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Abstract

Background: Healthcare inequity has widely affected marginalized and immigrant communities globally during the COVID-19 pandemic.

Aims: This study assessed the effect of COVID-19 pandemic on health care delivery to immigrant populations in Isfahan Province, Islamic Republic of Iran.

Methods: All 67 hospitals across Isfahan Province were included in this study conducted from 1 March to 31 May 2020. Data on clinical manifestations, comorbidities, patient management, and outcomes of patients during hospital admission were extracted from medical records and analysed using SPSS for chi-square and odds ratio (OR).

Results: One hundred and sixty-eight (3.3%) of 5128 PCR-confirmed COVID-19 cases during the study period were immigrants and were included in the study. There were no differences in sex, clinical presentation, comorbidities, and length of hospital stay between the non-immigrant and immigrant groups. Immigrant patients were significantly younger and had poorer outcomes, including tracheal intubation [OR = 1.9, 95% confidence interval (CI): 1.2–3.1); P = 0.009] and in-hospital mortality (OR = 1.6; 95% CI: 1.1–2.4; P = 0.02).

Conclusion: Adverse health outcomes among immigrant communities may be an indication of health inequity and should be addressed by the relevant policymakers.

Keywords: health care delivery, migrants, COVID-19, health equity, Iran

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Introduction

Background

Individual health outcomes can be significantly influenced by nonmedical factors: the social determinants of health (1). Providing efficient, consistent, safe, equitable and high-quality emergency care is essential to improve access to optimal care.

Structural inequities and social determinants have an impact on health care delivery. Several studies have shown disparities, limited resources and poor health outcomes among marginalized communities, including individuals with different backgrounds, race/ethnicity and im/migrants (2–5). Data from the United Kingdom confirmed that in 2020, 34% of critically ill patients admitted to intensive care units were from ethnic/racial minorities although this group comprised only about 14% of the general population (6). The term “im/migrant” was used to refer to immigrants, refugees, asylum seekers and undocumented persons (5). This is fundamental to addressing healthcare disparities to improve health equity for im/migrants (7).

Since the declaration of the COVID-19 pandemic by the World Health Organization, there have been challenges in delivering equitable care globally and several studies have reported significant disparities and inconsistencies between communities (8,9). In the United States of America, higher case numbers and mortality rates have been reported among the Black and Hispanic populations. In Michigan, around 40% of fatalities were reported in Black patients although they accounted for only 14% of the population (10). In a recent Spanish study, being an immigrant was independently associated with higher in-hospital mortality among patients admitted for COVID-19 (11). The shortage of healthcare workers and limited medical resources in low- and middle-income countries is well established, and the burden of the COVID-19 pandemic accentuated the problem (12). Appropriate and fair allocation of scarce and limited health resources has instigated ethical and legal challenges in these countries (13).

The COVID-19 pandemic has created a unique opportunity to expose unfair and unjust public health inequities among racial and ethnic minority groups, including im/migrants. In this study, we performed a multi-centre retrospective study to evaluate the effect of the COVID-19 pandemic on health care delivery to im/migrant population in Isfahan Province, Islamic Republic of Iran.

Objectives of the study

Our primary aim was to illustrate the demographic and clinical presentations of COVID-19 patients among non-immigrants and im/migrant populations. The secondary aim was to compare the need for invasive management, orotracheal intubation and in-hospital mortality between im/migrant and non-immigrant COVID-19 patients.

Methods

Study design

This was a retrospective multi-centre observational study that assessed the differences between clinical presentations, management and primary outcome of COVID-19 among non-immigrant and im/migrant populations. The primary clinical outcomes were defined as the need for orotracheal intubation and in-hospital mortality.

Setting and participants

There are 67 hospitals in Isfahan Province. We analysed a cohort of COVID-19-positive patients who required admission to one of these hospitals between 1 March 2020 and 31 May 2020. A confirmed COVID-19 patient was defined as having at least one positive nasopharyngeal swab

determined by real-time reverse transcriptase-polymerase chain reaction (PCR) assay as defined by the World Health Organization protocols (14).

Data source and variables

The data were collected by reviewing completed COVID-19 forms from the medical records. The following information was collected from each patient's medical records: patient demographics, presenting complaint at triage (e.g. cough, shortness of breath, myalgia, prior contact to a COVID positive case), clinical manifestations [O2 saturation, fever (temperature > 38° C), etc.], comorbidities, need for orotracheal intubation and clinical outcome (length of stay and in-hospital mortality).

Quantitative variables and statistical methods

Categorical variables are presented as frequency (percentage) and continuous variables as median [interquartile range (IQR)]. Chi-square and odds ratio (OR) were used to analyse associations between categorical variables and an independent t-test was used for continuous variables. We used a non-parametric Fisher's exact test when the value of a variable was less than 5. We used SPSS, version 27.

Ethics

Ethical considerations for the study were reviewed and approved by the ethics committee of Isfahan University of Medical Sciences, approval number: IR.MUI.MED.REC 1399.423, dated 22/08/2020.

Results

In Isfahan Province, 5128 PCR-confirmed COVID-19 patients presented to 67 hospitals during the study period; 562 were re-presentations and 3.3% (168) were im/migrants. All re-presentations were among the non-immigrant population (P