Texila International Journal of Public Health
ISSN: 2520-3134
DOI: 10.21522/TIJPH.2013.13.03.Art008

Adherence to the Use of Masks by Communities in Compliance with Covid-19 Prevention Measures in Kadoma City, Zimbabwe

A. Chimbaru[1*], D. Chirundu[2], N. Midzi[3]
[1]*Texila American University*
[2]*Kadoma City Health Dept, Kadoma Zimbabwe*
[3]*National Institute of Health Research, Harare, Zimbabwe*

Abstract

Given non-availability of effective therapeutics during the COVID-19 pandemic, Public health and social measures were crucial to limiting the transmission of the diseases, amongst which Masks were introduced as an intervention. The use of masks reduced transmission in medical settings, and the same results would be anticipated in communities affected by COVID-19. Compliance to the use of masks remains a challenge in many countries. A case-control study design was used to investigate factors affecting compliance with COVID-19 preventive measures. We recruited 402 respondents for the study. Out of these, 206 case respondents were selected using random numbers generated by Excel 2017, which were then matched to the line listing. The remaining 186 controls were selected based on proximity to confirmed cases. We used an interviewer-administered questionnaire to collect data. Analysis was done using Epi-Info 7 software. Out of the total respondents, a proportion of 64% (132/206) of the total cases and 45% (89/196) of the total controls (p=0.0002) believed that using masks in the previous week helped to prevent COVID-19. Amongst the male respondents, who put on masks in the past two weeks to prevent COVID-19, 66% (75/113) of them were cases and 42% (43/103) of were controls (p=0.001). We conclude that compliance with the use of masks was as a result of positive perception of the Kadoma community who believed that use of masks prevented them from getting infected by COVID 19. Availability of masks, government policies, employers' enforcement also contributed to compliance in public places.

Keywords: *COVID 19, Compliance, Kadoma, Mask.*

Introduction

Severe Acute Respiratory Syndrome (SARS) is an airborne virus that can be spread through droplets of saliva as well as surfaces that have been contaminated by someone infected by the virus [21]. Airborne diseases that are of clinical importance include bacteria, viruses, and fungi that may be spread through fine mists, dust, aerosols, or liquids [2]. COVID-19, a Severe Acute Respiratory disease, was declared a Public Health Emergency of International Concern by the World Health Organisation in January 2020 and a pandemic in March 2020 [22]. After more than 2 years since the first COVID-19 case was reported, the pandemic remained an acute global emergency, with millions of people infected by COVID-19 during the first eight months of 2022 and more than 1 million reported dead from the disease [25].

Given the non-availability of effective therapeutics for the management of COVID-19, Public Health and Social Measures (PHSM) are critical in limiting the transmission of the disease as well as reducing morbidity and mortality. These include, physical distancing, avoiding crowded settings, hand hygiene, respiratory etiquette, mask-wearing [26]. The

Received: 28.01.2025 ***Accepted: 07.05.2025*** ***Published on: 03.10.2025***
****Corresponding Author: achimbaru@gmail.com***

use of masks until recently was exclusively practiced by health workers as part of a prevention and control strategy during procedures that required asepsis [7]. However, with the declaration of COVID-19, masks were adopted as part of a comprehensive package of infection preventive measures to limit the spread of SARS-CoV-2, the virus that causes COVID-19 [24].

Wearing a face mask reduces transmissibility per contact by reducing transmission of infected droplets as witnessed in laboratories and clinical settings. The use of masks could be more effective at stopping the spread of the virus when compliance is high among populations [10]. Compliance with public health measures reflects the interaction of a range of modifiable and non-modifiable factors including the availability of resources, socioeconomic status, perceived consequences, and their perceived level of personal and local community risk [20].

In a study conducted in Hong Kong it was established that community wide use of masks may contribute to the control of COVID 19 by reducing amount of emissions of contaminated saliva [5]. In a study conducted in Uganda, mask-wearing was found to be related to the level of knowledge on *COVID-19*, nonetheless continued use was affected by availability and discomfort [14].

