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Effect of COVID-19 Pandemic Restriction of Movement on Mental Health of Children in Kapsabet Town, Nandi County, Kenya

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Kenya recorded the first case of COVID-19 on 13th March 2020. This led to immediate measures including restriction of movement, wearing of masks, washing hands, distancing, isolation, suspension of international flights, including mandatory quarantine of incoming residents, closure of bars, closure of educational institutions and restrictions on restaurant opening hours; and a ban on large gatherings. These measures were likely to affect people especially children who never knew of anything like being out of schools for more than three months. This study investigated the effects of COVID-19 on children mental health. The study adopted an *ex-post facto* research design. The sample comprised 200 parents in Kapsabet town. Parents were sampled using multi-stage sampling technique. Data were collected using a questionnaire for parents and analysed using frequencies and percentages. The results showed that COVID-19 pandemic restriction of movement has led to psychological distress among children in Kapsabet town. It was recommended that psychological counselling should be done to improve the mental health of children in Kapsabet town.

Keywords: restriction of movement, mental health, psychological distress.

Introduction

In late 2019, the first cases of a novel pneumonia were reported in Wuhan, China and at the beginning of January 2020; the novel corona virus was linked to the respiratory disease called COVID-19 (World Health Organization, 2019). The World Health Organization (WHO) declared it as a pandemic on 11th March 2020 due to its serious and rapid spread (UN Sustainable Development Group, 2020).

In just a matter of weeks, the corona virus disease-2019 (COVID-19) pandemic has led to huge societal public health and economic challenges worldwide. The clinical effects of COVID-19 on young children are uncertain when compared with older age groups, with lower morbidity and mortality rates and no conclusive evidence supporting transmission during pregnancy. However, there is emerging evidence of increasing rates of child hyper inflammatory shock. Research on the effects of prior pandemics and disasters clearly indicates that there will be both immediate and long-term adverse consequences for many children, with particular risks faced during early childhood, when brain architecture is still rapidly developing and highly sensitive to environmental adversity.

Estimates predict an increase in maternal and child mortality in low and middle income countries as health services for non COVID related is-

sues become scarce. For example, a conservative scenario of 15% decrease in coverage of life-saving essential health interventions for 6 months in low and middle income countries is associated with a 9.8% increase in mortality among children less than 5 years of age and an 8.3% increase in maternal mortality. Before the pandemic, 43% of all children less than 5 years of age in the world were estimated to be at risk of not achieving their developmental potential.

Quarantine type measures include home confinement, banning public gatherings and commuting to work unless necessary, closing schools, universities and all non-essential businesses and avoiding contact with out of household people. The long-term consequences of the restriction of movement on mental health is not fully understood, but an increasing body of research suggests that being in restriction of movement is associated with poor social and emotional well being in children.

The first case of COVID-19 was detected in March 2020. When the number of cases increased the government closed educational institutions on 15th March 2020 and imposed a nationwide curfew from 9.00 p.m to 4.00 a.m. Educational institutions were reopened in October 2020, but a curfew from 10.00 p.m to 4.00 p.m continues.

The Ministry of Health (MoH) through its Division of Mental Health has nonetheless embarked on efforts to deliver mental health care during the pandemic (Government of Kenya, 2020). Unfortunately, the mental health response is occurring against a backdrop of an under-resourced mental health care system characterised by inaccessible services, an acute shortage of mental health workers and limited funding. This coupled with the lack of a formal mental health response plan is hindering current efforts aimed at mitigating the mental health impact of COVID-19 in the community. Given the rising incidents of domestic violence and alcohol use during the COVID-19 pandemic in Kenya and the importance of behavioural strategies in containing the pandemic, a stronger mental health response is warranted.

Statement of the Problem

Several scholars and the researchers I discussed the COVID-19 pandemic with have argued that that the restriction of movement can influence children's psychological distress. Health problems are likely to begin early and continue after the pandemic is over. Experience of any disease, breakdown of social support and stigma are possible causes of short-term health problems while factors such as economic losses can potentially cause long-term mental health issues. Some children and young people may be feeling more isolated, anxious, bored and uncertain. They may feel fear and grief over the impact of the virus on their families. To date only few studies have investigated the traumatic effects of COVID-19 pandemic on mental health of children. Orgiles, Morales, Delvecchio, Mazzeschi, and Espada (2020) were among the first to have examined the impact of COVID-19 restriction of movement on children's mental health. Similarly, another study found an association between perceived difficulty of family coexistence during the quarantine, higher level of family stress and parental reported emotional problems in children (Orgiles et al., 2020).

