

## Reducing the Psychological Impact of Quarantine due to the COVID-19 Pandemic on Children in Saudi Arabia

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### SUMMARY

Before the WHO announcement of the novel coronavirus COVID-19 as a pandemic, many countries have undertaken quarantine measures to reduce disease transmission. Although adults can understand the high-risk virus imposes, and the importance of the quarantine, children cannot; hence their psychological status can be significantly affected.

In light of this, the healthcare transformation team at the Ministry of Health in Saudi Arabia had launched a series of online webinars during the quarantine using different types of arts aiming at reducing the psychological consequences and stresses imposed on quarantined children.

This short article describes the Saudi experience in using Health Edutainment to reduce the psychological impact of quarantine on children during the COVID-19 pandemic and supports it based on evidence from the literature.

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### Introduction

In March, 2020, the World health organization (WHO) announced the novel coronavirus, COVID-19, as a pandemic [1]. The disease transmission was rapid and had spread into many countries within a very short time [2]. Consequently, many countries from all over the world initiated quarantine measures as a strategy to reduce the fast transmission of the disease [3].

During this global crisis, special population groups were shown to be medically and psychologically affected more than others [4]. The pediatric population is shown to be significantly affected by quarantine measures, as quarantine has deprived them of the regular school day, exercise and play routines, especially that any sudden change in their lives is known to lead to harmful consequences on their psychological wellbeing [5-7].

In view of that, the transformation team has felt the urgency to come up with initiatives and interventions that can help quarantined children reduce their fear and anxiety of children caused by the quarantine, and which at one point could threaten their mental health [8]. It was then when the idea of using health edutainment activities through a series of online webinars was conceived.

A thorough literature search was conducted, and it was evident that the use of different types of arts such as drawing, painting, music, humor as well as physical activity at home has shown to

help children to cope with stress and anxiety [9]. Online platforms were chosen to launch our initiative, especially that evidence has shown to be the best place to facilitate the interaction of children with each other and with an instructor who can teach them through art and deliver complex information in a simple way [10].

There is some data in the medical literature on the advantage of using arts to reduce stress and improve mental health, especially in children with disabilities [11]. Data on the delivery of arts remotely using online techniques in healthy children is limited, particularly during the current quarantine due to the COVID-19 pandemic [12].

Therefore, this article aimed to describe the Saudi experience in using arts for children through online webinars, to reduce the psychological impact of coronavirus quarantine.

### Method

#### The Saudi experience

In collaboration with clusters, which are a network of healthcare providers comprising a large number of hospitals and primary health care centers in each region of Saudi Arabia, a series of 6 interactive online webinars targeted at quarantined children were launched. Each of the webinars had a different theme, including storytelling, arts, physical activity and nutrition, music, humor, and magic tricks. The webinars included different activities that are explained in the discussion.

A large body of literature has shown the positive effect of arts on individual health and wellbeing. Our webinar series was themed (Heroes of Quarantine). After giving six interactive webinars for the children in Saudi Arabia, the research team found there was a significant response from the children towards the series of webinars. The attendance rate of the children ranged from 70 to 100 reactive attendees per session, in addition to approximately 500 views on YouTube. Live talk by the organizers of the webinars was broadcast on "Al-Arabiya" channel and was viewed 9000 times on YouTube.

## Results

Our experience revealed that the Saudi children were interested in attending the entertaining webinars and reacting during them, which indicates a good impact on their psychological health. We recommend the engagement of health clusters in future webinars, which is essential for the success of these webinars to ensure the positive influence on children during the quarantine. Also, this experience can serve as an infrastructure for planning future platforms to develop the population's awareness and responsibility towards improving the psychological impact of quarantine on children and activating the role of health educators and health coaches in relieving mental stress and anxiety in children.

## Discussion

Six interactive webinars for the quarantine children in Saudi Arabia were conducted about the following themes:

### 1. The Story of Coronavirus and Quarantine Webinar

Coronaviruses are classified as a group of viruses that usually cause mild to moderate respiratory tract [13]. During the last few years, some mutations have happened in coronaviruses resulting in the transmission of these viruses from animals to humans [14]. Additionally, the severity of the viral infection had increased due to its increasing virulence, which resulted in increased mortality. The coronaviruses group includes MERS-CoV, SARS-CoV, and the new COVID-19 virus [15].