In a study conducted in Senegal, Dakar, 70% of the respondents reported discomfort when using masks [13]. Low risk perception contributed to poor compliance to use of masks in a study conducted in Zimbabwe. In the same study respondents complied using masks as they had confidence that mask helped them to prevent contracting COVID 19, others complied as they feared the law enforcement officers [17]. In a study conducted in the community in Malawi, it was noted that wearing masks, avoiding crowds and staying at home were all below 25% [3].

Compliance on the use of masks remains low in several countries with varying reasons which do not outweigh the benefits of preventing COVID 19 as shown by various studies. The reasons for the continued spread of outbreak could be attributed to noncompliance to Public Health and Social measures which are critical in the control of COVID 19. During phase 3 Communities experienced pandemic fatigue of the outbreak in Zimbabwe thereby were no longer complying with putting on of masks, practicing social distancing and frequent handwashing [17]. According to the Health Belief Model, messages will achieve significant behaviour change if they target specific perceived barriers, self-efficacy, threat and benefits which individuals or communities conceptualize in order to protect themselves from contracting diseases [11].

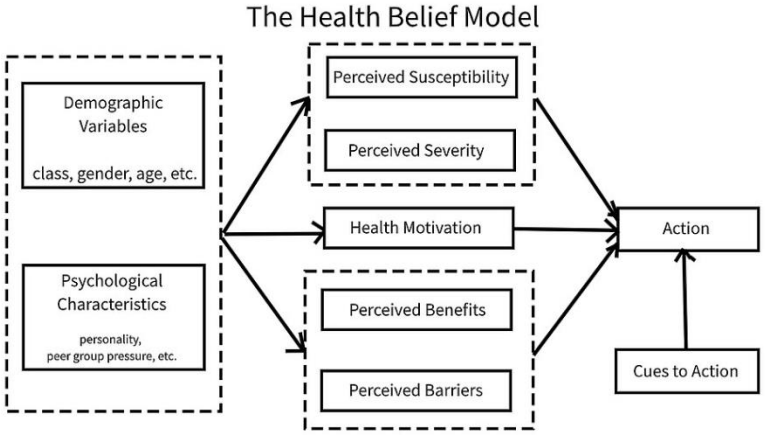

Figure 1. Rosenstock Health Belief Model [19]

To understand the factors affecting compliance to use of masks, this study was carried out. The broad objective of this study was to assess factors associated with compliance on the use of public health and social measures to prevent COVID-19 in Kadoma City in 2023.

Materials and Methods

Study Design

A case control study design was conducted to investigate factors affecting compliance to *COVID-19* preventive measures. A case was defined as a resident of Kadoma City who tested positive using PCR or RDT during 2021. A control was any resident of Kadoma who was not infected by *COVID-19* and did not show any signs and symptom of COVID 19 during 2021.

Study Setting

The study was conducted in Kadoma City, one of the 32 urban centers in Zimbabwe, with an estimated population of 123,000. Health services in the city are delivered through a network of six council clinics, eight private practitioners, two private hospitals, three clinics operated by uniformed forces, and one government general hospital. All public health facilities in Kadoma provides comprehensive Covid-19 prevention and treatment packages, both at the facilities and through community outreach programs. A map showing the study setting is presented in Figure 2.