Chewen (2020) investigated COVID-19 pandemic curfew related stresses in a sample of women in Kimumu Ward of Eldoret town. The study found out that the majority of women in the ward had stress and anxiety that ranged from mild to moderate levels. Few studies addressed the effect of COVID-19 pandemic restriction of movement on the mental health of children in Kapsabet town. Therefore, this study examined the effect of COVID-19 on mental health of the children in Kapsabet town in Nandi County.

Research Questions

The study was guided by the following research questions:

1. To what extent have COVID-19 containment measures been implemented in Kapsabet town since 2020?

2. What was the mental health of children in Kapsabet town before and during COVID-19 pandemic restriction of movement?

3. What was the level of family coexistence during the COVID-19 pandemic restriction of movement?

4. Is there a relationship between COVID-19 pandemic restriction of movement and health status of children in Kapsabet town?

Research Hypotheses

The following research hypothesis was formulated.

H_1: There is a relationship between COVID-19 pandemic restriction of movement and mental health of children in Kapsabet town.

H_2: There is a relationship between caregiver's psychological distress and change in a child's emotional behavioural symptoms before and during COVID-19 restriction of movement.

Significance of the Study

Findings of this study will inform stakeholders about the resulting effects of COVID-19 on mental health of the children. Findings of the study will also enhance the government's efforts towards curbing of COVID-19 and also the issues arising after the COVID period. Findings will provide insights for hastening the help required in the upbringing of the children. Besides, findings will inform the need of psychological counselling among the children. Besides adding to the body of knowledge on COVID-19 and mental health of the children, findings of the study will also form a basis for further research.

Theoretical Framework

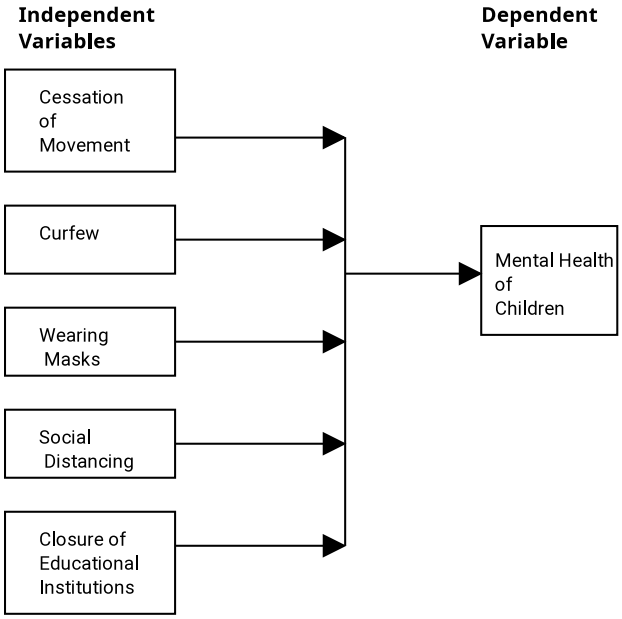
The study was guided by the theory of planned behaviour. The theory of planned behaviour is a social-cognitive model that stipulates the direct correlation between the individual's behavioural intentions and his or her actual behaviour (Ajzen, 1991, 2005; Ajzen & Fishbein, 1980). The theory of planned behaviour is an extension of the theory of reasoned action , which is in turn based on the Fishbein model. Central idea of the theory of planned behaviour is that human behaviour is determined by the following three constructs: Attitude, subjective norm and perceived behavioural control. Attitude is defined as an individual's positive or negative evaluation of the consequences (benefits or drawbacks) of performing or not performing a specific behaviour (Ajzen, 1991). Subjective norm refers to the degree of social pressure (opinion of significant others, e.g. peer pressure) an individual feels regarding the performance or non-performance of a specific behaviour (Ajzen, 1991). Perceived behavioural control is an element extending the theory of reasoned action (Ajzen, 1991)and describes an individual's perception of personal capacities or constraints (factors like time, money and chance) of performing a specific behaviour.

The theory of planned behaviour and its forerunner, the theory of reasoned action , focus on the prediction of the behaviour intention by looking at the consequences of a specific behaviour. The attitude, which is the central element of these theories, is modelled as the multiplication of the valance of a behavioural consequence with the probability that this consequence is an outcome of the behaviour. This principal is not limited to the prediction of behavioural intentions but is also applied in other areas e.g. motivation (Atkinson, 1964) or, as in Fishbein'(1963) original theory, the evaluation of objects. It was also used to evaluate attitudinal objects and attitudinal structures within the means-end theory of complex cognitive structures (Godbersen, 2016, 2019; Godbersen & Kaupp, 2019). In this context, the multiplicative model focuses on the subjective relevance of attributes of an attitudinal object and their perceived quality rather than the behavioural consequences.

