

Quality Improvement Study

Family medicine practice challenges during Covid-19 outbreak, curfew and phased re-opening, lessons to be learned from Jordanian experience

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ABSTRACT

Background: Rapid outbreak of Novel Corona Virus Disease (Covid-19) had a significant disrupts and challenges to many of well-established, traditional structure of medical Care, The family medicine practice in Jordan as many other countries has been challenged and severely strained due to the pandemic as well as the strict lockdowns and curfew that implanted in order to control the spread of the disease, in which major if not all family medicine outpatient's clinics were temporary suspended which negatively impact proper health care delivery to many patients.

Objective: This is to report the challenges we have been faced in Family medicine practice during Corona virus pandemic and it is related strict lockdowns periods, on both patient's care and education levels.

Methods: A Retrospective review of the family medicine out patient's visits at Jordan University of science and technology medical center before the pandemic, during the Pandemic lockdown and curfew, and after the phased opening and resuming the practice under new safety precautions and measures, results we compared.

Additionally, an online questionnaire was sent to a sample of Jordanian family medicine physician in. The questionnaire was to assess the family medicine physician's participation in the treatment or screening of COVID-19 patients, the number of emergency and non-emergency consultations during the lockdown, the effects of the pandemic and the lockdown on their practice and their patient's conditions. (see [Table 1](#), [Fig. 1](#))

The study was done in line with the criteria set by the Standards for Reporting Qualitative Research [1]

1. Results

Comparing March to June 2020 (the lock down period) with the same period in 2019 we observed a drastic reduction in the number of out-patients visits because all outpatient clinics were closed, and all non-Emergent outpatient visits were suspended. A total of 118 Family physician (95 specialist, 23 resident) have participated in the questionnaire part of the study.

More than half of the participants (n = 66, 55.9%) reported providing 50 or less consultations during the lockdown, 50% of the consultations were conducted remotely, and a total of 82 (69.4%) of the 118 participants reported having at least 1 patient whose condition

worsened during the lockdown due to lack or delay in medical care. After the curfew period with phased resuming of the practice, the resulting backlog in the appointments, combined with the prioritisation of covid-19 in secondary care, has led to further shortfalls in diagnosis, care delays and suboptimal management of non-covid patients.

90% the participants (no 106) were concerned about the negative effects on training and educational opportunities and professional development of the family medicine trainee during the pandemic.

2. Conclusion

The Infectious disease pandemics and the resultant lockdown periods causes a significant negative Impact of family medicine practice, with a complete cessation of all outpatient clinics and, with activity limited emergency visits only. These changes have already impacted the dynamics of patient care and might lead to a risk of diagnostic and medication refill delays, which will have severe impacts on patient's health. The stress related to being essential healthcare providers during a pandemic combined with the loss of educational opportunities may have implications for trainee well-being and further exacerbate feelings of burnout, considering our lesson we have learned from Covid -19 outbreak, it is not too early to plan and be prepared for the possible next

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Table 1
Shows details of the practices of Jordanian family medicine during the lockdown.

Table: shows details of the practices of Jordanian family medicine during the lockdown		Physicians, n (%)
Number of scheduled consultations	0	19 (16.2)
	1-10	10 (8.1)
	11-20	13 (10.8)
	21-30	22 (18.9)
	> 30	54 (45.9)
Number of patients whose conditions worsened during the lockdown due to lack or delay in medical care	0	37 (30.9)
	1-5	33 (28.2)
	6-10	6 (5.1)
	11-20	21 (17.9)
	> 20	21 (17.9)
Number of mortalities during the lockdown due to lack or delay in medical care	0	115 (97.4)
	1-5	3 (2.6)
	> 5	0 (0)

pandemic in order to minimize its potential negative impact on both health care level as well as educational and teaching level.

3. Introduction

The Novel Corona virus, also known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was declared as global pandemic by the WHO on March 11th, 2020 [2]. months after it began spreading through the Wuhan region of China in December 2019 [3]. SARS-CoV-2 is considered a highly contagious virus mainly due to its S spiking protein, which enables binding to ACE2 on host cells [4] caused by aerosol penetration into the upper respiratory tract and lungs via inhalation [5].

On March 13, 2019, a wedding ceremony led to a large outbreak of COVID-19 in northern Jordan, 76 of the 350 attendees were diagnosed with COVID-19 [6]. As a response to the rapid spread of the virus a restriction order from the authorities was made to limited social activities.

Government of Jordan announced a nationwide strictly enforced curfew beginning March 2020. The curfew prohibited the movement of

people and closed all shops, schools and universities and banned public gatherings including prayers in mosques and churches. All flights to and from Jordan were also suspended [7,8]. During this lockdown, any patient with an emergency requiring evaluation in a hospital had to contact the civil defense in order to be transported to the nearest hospital by an ambulance, during which there is a closure of outpatient clinics including our family medicine medical center which is considered one of the major primary care center in the north of Jordan, the outpatients visits were limited to emergency cases only. These factors are all consistent with the reduced outpatient visits observed during late march to June 2020.