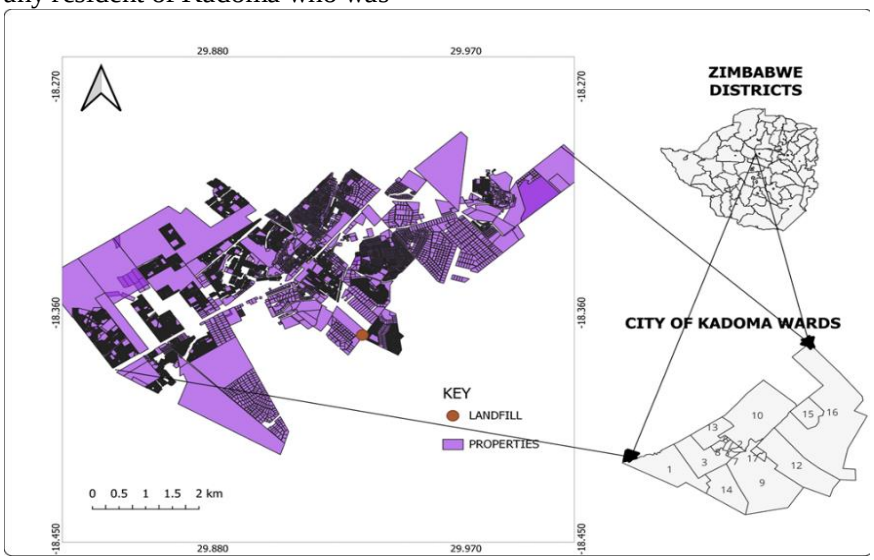

Figure 2. Map of Kadoma City (Study Setting) in Zimbabwe, 2024 [12]

Eligibility

All confirmed COVID-19 cases above 18 years who were diagnosed, confirmed positive, recovered and who were resident in Kadoma City during the study period January to December 2021 appearing on the patient line listing were included in the study. Any confirmed COVID-19 cases, not appearing on the line list; not a usual resident of Kadoma or diagnosed outside Kadoma City; demised case or anyone who refused to participate were excluded from the study.

Study Population and Study Unit

The study population was residents of Kadoma City urban residing in the suburbs who were above 18 years of age. The study unit was any individual who suffered and recovered from COVID-19, identified through the line list from Health facilities distributed in the city suburbs and controls were identified in the same suburb with proximity to confirmed recovered cases.

Sample Size

The sample size was calculated using the Epi Info Stat Cal [6] based on the estimated

population of Kadoma City, 123 000, with expected frequency of 50% as no compliance study had been conducted. The margin of error was maintained at 5% and a confidence Interval of 95%, confidence limit of 5% was applied with a design effect of 1 recommended by CDC on formula for population survey method. The estimated sample size was 382.

Sample Selection

The cases were identified through a consolidated COVID-19 case line list generated from Health Facilities where diagnosis was conducted during that period. Each patient on the line list was assigned a unique case number as they were entered in data base at central office used for identification purposes. Using Excel 2017, random numbers were generated. Case numbers on the line list which matched the randomly generated numbers were recruited into the study. Controls were selected based on proximity to confirmed cases.

Data Collection and Analysis

Data were collected using a pretested interviewer-administered questionnaire. The questionnaire was developed based on existing WHO CDC guidelines and literature review. It contained continuous and categorical variables as well as Likert Scales. Epi Infor 7™ was used for data capture and analysis. Means, frequencies, and tables were generated. Descriptive statistics were used to describe and synthesize data so as to give insight into a phenomenon under study [18].

Ethical Consideration

The study was ethically approved by the national regulatory board (the Medical Research Council of Zimbabwe). Informed consent was obtained from all respondents, and consent forms were signed. Confidentiality and anonymity of the respondents were guaranteed and communicated to research participants.

Results

Demographic Characteristics of Respondents

A total of 402 respondents were interviewed. The respondents consisted of males, 54% (216/402) and 46% (186/402) females (*p=0.034*). The cases interviewed indicated that 93% (192/206) had suffered from COVID once whilst 6.3% (13/206) had suffered from COVID-19 twice and only one person had suffered from COVID-19 thrice.

Wearing a Mask in Public is a Protective Measure which Families can Apply

The findings of wearing a mask in the public as a protective measure by families of respondents are presented in Figure 3.