Conceptual Framework

Figure 1 shows the relationship between COVID-19 containment measures and mental health of children in Kapsabet town.

Figure 1. Conceptual Framework



Scope and Delimitations of the Study

The study focused on the effect of COVID-19 on children mental health. The study targeted parents whether father or mother in equal measure. It interviewed respondents who are parents regardless of their education background. This study was conducted in Kapsabet town in Nandi County which is a small town where most families living in their own land surrounding the town. The researcher comes from the town and is familiar with the people around hence it was much easier in getting the parents as the respondents. The selection of the research respondents may be a threat where a matter of sample precision is concerned. However, this study eradicated this challenge by adopting the proportionate sampling formula to calculate the sample size from each stratum (estates) for participants' participation. Also, the issues of potent-effect of non-response from unwilling respondents may cause a challenge in the data collection threshold. Nonetheless, this study tackled this challenge by appealing to the selected respondents to honestly give the views during the process of interview and filling the questionnaire.

Limitations of the Study

The present study had certain methodological limitations. Because the participants were primarily locals within Kapsabet town, generalisation of the findings to other ethnic and/or socioeconomic groups should be approached with cautiousness. Second, changes in children's emotions and behaviour were based only on perceived parent report and not on independent observations. Finally, the assessment of change in children's emotional and behavioural functioning was based on parents' perceptions at one point in time and towards the end of the restriction of movement when the society had started opening up. Notwithstanding these methodological limitations, the findings have some implications for the development of intervention programmes to mitigate the negative impact of COVID-19 on children.

Research Design and Methodology

Research Design

The study used *ex-post facto* (correlational) design. Sampled parents were asked to rate the psychological distress of their children before and during the COVID-19 restriction of movement in 2020. The two ratings were then correlated.

Description of the Sample and Sampling Procedures

The study used a multi-stage sampling procedure. From a list of residential estates in Kapsabet County, five estates were randomly selected. In each estate forty households were sampled using systematic random sampling method.

Description of the Research Instrument

Data were collected by means of a questionnaire for parents. The questionnaire consisted of three sections. Section A demographic data. Section B is a rating scale. Participants were asked to rate the extent which COVID-19 containment measures have been implemented in Kapsabet town. Section C asked parents to rate the changes in the child's emotional and behavioural symptoms before and after the restriction of movement. The ratings were assigned using a 5 - point scale where 1 = much less and 5 = much more.

Validity and Reliability of Instruments Results

Content validity of the research instrument's results was determined by a panel of experts comprising a specialist in research and two teachers. The instrument was then trial-tested in an estate in Kapsabet town that was not part of the study. The reliability of the instrument's results was estimated using test-retest technique.

Description of Data Collection Procedure

Data were collected by the researcher and his assistants. They visited homesteads and administered questionnaires to parents in the sample.

Description of Data Analysis Procedures

Data were analysed using frequencies and percentages. The null hypothesis was tested using t-test for dependent groups.

Ethical Consideration of the Study

The researcher made prior arrangement with the respondents on the date and time to administer the questionnaire at their own convenience. The researcher explained the purpose of research to the respondent that no one was coerced to answer but allowed to participate voluntarily in the study. The aims and objectives of the research were explained before and after undertaking the research. This helped in attaining an informed consent from the respondents. The researcher maintained utmost confidentiality about the respondents' responses by keeping all responses secure and using them only for academic purpose. As it was COVID-19 period the research was done under the COVID-19 rules kept in mind.

Results

Demographic Characteristics of Respondents

Data used for the present analyses came from 200 caregivers (mothers n = 180, 90%; fathers n = 20; 10%). They ranged in age from 21-61 years (mean age Mage 39.3 years, SD = 5.5) with nearly half of them (48.3%) between the ages of 30-39 years. As shown in Table 1, most of the participants were married (55%), most participants were living in a family of more than four people including their children (47.3%) and in houses with three rooms excluding kitchen, toilet and bathroom (94.8%). Most (91.8%) of the participants had access to outside space for their children to play. Most of the participants had their children schooling in a boarding school.