4. Methods

After we granted permission by the institutional review we retrospectively reviewed all out-patient’s clinic visits to Jordan university of science and technology primary medical center, between [March 17, 2020] till June 1st 2020, during which all outpatient clinics were suspended except for the emergency visits and medications refill. We also reviewed all out patients visit to our medical for the same period of the year 2019 for comparison.

During the pandemic lockdown, we cut the staff number on duty to the minimum where only the pharmacy was opened for the medication refill, few of our residents participated in covid-19 screening team and most of our patient’s consultations were addressed remotely using phone calls. As a temporary replacement for our daily traditional teaching activities We switched to a virtual academic teaching and interactive lectures, for our residents and medical students.

We also sent an online Google Forms questionnaire to family medicine physicians who works in different areas and different sectors in Jordan. To maintain the privacy and confidentiality of all data collected the questionnaires were anonymous. The questionnaire was in English, contained a series of multiple-choice questions regarding each physician’s participation in the treatment or screening of COVID-19 patients, the number of consultations during the lockdown, and the effects of the lockdown on their practices, teaching activities and their patient’s conditions.

was used the collected data from the questionnaire to see the effects

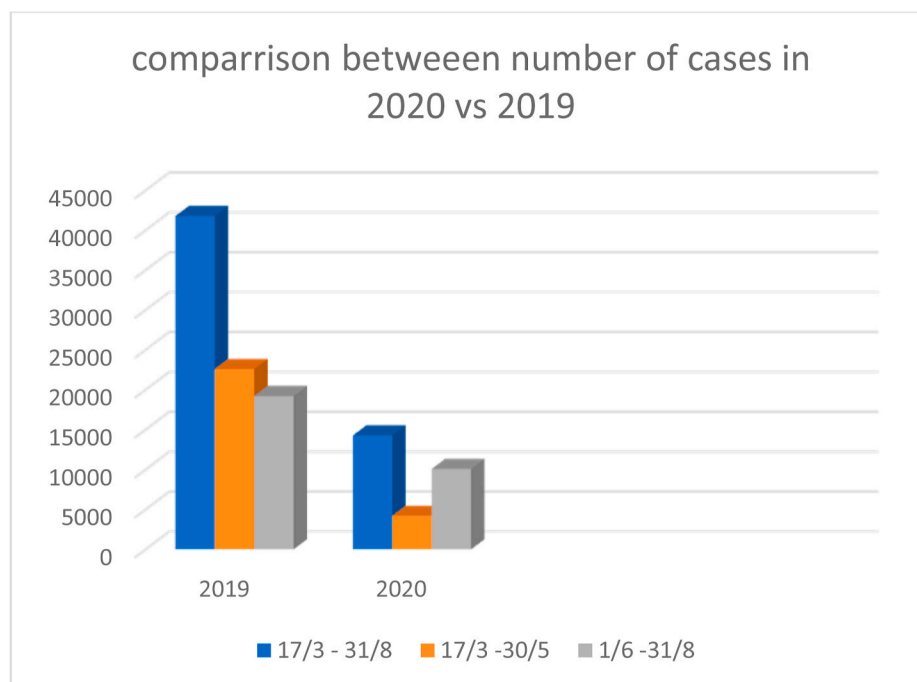


Fig. 1. Comparison between number of cases to our medical center during the lockdown 2020 and the same period of 2019.

of the lockdown on their practices and teaching process as well as the rules they've played during the pandemic.

5. Results

As per government orders all the outpatient's visits were suspended, a hotline was assigned to deal with suspected Covid-19 cases presented with fever and acute respiratory symptoms by asking them to stay home and refer them to the Epidemiological investigation teams to have them tested for covid-19 at their location without visiting our facility, then to refer the confirmed cases to the Covid-19 hospitals based on their clinical conditions. Despite of all the strict policies we had during the pandemics and curfew period we received patient's visits due to the following:

- Emergency visits: such as airway emergencies in asthma exacerbating patients requiring medical management,
- Medication Refill: included patients with stable chronic conditions who need to refill their medication list such as diabetic and hypertensive patients.
- Acute illnesses: This included patients with acute symptoms, and patients with chronic conditions with acute exacerbation of their symptoms such as asthmatic patients.

Between March 21 and May 30 of 2020 the time of complete lockdown and curfew time all our services were shut down except for the medication refill, a total number of 2144 patient or one of his family member came to our medical center to refill the patient's medication, Emergency visits during this period of time were less than 10 patients, all the emergent cases were arranged to be transferred to the hospitals by calling 911 services.

All the outpatient's visits and the minor surgical procedures were suspended, this suspension was announcement of suspension was conducted by the Jordanian MOH and by sending emails via phone calls and through our website as well as social media announcement.

Less than 10 emergency cases were received to our center most of them were a diabetic complication and were treated medically and either discharged home or referred to the hospital.

At the beginning of June 2020 when the complete lockdown was eased, we started to resume our medical care and allow the patient to book their out-patient's visit immediately after we resumed our practice after the national reopening, a total number of 10,078 out patient's visits were registered between June 1st and August 31st 2020, more than 50% of those visits were for patients with chronic illnesses such as DM, HTN and hyperlipidemia patients.