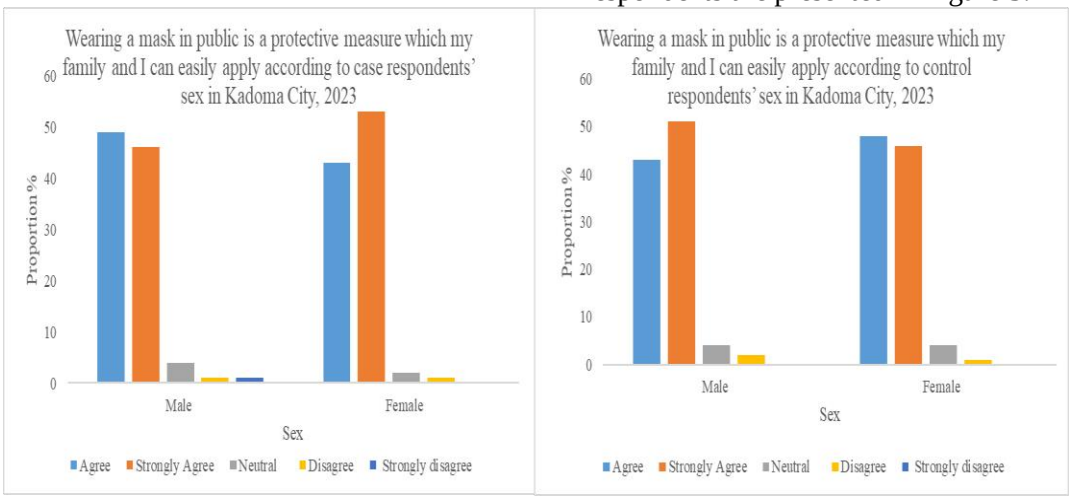

Figure 3. Wearing a Mask in Public is a Protective Measure which my Family and I can According to Respondents' Sex in Kadoma City, 2023

Amongst the male respondents, a proportion of 49% (55/113) of the cases and 43% (44/103) of controls agreed; 46% (52/113) of the cases and 51% (53/103) of controls strongly agreed; 4% (4/113) of the cases and 4% (4/103) of the controls were neutral; 1% (1/113) of the cases, 2% (2/103) of the controls disagreed and 1% (1/113) of the cases strongly disagreed. Amongst the female respondents a proportion of 43% (40/93) of the cases and 48% (45/93) of the controls agreed; 54% (50/93) of the cases and 46% (43/93) of controls strongly agreed; 2% (2/93) of cases and 4% (4/93) of the controls were neutral; Only 1% (1/93) of cases and 1% (1/93) of the controls disagreed.

Wearing a Mask in Public is a Protective Measure according to respondents' Social Status

The results of wearing a mask in public as a protective measure which can easily be applied by the families for respondents revealed that 47% (62/133) of the married case respondents and 41% (46/133) of the controls agreed with the statement (*p=0.0455*); 48% (64/133) of the cases and 51% (58/133) of the controls strongly agreed with the statement; 3% (4/133) of the case and 7% (8/133) of the controls were neutral.

The results of wearing a mask in the public as a protective measure which can easily be applied by the families for respondents by sex of respondent revealed the following amongst the respondents formally employed, 56% (50/90) of the cases and 42% (16/38) of the controls (*p=<0.00001*) agreed with the statement; 40% (36/90) of the cases and 50% (19/38) of the controls strongly agreed with the statement. Amongst those informally employed, 24% (7/29) of the cases, which is 24% (7/206) of the total cases and 44% (22/50) of the controls which is 11% (22/196) of the total control respondents (*p=0.002*) agreed with the statement.

Use of Mask in the Past Week to Prevent Contracting COVID 19

The results on the use of masks in the past two weeks to prevent *COVID-19* are presented in Figure 4 according to sex of respondent.

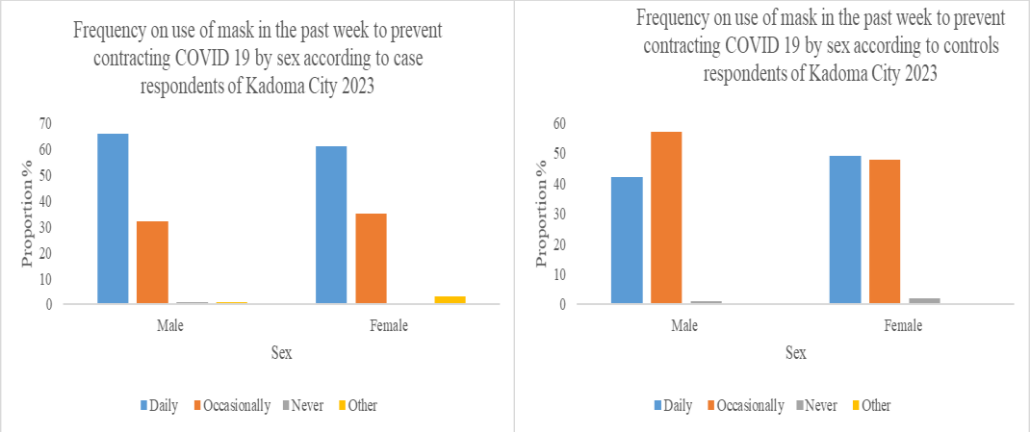

Figure 4. Frequency Use of Mask in the Past Week to Prevent Contracting COVID-19 by Sex according to Respondents of Kadoma City 2023