Table 1
Respondents Socio-demographic Characteristics

		n	%
Gender	Female	180	90
	Male	20	10
Marital Status	Married	110	55
	Widowed	20	10
	Separated	40	20
	Single	30	15
Education Type(Children)	Boarding	120	60
	Day School	80	40

Extent to which Covid-19 Containment Measures have been implemented in Kapsabet Town

The first research question sought to determine the extent to which COVID-19 measures have been implemented in Kapsabet town. Data were collected by means of an observation schedule. The researcher and his assistants toured the town and

rated implementation of COVID-19 containment measures using a rating scale. Ratings were assigned using a 5 point scale where 1 = low compliance and 5 = high compliance. The results from observation of a random sample of five hundred people are presented in Table 2.

Table 2
Respondents Socio-demographic Characteristics

		n	%
Gender	Female	180	90
	Male	20	10
Marital Status	Married	110	55
	Widowed	20	10
	Separated	40	20
	Single	30	15
Education Type(Children)	Boarding	120	60
	Day School	80	40

The results in Table 2 indicates that all respondents (100%) indicated that closure of educational institutions was implemented to a very high extent, 26% indicated that observance of curfew rules was implemented to a low extent and an equal number of respondents indicated that it was implemented to a high and very high extent. The findings also indicate that a significant number of respondents (120 out of 200) indicated that the extent of implementation of social distancing was low and fair.

Mental Health of Children in Kapsabet Town before and During COVID-19 Pandemic restriction of movement

The second research question sought to determine the mental health of children in Kapsabet town before and during COVID-19 pandemic restriction of movement. Parents were asked to indicate the change in their child's emotional and behaviour symptoms before and during the restriction of movement. The results are presented in Table 3.

Table 3
Parent Perceptions of the Change in Child Emotional and Behavioural Symptoms before and During the Restriction of Movement

	Much Less	**Somewhat Less**	**Same**	**Somewhat More**	**Much More**
	n (%)	**n (%)**	**n (%)**	**n (%)**	**n(%)**
My child is worried	10 (5.0)	10 (5.0)	120 (60.0)	30 (15.0)	30 (15.0)
My child is restless	20 (10.0)	10 (5.0)	40 (20.0)	110 (55.0)	30 (15.0)
My child is anxious	10 (5.0)	22 (11.0)	88 (44.0)	50 (25.0)	30 (15.0)
My child is sad	15 (7.5)	35 (17.5)	50 (25.0)	70 (35.0)	30 (15.0)
My child is reluctant	10 (5.0)	15 (7.5)	90 (45.5)	35 (17.5)	50 (25.0)
My child feels lonely	8 (4.0)	22 (11.0)	60 (30.0)	70 (35.0)	40 (20.0)
My child is nervous	12 (6.0)	18 (9.0)	70 (35.0)	40 (20.0)	60 (30.0)
My child argues with the rest of the family	20 (10.0)	10 (5.0)	40 (20.0)	110 (55.0)	30 (15.0)
My child is very quiet	10 (5.0)	15 (7.5)	90 (45.5)	35 (17.5)	50 (25.0)
My child has difficulty concentrating	14 (7.0)	26 (18.0)	80 (40.0)	60 (30.0)	20 (10.0)

According to data in Table 3, children who were more lonely (35.0%) , sad (35.0%), restless (55.0%), worried (60.0%), anxious (44%) and were more likely to argue with the rest of the family (55%) during the restriction of movement compared to the pre-COVID-19 period.

The children under analysis in this study have expressed psychological distress. The most frequent sign has been the excessive attachment to mothers, which is a very common reaction in children who seek security and protection when their living conditions are significantly altered. There are also accounts of rebellious, defiant and stub-

born behaviour. The behaviours are manifestations of these evolutionary crises and therefore, depending on the adults' management of the permanent coexistence at home and the relationship with children, they may have been more or less marked.

According to parents, the most difficult challenges during the restriction of movement and quarantine period have been dealing with behavioural manifestations characterised by defiant, rebellious and stubborn attitudes. The latter has meant an overload of family roles, in particular for mothers. Lack of outdoor activities for the children has created them into dull babies causing them to be addicted to the screens affecting their mental growth.

Level of Family Coexistence during the Covid-19 Pandemic restriction of movement

On average, caregivers reported that family coexistence during the restriction of movement was moderately difficult (M = 2.83, SD = 1.10; range 1-5). Frequency distributions, revealed that difficulties with family coexistence varied in intensity however most caregivers reported some level of difficulty with approximately 1 in 3 (34.4%) feeling that it was difficult or very difficult and 1 in 3 (36.5%) feeling that it was moderately difficult.