In November 2019, the COVID-19 virus was initially detected in Wuhan, China [16]. Despite the Chinese government's trials to reduce viral transmission, the rate of viral transmission has increased rapidly to extend outside China, which made the WHO announce COVID-19 as a pandemic in February 2020 [17]. Accordingly, many countries all over the world announced the initiation of quarantine and quarantine strategies to reduce the viral transmission rate, which can have harmful effects on healthcare systems and, most importantly, vulnerable subjects [18].

In Saudi Arabia, we have recognized that the quarantine due to COVID-19 had a significant negative influence on the psychological wellbeing of children. Hence, we took the initiative to examine if some online interventions and strategies using arts can reduce the psychological burden on children during the quarantine.

Our online webinar entitled (The Story of Quarantine Heroes) was specially designed to aware the children of the current situation. We answered the kids' concerns (what is going on?) and (why we are quarantined?), we created a channel through which we can pass these materials to children and their parents. This story addressed the quarantine kids as (Super Heroes) who have a current urgent mission to save the world from a new enemy, which is the evil coronavirus. Children understood that, and we also explained that there are different groups of heroes engaged in this mission, like white coat heroes (medical staff), Military

and police personnel who ensure safety measures are applied, and citizens who are following prevention measures.

The details of our super hero's mission included information about Covid-19 virus origin, symptoms, prevention, how affected people are managed so that heroes can save their beloved ones. Then, we suggested different kinds of activities that heroes can enjoy during the quarantine.

### 2. Art webinar

Drawing and painting is one type of art that can help children express their emotions. It can also develop psychological maturity and building personality in children. For instance, a study has shown art to be an effective treatment for stress and anxiety in children, which in turn can have positive implications on their mental health and growth [19]. Similarly, the World Health Organization (WHO) has shown that arts could play a significant role in disease prevention and health promotion. Additionally, it was also shown that art could decrease the risk of behavioral and social disorders in adolescence [19].

During the past decade, some studies showed the effects of different arts on human's health and psychological status. The WHO confirmed that arts could play a significant role in disease prevention and health promotion. Additionally, the advantages of using arts can be expanded by transforming the use of art from an individual to a national level [19].

Drawing and painting is one type of art that can help children express their emotions. It can also develop psychological maturity and building personality in children. Moreover, art is an effective treatment for stress and anxiety in children, which can have positive implications on their mental health and growth [19].

Art can also be a tool for children to show their uniqueness [19]. Recent reports have demonstrated that drawing can improve higher cognitive functions (such as memory) in children aged between five to seven years. Children who can draw what they see can recall more information without errors compared to their peers [20]. Art can also decrease the risk of behavioral and social disorders in adolescence [19].

As shown, artistic activities are an effective tool to reduce the anxiety and stress that children are exposed to during the quarantine. So, we designed an Art Webinar. A female artist, who is a certified art trainer, was chosen to prepare artistic activities and virtually applying them with children in a virtual workshop. She also showed some insightful tips for improving artistic skills.

Children were very responsive to these activities. Their caregivers stated that children showed considerable improvement in their general mood and said that they were less stressed, and their annoying behavior -which was a result of stress, anxiety, and boredom - was way more improved.

The importance of engaging kids in artistic activities for their psychological wellbeing was discussed with parents. Also, the potential for such activities to decrease stress and anxiety. This was done through a booklet shared with them and an open discussion before the webinar.

### 3. Humor Webinar

Humor is considered one of the methods of interpersonal communication. Recent studies have demonstrated that humorous

distraction can have a clinical impact on children to reduce their sensation of pain in painful procedures. It has been shown that humorous distraction can decrease the pain threshold in children [21].

Psychoneuroimmunology studies have also demonstrated that humor showed some physiological benefits on the immune system, where the humor response scale scores were significantly correlated to the increase in natural killers' cell activity [22]. Additionally, recent studies have confirmed the psychological benefits of humor.

Studies have also demonstrated that social laughter can increase the production of endogenous opioids. More recent studies have proposed that the release of an endogenous opioid after social laughter provides a neurochemical pathway that supports long-term relationships in humans [23].

Humorous educational television programs can have an impact on children's attention. This was proven through hypothesized attention-drawing effects of humor in young children. One study showed that first- and second-grade children were more likely to choose programs containing humor, especially if the humor was fast-paced when they can choose an educational television program to watch [24].

Believing in the healing ability of humor and laughter, a humor webinar was designed and presented by a comedian to grasp kids' attention and entertain them. A selected number of Health quizzes and contests funnily and entertainingly were presented.

The importance of Humor and Laughter for psychological health were discussed with parents, including the evidence-based potential of such shows and activities in promoting healing and helping to relieve negative emotions that were explained during the webinar. Through our initiative, we revealed that children were very interactive with humorous distractions, which played a vital role in reducing stress and improving the psychological wellbeing of children during the quarantine.