Out of the total respondents a proportion of 64% (132/206) of the total cases and 45% (89/196) of the total controls (*p=0.0002)* used masks in the previous week. Amongst the male respondents, those who put on masks in past two weeks to prevent COVID-19 were as follows; daily 66% (75/113) of the cases and 42% (43/103) of the controls (*p=0.001*). According to the female respondents, 61% (57/113) of the cases and 49% (46/103) of the controls put on masks daily; 35% (33/113) of the cases and 48% (45/103) of the controls occasionally put on masks. The proportion of males who put on masks in the past two weeks was higher amongst male cases as compared to female cases.

Frequency use of Mask in the Past Week to Prevent Contracting COVID 19 by Social Status of Respondents

The results on using masks in the past week to prevent contracting COVID 19 revealed the following; <20 years, 60% (6/10) of the cases and 47% (9/19) of the controls on a daily basis; Amongst the >20-30 age groups, 72% (48/67) of the cases and 43% (26/61) of the controls (*p=0.001*) put on mask daily; Amongst the >30-40 age group, 59% (23/39) of the cases and 48% (29/60) of the controls put on masks daily; according to the >40-50 years' age group, 55% (23/42) of the cases and 38% (12/32) of the controls put on masks daily; amongst the >50-60 years' age group, 72% (18/25) of the cases and 70% (7/10) of the controls (*p=0.03*) put on mask daily.

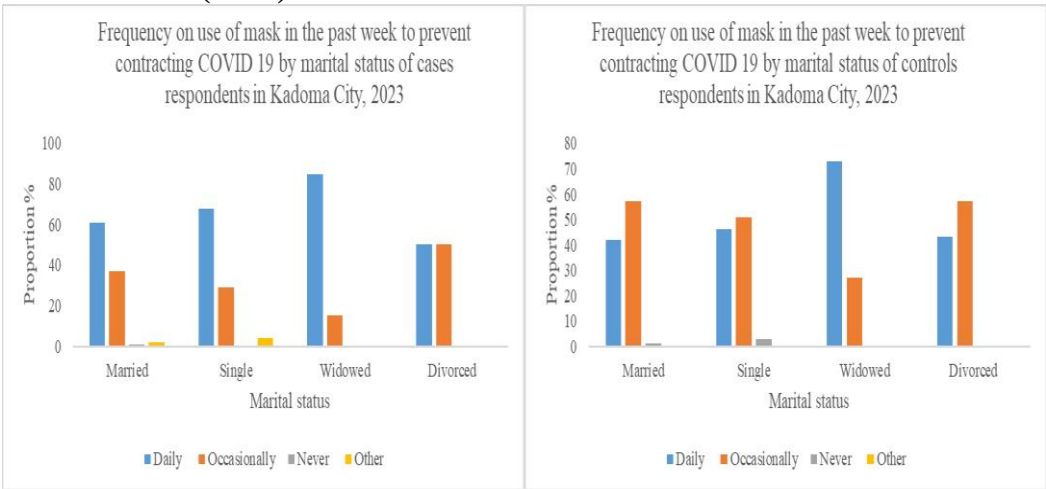

Figure 5. Frequency use of Mask in the Past Week to Prevent Contracting COVID-19 by Marital Status of Respondents in Kadoma City, 2023

The results on use of masks in the previous two weeks to prevent contracting COVID-19 are presented in Figure 5 according to marital status of respondent. The use of masks to prevent COVID-19 by marital status was as follows; Married respondents, 61% (81/133) of the cases and 42% (48/113) of the controls (*p=0.001*) put on mask daily; the single respondents, 68% (38/56) of the cases and 46% (30/65) of the controls put on masks daily; 29% (16/56) of the cases and 51% (33/65) of the controls occasionally put on masks.