Caregivers' psychological distress score on the K6 scale suggests that on average caregivers experienced moderate levels of psychological distress (M = 6.78, SD = 5.26); 42.4% of the caregivers experienced moderate psychological distress (4 < K6 score < 13) and 15.4% experienced severe psychological distress (K6 ≥ 13). Moreover, they were more likely to report that their children were more afraid of COVID-19 infection, more likely to argue with the rest of the family, cried more easily, ate a lot, had more difficulty concentrating, had more behavioural problems, were more dependent on them and were more worried when one of the parents left the house.

Small to strong significant correlations (r range = 0.07-0.43) were found between caregivers' perception of how easy it was for the family to live together during the restriction of movement and 22 of the 23 child symptoms (Table 3). When family coexistence during the restriction of movement was rated as more difficult, children were perceived significantly more worried, restless, anxious, sad, reluctant, lonely, uneasy, nervous, quiet, angry, frustrated, bored and irritable during than before the quarantine. Additionally, they were significantly more likely to be reported to be afraid of COVID-19 infection, to argue with the rest of the family, to cry more easily, to eat a lot, to have more difficulty concentrating, more behavioural problems and nightmares, to be more dependent on them and more worried when one of the parents left the house.

Tests of Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

H_{01}: There is no significant relationship between COVID-19 pandemic restriction of movement and the mental health of children in Kapsabet town.

H_{02}: There is no significant relationship between caregiver's psychological distress and change in a child emotional and behavioural symptoms before and during COVID-19 pandemic restriction of movement.

H_{01}: There is no significant relationship between COVID-19 pandemic restriction of movement and mental health of children in Kapsabet town.

H_{11}: There is a significant relationship between COVID-19 pandemic restriction of movement and mental health of children in Kapsabet County.

The null hypothesis was tested using t-test for the significance of r. Since the obtained p- value of 0.00 is less than that 0.05, we reject the null hypothesis. Consequently, there is a significant relationship between COVID-19 pandemic restriction of movement and mental health of children in Kapsabet town. This means that there is a relationship between COVID-19 pandemic restriction of movement and the mental health of children in Kapsabet town.

H_{02}: There is no significant relationship between caregiver's psychological distress and change in a child's emotional and behavioural symptoms before and during COVID-19 pandemic restriction of movement.

H_{12}: There is a significant relationship between caregiver's psychological distress and change in a child's emotional and behavioural symptoms before and during COVID-19 pandemic restriction of movement.

Table 4

Pearson Correlations between Caregiver Psychological Distress on the Kessler PDS and Perceived Change in Child Emotional and Behavioural Symptoms before and during the Restriction of Movement

	Psychological Distress	**Coexistence Difficulty**
My child is worried	0.16**	0.29**
My child is restless	0.18**	0.34**
My child is anxious	0.23**	0.33**
My child is sad	0.18**	0.36**
My child has nightmares	0.06	0.13**
My child is reluctant	0.20**	0.32**
My child feels lonely	0.15**	0.26**
My child is uneasy	0.25**	0.34**
My child is nervous	0.25**	0.32**
My child argues with the rest of the family	0.18**	0.43**
My child is very quiet	0.02	0.07**
My child cries easily	0.21**	0.31**
My child is angry	0.21**	0.39**
My child feels frustrated	0.22**	0.39**
My child is bored	0.23**	0.42**
My child is irritable	0.24**	0.42**

Association between Caregiver Psychological Distress and Change in Child Emotional and Behavioural Symptoms before and During the restriction of movement

Table 4 shows that there were significant correlations, albeit of small magnitude (r range = 0.07 – 0.25) between caregivers' level of psychological distress and most of child emotional and behavioural symptoms (i.e. 20 of the 23 symptoms). Caregivers with higher psychological distress were significantly more likely to report their children being more worried, restless, anxious, sad, lonely, uneasy, nervous, angry, frustrated, bored and irritable during than before.

Conclusions

Based on the findings of the study, the following conclusions are reached.

1. The level of observance of COVID-19 pandemic measures in Kapsabet town is low.

2. Covid-19 pandemic restriction of movement has affected the mental health of children in Kapsabet town. In view of the foregoing, this study concludes that in spite of the measures placed to curb the spread of COVID-19 it has directly or indirectly left an impact on the mental health of the children.

Recommendations

1. Efforts should be made to improve compliance with COVID-19 pandemic measures.Psychological counselling of children is a matter of urgent attention. This should be done to improve the mental health of children.

2. Psychological counselling of children is a matter of urgent attention. This should be done to improve the mental health of children.

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