

The Impact of the COVID-19 Pandemic on Makkah City's Health Programs Performance

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Abstract

Background: Coronavirus (Covid-19) is a viral illness caused by a recently discovered coronavirus that began in the Chinese city of Wuhan in December 2019.(1). The impact of this global pandemic affects all social, psychological, and economic aspects of society, and health(1,2). The aim of the Saudi preventive health programs for Community health services was 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 was 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 collected the data including that on chronic diseases Preventive programs, age categories and healthy life programs.

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

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 that suit the needs of all family members: mothers, children, and the elderly. This 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 years 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 it educates 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 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. It 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 these diseases, such as being overweight, obese, eating unhealthy food, inactivity, and smoking, are the initiatives included in 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 mentioned above have monitoring and evaluating quality indicators as shown in Table 1.

Table 1

| | |
|--|--|
| Maternal Care Program Quality indicators | <ul style="list-style-type: none"> - 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 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 | <ul style="list-style-type: none"> - 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 | <ul style="list-style-type: none"> - 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 their 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 | <ul style="list-style-type: none"> - Availability of essential drugs for a psychiatric clinic - The percentage of the number of 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 patients recorded an improvement in symptoms - Number of patients diagnosed and treated in primary mental health clinics |

Table 1 (continued)

| | |
|--|--|
| Healthy Marriage Screening Program Quality Indicators | <ul style="list-style-type: none"> - 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 | <ul style="list-style-type: none"> - 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 reflects 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 - Percentage of loss to follow-up: <ul style="list-style-type: none"> 1-following the receipt of an invalid specimen. 2-following an out-of-range test result. - Percentage of out-of-range negatives: <ul style="list-style-type: none"> 1-Percent of babies with disease who were not identified on NBS but had a valid newborn screen 2-Percentage 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 | <ul style="list-style-type: none"> - 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 were to study the impact of the COVID-19 pandemic on the performance of health programs in Makkah Al-Mukarramah City. Although the specific objectives were 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 was a comparative study that applied 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.

