ASSESSING THE IMPACT OF THE COVID-19 PANDEMIC ON THE OPERATIONAL EFFECTIVENESS OF HEALTH PROGRAMS IN MAKKAH CITY

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Abstract

Background: Coronavirus (covid-19) is an viral illness caused by a recently discovered coronavirus that began in the Chinese city of Ouhan in December 2019.(1) The impact of this globally pandemic affects all aspects of social, psychological, economic, and health.(1,2) The Saudi preventive health programs for Community health services to increase awareness and decrease preventable diseases.This study aimed to assess the impact of the COVID-19 pandemic on key performance indicators of health programs at Makkah Al-Mukarramah City.

Material and Methods: This comparative descriptive study will be conducted to assess health programs' key performance indicators and statistics before covid-19 in 2019 in comparison with 2020 and 2021. KPI and statistics of health programs will collect the data including chronic diseases Preventive programs, age categories programs healthy life programs.

Keywords: coronavirus-19, health programs, key performance indicators, preventive health, performance.

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Introduction

Health programs in KSA

The Kingdom does not neglect any member of society with regard to health programs, as it has provided special care programs for the family with all its members: mothers, children, and the elderly that suit their needs. which has an obvious and considerable beneficial influence on the overall health and safety of the community.(3)

The Ministry of Health has dedicated maternal and child care programs that target children, pregnant women, and females of child bearing age. The program has five components: follow-up of pregnant women, management of high-risk pregnancies, follow-up of children under 5-year-old, and a health education plan for maternal and child health care. The program's goal is to promote awareness of breastfeeding, newborn and preterm infants, and the relevance of early detection of breast cancer within the screening program.

In addition to educating parents about all health issues related to children under 5, such as dental health, nutrition, and children's health and safety in general, The program also provides services to pregnant women, starting before conception, during pregnancy, childbirth, and even after childbirth.(3) Moreover, the Kingdom has also established a system of fertilization units, embryos, and infertility treatment to ensure the provision of services related to it. The Kingdom is also keen on taking care of the elderly—those who have reached the age of 65 and over—and it has given the elderly a greater share in health programs. All relevant sectors work to provide a comfortable livelihood for the elderly who are unable to work by providing financial assistance for medical devices provided by the Ministry of Human Resources and Social Development, as well as social care homes that provide them with the health care they need. It also offers homecare services to the elderly, which can be requested via the social care platform or the Ministry of Health. Because of the Kingdom of Saudi Arabia's care for the elderly, it established a "Priority" service for them to facilitate services and procedures within health institutions.Also worked to raise awareness about healthy nutrition and mental health for the elderly.(4–6)

Health programs related to chronic diseases target patients with diabetes, high blood pressure, bronchial asthma, and cancer. These programs provide preventive and promotional services, curative services, identification and management of at-risk groups, and follow-up of patients.(7)

The mental health program regarding promotion and education has seven elements: health counseling and advice; evaluation of medical examination; patient and family health education plan; evaluation of laboratory testing and measurements; periodic health assessment for different age groups; and evaluation of medical history as well as quality indicators .(3,5,8)

On the one hand, chronic diseases and the risk factors that contribute to them, such as a lack of physical activity, unhealthy eating, and smoking, dominate Saudi society, with a high proportion of undetected and undiagnosed cases. The program is based on providing comprehensive, integrated and continuous health care services through a multidisciplinary team that includes doctors, nurses, and health educators. The initiative aims primarily to treat common diseases in society that lead to a health, psychological, social, and economic burden, such as diabetes, cardiovascular diseases, high blood pressure, hyperlipidemia, breast cancer, colon tumors, mental disorders, and osteoporosis. And the risk factors that lead to it, such as being overweight, obesity, unhealthy food, inactivity, and smoking, are the initiative included triage of patients by medical staff from the nurses; recording the patient's data; conducting biological and physical measurements inside the nursing station; conducting examinations and diagnostic procedures; in addition to the periodic examination method. (5,7,9)

According to the Osteoporosis Control Program, the Kingdom brings together the public, patients, health care workers (HCPs), health service providers, and the government to work together to control osteoporosis and reduce the health, economic, and social burden. Key areas of focus for the KSA Osteoporosis program for Prevention and Management are education and health promotion, screening, diagnosis and treatment, post-fracture care management and secondary prevention, self-management and falls prevention, as well as research and evaluation.(4)

