withheld, successful implementation of EMR can be expedited.

**Conclusion**

Drawn on the above, we argue that public health is heading towards a new paradigm shift towards digital applications from traditional methods to align the public health system with international strategies for regulating, evaluating and using digital technologies to reinforce hospital management for electronic maintenance of patient record. By conducting regular training and awarding performance based incentives to the technical and professional staff, challenges confronting implementation of EMR in government hospitals of Pakistan can be overcome successfully. Audit and accountability system need to be enforced as per international standards.

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