In comparison with the same period of time between March 21 and August 2019 a total number of 41,860 patient came to our medical center family medicine clinics (19,200 patients came between June 1st and August 31st 2019), the most common presented diagnosis was URTI, Anemia, Fatigue, HTN, and gastroenteritis as shown in the figure below.

Per our national questionnaire, a total of 118 Family physician have participated in the study: 95 (80.5%) specialists and 23 (19.5%) residents. 65 (55.1%) in the university hospitals, 35 (30%) ministry of health, in and 18 (15%) in military hospitals. 15 (12.8%) reported being part of COVID-19 screening teams. More than half of the participants (n = 66, 55.9%) reported providing 50 or less consultations during the lockdown, 50% of the consultations were conducted remotely, and a total of 82 (69.4%) of the 118 participants reported having at least 1 patient whose condition worsened during the lockdown due to lack or delay in medical care. 90% the participants (no 106) were concerned about the negative effects on training and educational opportunities and professional development of the family medicine trainee during the pandemic.

In **Table which** shows details of the practices of Jordanian family medicine during the lockdown, there is (n = 10, (8.1%) of the participants reported providing 10 or less consultations during the lockdown

and (n = 54, 45.9%) of participants reported providing more than 30 consultations. These consultations were provided either remotely through online messages or phone calls, or directly face to face with patients. (n = 33.28.2%) participants reported having at least 1 patient whose condition worsened during the lockdown due to lack or delay in medical care, and 3 physicians reported having at least 1 mortality during the lockdown due to lack or delay in medical care.

6. Discussion

Despite that the government has put a strict measure in place to protect and support vulnerable people from the new pandemic, we believe that patients with long-term health conditions might still need an access to the medical care during the peak of COVID-19 and lockdown.

From our experience during the lockdown period in Jordan between March and June 2020, the Family medicine department of Jordan University of Science and Technology underwent several changes as in response to the COVID-19 pandemic, including the closure of all outpatient clinics, and limited the medical care to the Emergency cases and medication refill. These measures in addition to patients fears they might contract or transmit COVID-19 or concerns about breaking the lockdown measures led to a significant change in family medicine practice for this period in comparison to the same period in 2019, this change significantly limited the access to and use of health care services for people with pre-existing health conditions who were unable to get the clinic appointment or the care they might needed, however, the restrictions on driving during the lockdown period likely led to a reduction in road traffic accidents, possibly explaining the very limited trauma cases during this period of time.

Healthcare and healthcare provision were negatively affected Complete lockdown and curfew related to the COVID-19 pandemic [9]. Similar findings were found among family medicine practice throughout Jordan as seen in the results of our questionnaire. These findings are likely mirrored worldwide in places where a full lockdown has taken place by healthcare personnel of all special.

Similar findings were found among family medicine practice throughout Jordan as seen in the results of our questionnaire. These findings are likely mirrored worldwide in places where a full lockdown has taken place by healthcare personnel of all specialties. [10,11, 12, 13].

This COVID-19 pandemic has also significantly affected teaching in all levels of medical education including the residents, where virtual-learning, video-conferencing, social media contacts, and broadly understood telemedicine have become substitutes for traditional medical education [14].

It is important to note that, while 28.2% of the participants of the questionnaire reported having at least 1 patient whose condition worsened due to the delay or lack of medical care during the lockdown period, this is a subjective matter based on the opinion of the participants.

Although our data raised the concerns about the maintenance of routine care during the pandemic and lockdown periods, the true extent of the effects of this lockdown period on patient care, morbidity and mortality is not yet apparent and more prospective studies should evaluate the long-term effects of lockdowns on patient-related outcomes.

7. Conclusion

Family medicine practice has faced a demanding challenge during the COVID-19 pandemic, and the resultant lockdown period, this caused a substantial shift in Family medicine practice throughout the country of the level of patient care and the content and methods of medical teaching and training.

To avoid such challenges and its impact on the dynamics of patient

care, we need to have clear strategies and policies to deal with the known long- and short-term effects of lockdowns on people's health and well-being when planning for the next pandemics in the future. A new method of teaching (such as online lectures and virtual teaching) should be evaluated/validated for their use in the future of medical training and education.

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No patient's consents were needed because we did not recruit any

patient.

Author contribution

Please specify the contribution of each author to the paper, e.g. study concept or design, data collection, data analysis or interpretation, writing the paper, others, who have contributed in other ways should be listed as contributors.

- Each author has a substantive contribution as the following:
 1. Hadeel Aallan: Submitting IRB, writing the questionnaire and abstract, reviewing the manuscript
 2. Thekraiat Al Quran: Collecting data, Writing the introduction and methodology
 3. Mousa Al Omary: Writing and reviewing the manuscript

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Ethical approval

This research has obtained ethical approval from Research and Ethics Committee, at Jordan University of Science and Technology, Irbid, Jordan, the committee's reference number is (705/2020).

Declaration of competing interest

The authors have no financial ties or conflicts of interest to disclose.

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