To protect family members from genetic disorders and infectious diseases, the Kingdom of Saudi Arabia has developed the Premarital Screening Program, which provides laboratory tests and medical counseling sessions. Screening for those about to marry aims to know the presence of genetic blood disorders (sickle cell anemia and thalassemia) and infectious diseases (hepatitis B, hepatitis C, HIV/AIDS). It also aims to give medical consultation on the odds of transmitting the abovementioned diseases to the other partner/spouse or children, and to provide

partners/spouses with options that help them plan for a healthy family.(10)

Additionally, the National Newborn Screening Program in KSA aims at screening all newborns in the first 24–72 hours of life for diseases covered by the program for the purpose of early detection and then providing the necessary medical care as soon as possible to prevent complications. Diseases covered by the program are endocrine conditions, amino acid conditions, organic acid conditions, urea cycle conditions, fatty acid oxidation conditions, and carbohydrate conditions. Key components of the programs are screening procedures, parents' notification, referral and management, and education and training. (11)

The key performance indicators of health programs that are above-mentioned have monitoring and evaluating quality indicators as shown in table 1.

Health programs during COVID-19

COVID-19 is an infectious disease caused by the newly discovered coronavirus that started in December 2019 in the Chinese city of Wuhan. On January 30, 2020, the World Health Organization declared that COVID-19 created a Public Health Emergency of International Concern and then, on March 11, 2020, declared it a global pandemic.(1,2)

The first case of COVID-19 was confirmed in the Kingdom of Saudi Arabia on March 3, 2020. Since then, the Kingdom of Saudi Arabia has started taking strict precautionary and preventive measures at the community level. Strict mitigation regulations have been implemented across the country, including home quarantine, the closure of most public and private services, restrictions on resident movement, and a 24-hour curfew.(12) With the implementation of these measures, Saudi Arabia has resorted to existing technology and digital solutions as well as developed new solutions for securing daily services such as healthcare and education services.(13) E-Health is a key factor in enabling the transformation of healthcare, and it is one of the executive programs to achieve Vision 2030, which aims to increase access to care, improve quality, and enhance prevention of health risks.(14)

During COVID-19, health and chronic disease programs have provided diagnosis and treatment services using telemedicine services. Medical consultations with the doctor were provided remotely through the Ministry of Health call service center (937), the "Seha" application that can provide patients with electronic prescriptions via SMS. The "Mawid" application allows early detection of diseases through self-assessment, symptom examination, and an appointment portal for all services of the Saudi Ministry of Health. Paramedic apps have enhanced response times for emergency calls. Some healthcare facilities have launched WhatsApp numbers to help patients arrange routine remote follow-up, register prescriptions, and inquire about their laboratory results.(13,14)

Based on what has been mentioned, this paper aims to study the impact of the COVID-19 pandemic and the consequent unprecedented restrictions on movement that led to the difficulty of providing health programs services and the total dependence on telemedicine services on the performance and quality of health and chronic disease programs in Makkah Al Mukarramah. and recommend the necessary actions to be taken to ensure the provision of high-quality services during emergencies and crises.

Table 1:

Maternal Care Program Quality indicators	The percentage of women who received antenatal care for at least four visits
	The proportion of mothers who received postpartum care during the first week after giving birth.
	The percentage of births that took place under the supervision of a trained medical staff during a specified period of time.
	During a specified time period, the percentage of pregnant women referred for hospital delivery at 36-40 weeks of pregnancy was calculated.
	The proportion of high-risk pregnancies referred to the hospital
	The percentage of pregnant women who received the tetanus vaccine during their pregnancy during a specific time period.
	The percentage of female doctors working in antenatal clinics who received antenatal care training during a specified time period.
	The percentage of nurses working in antenatal clinics who received training in antenatal care during a specified period of time.