#### **4. Physical activity and nutrition Webinar**

Recent experimental research showed that physical activity in the form of aerobic exercise at a moderate to vigorous intensity could promote children's goal-directed cognition and behavior. The experiment showed that fourth-grade children who practiced walking showed significantly higher concentration levels compare to seated children [25].

Furthermore, another study revealed that moderate-to-vigorous physical activity could predict fewer symptoms of major depression in middle childhood and can be considered one of the strategies to reduce the risk and treat childhood depression [26]. These findings were also supported by another study which showed an acute response to classes of partnered Latin dance (such as Salsa, Mambo, Merengue, Rumba, Cha Cha Cha, Bachata, and Samba) and non-partnered Latin-themed aerobic dance that could promote psychosocial health in children [27].

Healthy nutrition can also have a positive impact on the psychological health of children. Studies have shown that the type of nutrients can influence the development of the immune system in pediatrics and affect the host defense pattern against pathogens, in addition to its impact on their mood and psychological condition.

Hence, it is essential to consider the type and variety of nutrients provided to children [28].

The previous evidence encouraged us to take physical activity and nutrition into consideration. So, a Physical fitness coach with previous experience in training children conducted virtual classes for kids in collaboration with a nutritionist who presented an edutainment nutrition material before the webinar.

Part of the webinar was designated to educate them about the importance of physical activity and a balanced diet on health and wellbeing and the role of physical activities in emotion management and some ideas to maintain exercise routine during the quarantine.

Cluster engagement provided huge support for children during the quarantine and showed improvement in anxiety and stress accompanied by the quarantine.

#### **5. Magical tricks**

Magical tricks can also play a role in the improvement of the psychological condition in children. Studies have shown that involving children in art performance can improve their psychological wellbeing [29]. Besides, some studies have evaluated the effect of performing magical tricks by clinicians and educators and found that it can deliver positive health messages to pediatrics in an understandable format, appropriate to their age [30]. Also, magic tricks can be utilized as a tool to deliver life lessons to elementary school students.

The effect of magical tricks on the psychic condition of pediatrics can be attributed to some factors. Magical tricks act as a non-traditional and creative educational technique. Also, these tricks have desirable educational interventions, such as the potential to provoke a sense of curiosity, surprise, and interest [31].

Clown interventions have been examined in a pre-operative setting. It has been revealed that these interventions can significantly reduce the anxiety accompanying the operation [32]. All these benefits can show the potential advantages of magical tricks on improving cognitive functions and the psychological condition of the pediatric population.

Magical tricks were among the activities that were provided to Saudi children through our webinars during the quarantine. A skilled magician cooperated in this webinar to teach children simple magic tricks.

We realized that the idea of using magic tricks for health purposes rather than just having fun maybe strange. So, we educated parents about how magic tricks can influence psychological health. During these magic trick's webinar, children showed interaction with their Magician.

#### **6. Music webinar**

Music has also been classified as one of the strategies that could have a positive impact on the psychological condition of pediatrics. During the COVID-19 pandemic, some reviews demonstrated that either listening to music or singing and dancing at home could significantly reduce the stress and anxiety of pediatrics. It has also been shown that playing and listening to music in groups can treat the negative consequences of depression and anxiety, even in the long term [33].

The date of our music webinar coincided with the first day of Eid Al-Fitr – a religious holiday celebrated by Muslims marks the end of the fasting of Ramadan – so the atmosphere of this webinar was cheerful. It was a great opportunity to change children’s focus away from dismal vibes due to quarantine to a more cheerful and joyful event such as Eid.

Children celebrated together, singing and playing cheerful music with a young Saudi singer.

Through our experience, we demonstrated that Saudi children interacted with music and signing, even if piano and songs were played remotely through webinars.

### Conclusion

Quarantine is considered a difficult psychological experience for children. It can significantly affect their psychological health and wellbeing. Entertaining activities in the form of storytelling, drawing, painting, humor, physical activity, magic tricks, and music can all reduce the psychological burden of the quarantine on children. Online webinars are in the best position to deliver entertaining content during quarantine periods to guarantee reducing viral transmission in the community.

### Recommendations

The success of the Saudi experience in conducting online edutainment webinars shows that this tool is promising to reduce the psychological impact on children. It is recommended to continue using online edutainment webinars even after the pandemic and quarantine, especially with children who might require additional psychological support.

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