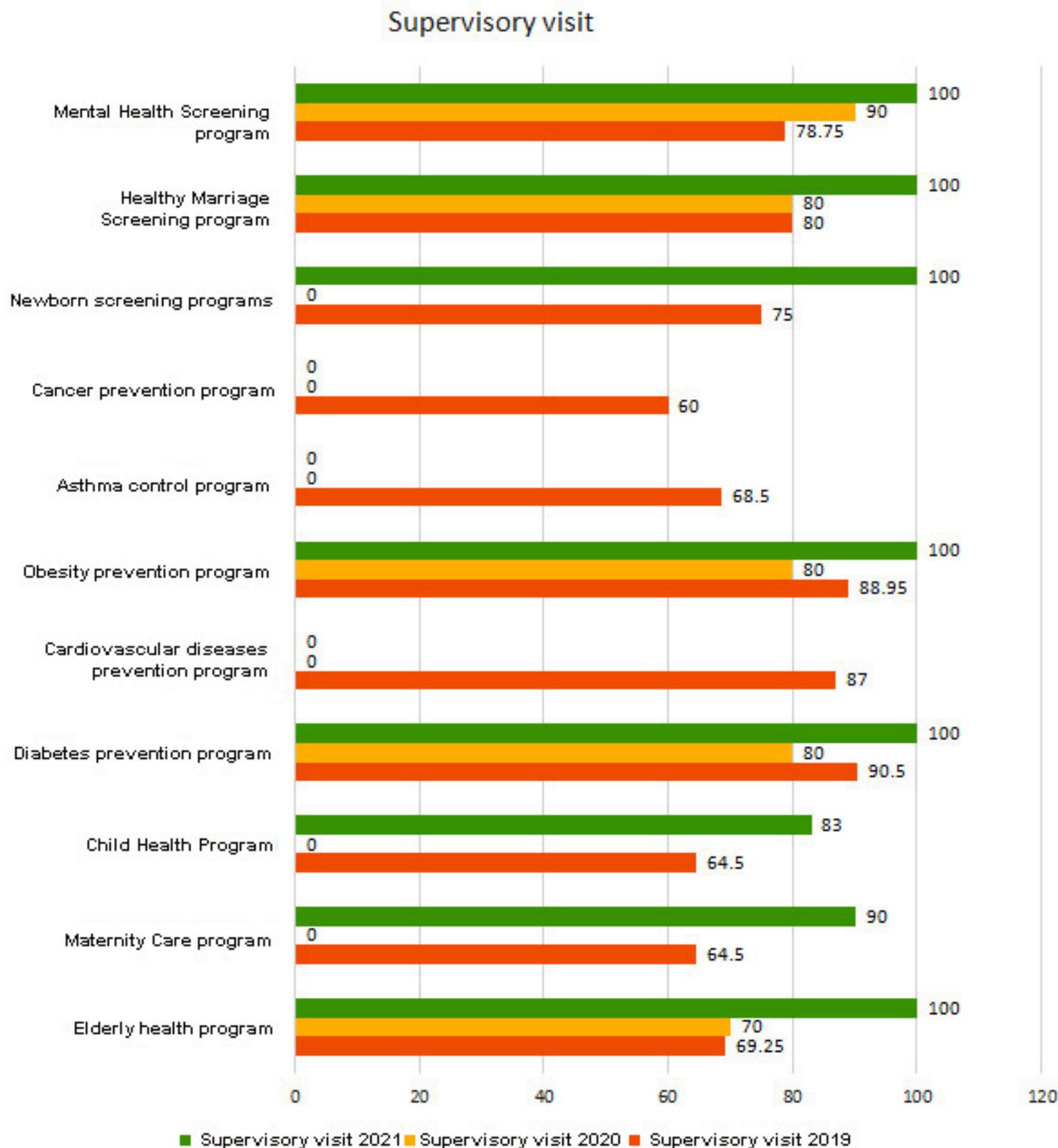
Result

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 |

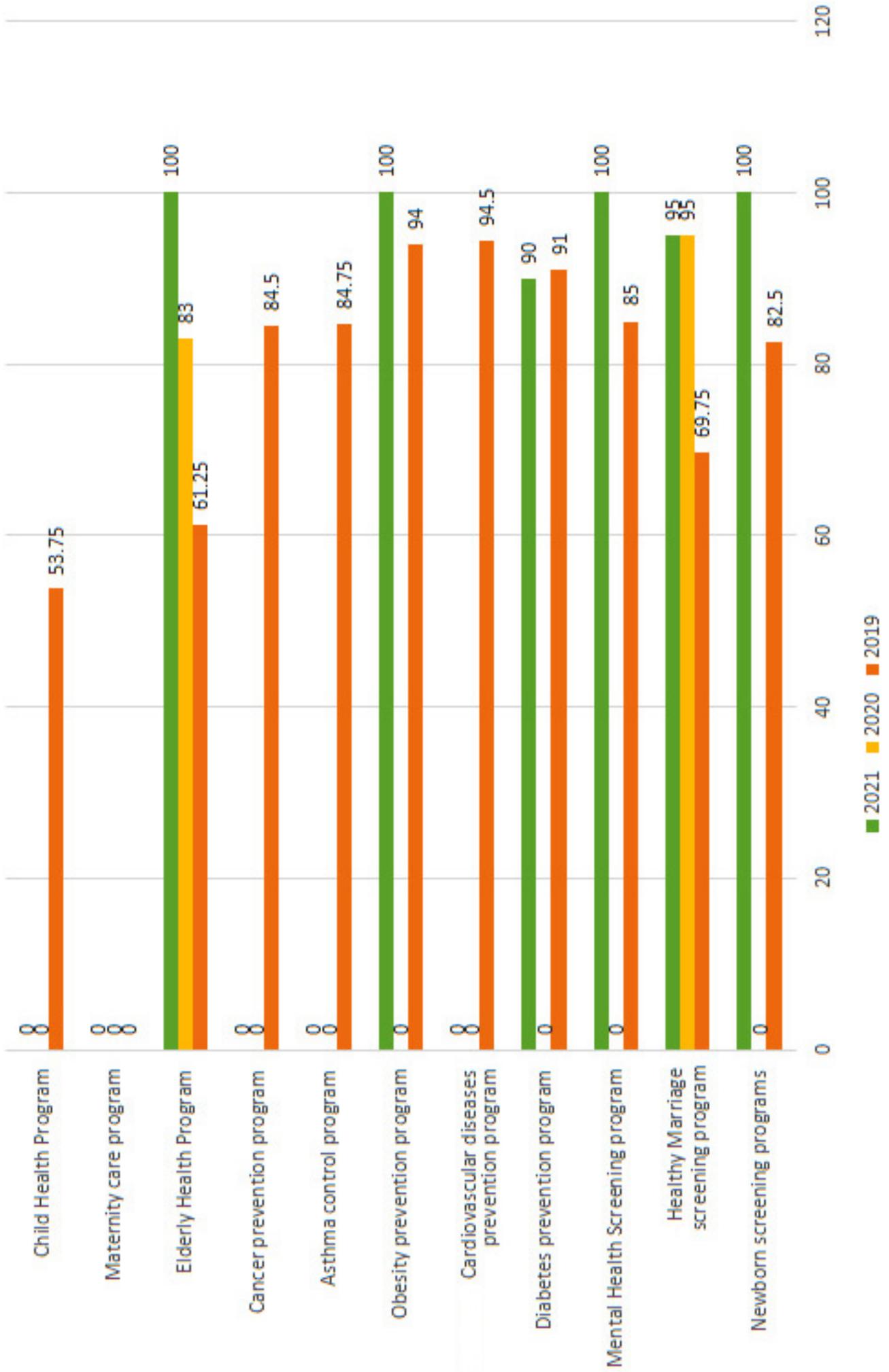
Table 2 shows the huge drop in the key performance indicators as a consequence of COVID-19 in 2020. Cardiovascular disease prevention health programs show the most drop-down level with 0% achievement percentages in both 2020 and 2021. The achievement percentages for the newborn screening program and 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 campaign, we found that the cancer prevention program, asthma control program, and cardiovascular disease prevention programs were the affected programs due to the COVID-19 lockdown process. Alternatively, we found that the healthy marriage program was not affected at all, while other records dropped only within 2020.

Campaign awareness



The second graph shows the supervisory visits that included health-care facilities and health program services. There were mostly affected in the cancer prevention program, asthma control program, and cardiovascular disease prevention program. In contrast, the high-service supervision visits included 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 lockdown and staff shortages, although by the end of 2021 it had improved.

Abbreviations:

NCD: Non-communicable disease

KPI: key performance indicators

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