Geriatric care and Osteoporosis control programs quality indicators	The Percentage of elderly people who had laboratory tests done yearly, as opposed to comprehensive exams every three months.
	The Percentage of elderly who had laboratory investigations done yearly as in comprehensive examination / every 3 months.
	The Percentage of the availability of all tools and equipment required for Geriatrics Care clinic / 3 months.
	The Percentage of completion of the registries and forms of the Geriatrics Care clinic / month.
	The Percentage of elderly people dropout for 6 months or more from follow up in the geriatric clinic /every 3 months.
	The Percentage of elderly who had laboratory investigations done yearly as in comprehensive examination / every 3 months.
Chronic Diseases Programs Quality Indicators	The Percentage of NCD defaulted patients for 3months or more from follow up in the NCD clinic /every 3months.
	The Percentage of NCD patients who had laboratory investigations done yearly as clinical guidelines/every 3 months.
	The Percentage of Diabetic patients who had HbA1cdone twice yearly.
	The Percentage of Diabetic & Hypertension patients who had referred for fundoscopic examination once/year.
	The Percentage of diabetic patients who had good control in the blood sugar level / every 3 months.
	The Percentage of hypertensive patients who had good control in blood pressure level / every 3 months.
Comprehensive Counseling Program (mental health) Quality Indicators	Availability of essential drugs for a psychiatric clinic
	The Percentage of the number of trained/trained doctors from the target
	The Percentage of primary psychiatric care clinics that have been activated from the target
	The total number of visits to the primary psychiatric clinic
	The total number of cases using drug therapy
	The total number of cases that do not use drug therapy
	The total number of cases that do not use drug therapy
	The total number of goats recorded an improvement in symptoms
	Number of patients diagnosed and treated in primary mental health clinics
Healthy Marriage Screening Program Quality Indicators	The ratio of the number of trainees to the target
	The number of monthly marriage requests
	The number of individuals who received health education in marriage examination clinics
	Number of marriage examination certificates issued
	The rate of immunization of women who are about to marry with the triple viral vaccine
	Marriage compatibility ratio
	Response rate to medical advice
	The number of cases of hereditary blood diseases detected
	The number of hepatitis C cases detected
	The number of hepatitis B cases detected
	The number of HIV cases detected
National Newborn Screening Program Quality Indicators	The proportion of newborns who have had newborn screening
	The proportion of babies who have a newborn screening sample taken between 24 and 72 hours of birth
	The quality of the blood spot sample which reflect proper collection and transport
	The time taken for the sample to be received by the laboratory after being taken

	The time taken by the NBS laboratory to test each sample for all of the 17 disorders specified in the NBS Program
	The time taken to refer a baby with a positive screening result for diagnostic testing
	The time that is required for the commencement of treatment for babies with positive test results
	Percent of loss to follow-up: 1-following the receipt of an invalid specimen. 2-following an out-of-range test result.
	Percent of out-of-range results that need referral for evaluation.
	Prevalence of each disorder detected by newborn screening.
	Percent of missed cases) false negatives: 1-Percent of babies with disease who were not identified on NBS but had a valid newborn screen 2-Percent of babies with disease who were not identified on NBS because they did not have a valid screen
Obesity control and physical activity health programs	The percentage of obesity detection that was activated from the target
	percentage of the number of people tested for early detection of obesity from the group
	Obesity cases detected in the gathering as a percentage
	The number of primary reception cases for primary health care cases
	Percentage of workshops completed from the project's workshop plan
	Percentage of the number of trainees from the planned target at the community level

Objectives

The general objectives To study the impact of the COVID-19 pandemic on the performance of health programs in Makkah Al-Mukarramah City.Although the specific objectives To determine the nature and extent of changes in the performance of health programs between pre-pandemic and pandemic periods, Makkah Al-Mukarramah City, To compare performance change patterns across categories of health programs, Makkah Al-Mukarramah City and To recommend priority areas and policy considerations to enable the health programs to be better prepared to meet population health needs during emergencies and crises , Makkah Al-Mukarramah City.

Method

This is a comparative study that applies descriptive statistics to the available data on key performance indicators of all health programs in Makkah Al-Mukarramah. All necessary official permissions were secured by the researcher before the start of the data collection. Confidentiality and privacy were guaranteed for all data. The percentages of key performance indicators of all health programs were calculated and tests of significance applied. Descriptive statistics (e.g., number, percentage) are summarized as appropriate.

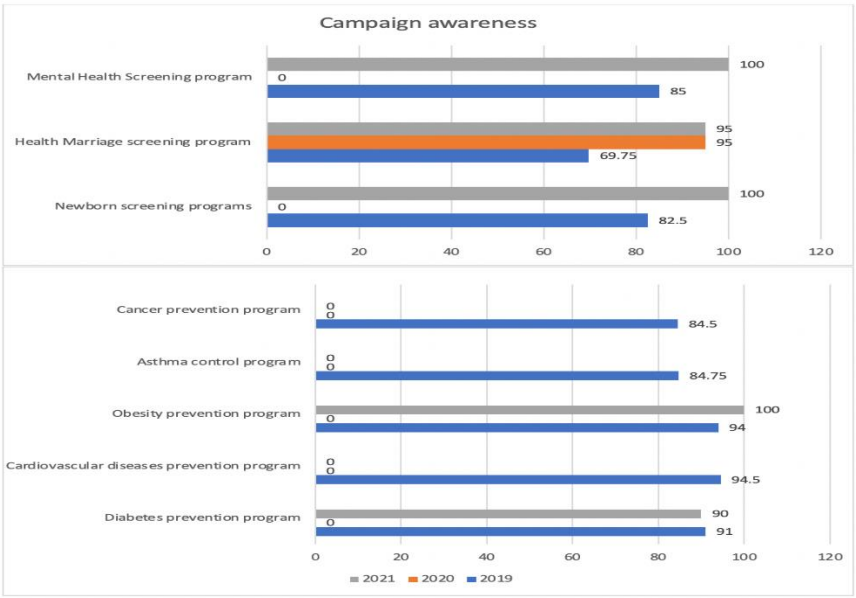
Result

Table 2:

Health programs	2019 achievement percentage	2020 achievement percentage	2021 achievement percentage
Geriatric screening program	71.9	70.5	90.8
Maternity care health program	64.7	0	65.0
Child care health program	65.3	0	63.0
Diabetes control health program	84.5	60.0	97.0
Cardiovascular disease prevention health Program	88.0	0	0
Obesity control and physical activity health programs	85.3	60.0	100.0
Asthma health Program	71.0	58.3	0
Cancer control health program	68.3	58.3	58.3
Healthy marriage screening program	75.7	72.5	95.0
Mental health counseling program	77.7	79.2	100.0
National newborn screening program	75.5	60.0	96.7

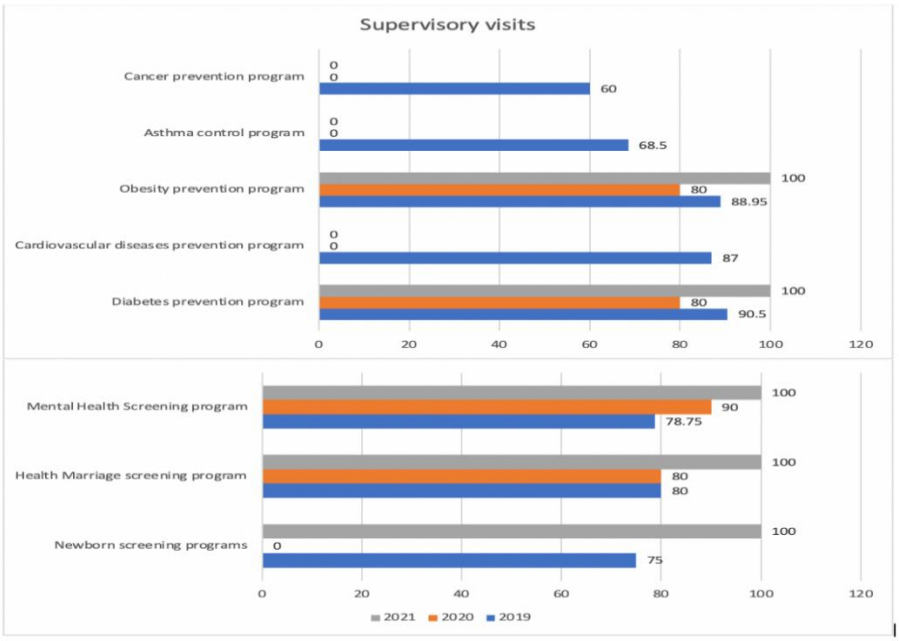
Table 2 shows the huge drop in the key performance indicators as a consequence of COVID-19 in 2020. Cardiovascular disease prevention health programs show the most drop-down level with 0% achievement percentages in both 2020 and 2021. The achievement percentages for the newborn screening program and the diabetes control health program show partial drops in 2020, with a significant recovery in 2021. On the other hand, child and maternity health programs represent a complete fall in 2020 with a high re-establishment of the achievement percentage in 2021.

Graph 1:



According to graph 1, which shows the community compagion, we found that the cancer prevention program, asthma control program, and cardiovascular disease prevention program are the affected programs due to the COVID-19 lockdown process. In the alternative, we found that the healthy marriage program was not affected at all, while other records dropped only within 2020.

Graph 2:



The second graph shows the supervisory visits that included health-care facilities and health program services. There were mostly affected programs in the cancer prevention program, asthma control program, and cardiovascular disease prevention program. In contrast, the high-service supervision visits include obesity prevention program, diabetes prevention program, mental health program, and healthy marriage program.

Conclusion:

The Ministry of Health prioritizes preventive services, including the mentioned health programs. During the COVID-19 pandemic period, all health programs were affected due to lochdown and staff shortages, although by the end of 2021 it had become better.

Abbreviation:

NCD: Non-communicable disease
KPI: key performance indicators

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