The results on the use of masks to prevent COVID-19 according to educational level was as follows, amongst those who never attended school; 60% (6/10) of the cases and 36% (4/11) of the controls put on masks daily; amongst the grade 7, 67% (8/12) of the cases and 50% (5/10) of the controls put on mask daily, amongst those attained form 3, 33% (1/3) of the cases and 67% (8/12) of the controls (*p=0.01*) put on masks daily; Amongst the form 4 respondents, 67% (65/97) of the cases and 41% (39/95) of the controls (*p=0.001*) put on masks daily.

The findings on the use of masks to prevent COVID-19 in the past two weeks according to employment status were as follows amongst the various categories; 61% (55/90) of the cases and 47% (17/36) of the contacts (*p=0.00001*) put on masks daily; 38% (34/90) of the cases and 53% (19/36) of the cases put on masks occasionally; Amongst the formally employed, 90% (26/29) of the cases and 58% (29/50) of the controls used masks daily. Those not employed responded as followed: 59% (37/63) of the cases and 40% (29/73) of the controls put on masks daily; 37% (23/63) of cases.

The results on use of masks in the previous two weeks to prevent contracting COVID-*19* are presented in Table 1 according to area of residence of respondent.

Table 1. Use of Mask in the Past Week to Prevent Contracting COVID by Area of Residence in Kadoma City, 2023

Area of residence	Cases				Controls				P Value
	Daily # %	Occasionally # %	Never # %	Other # %	Daily # %	Occasionally # %	Never # %	Other # %	
High Density Suburbs	102 (69)	41 (28)	1 (1)	3 (2)	67 (49)	70 (51)	1 (1)	0 (0)	0.002.
Low density Suburb	30 (51)	28 (47)	0 (0)	1 (2)	22 (38)	34 (59)	2 (3)	0 (0)	0.31

According to area of residence, those staying in high density suburbs gave the following responses on the use of masks in the past week; 69% (102/147) of the cases and 49% (67/138) of the controls (*p=0.002)* put on masks daily; those staying in the low-density suburbs, 51% (30/59) of the cases and 38% (22/58) of the controls put on masks daily.

Circumstances for Use of a Mask to Prevent Contracting COVID-19 in Kadoma City, 2023

The circumstances for using masks to prevent contracting COVID 19 is presented in Figure 6.

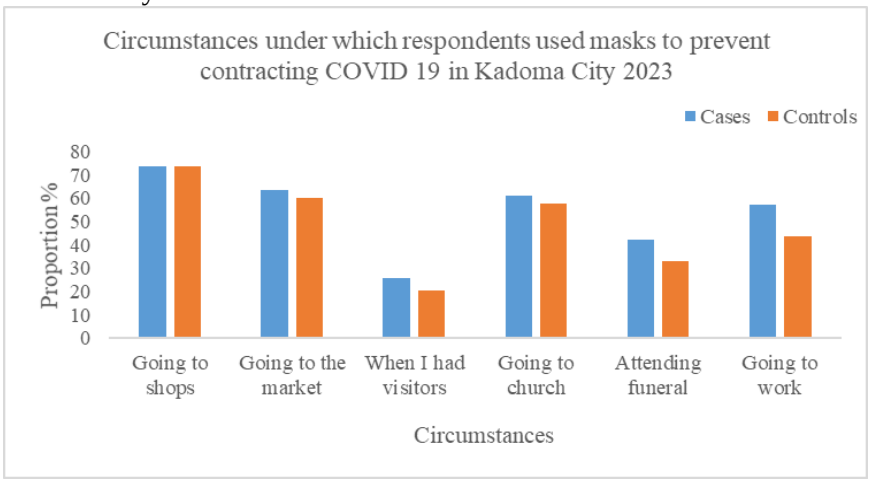

Figure 6.1 Circumstances under which Respondents used Masks to Prevent Contracting COVID-19 in Kadoma City 2023

The proportion of cases who put on masks when going to shops is 74% (152/206) and that of controls was 73% (144/196). The second highest circumstances for putting on masks amongst both cases and controls was when going to the market, a proportion of 63% (131/206) amongst cases and 60% (118/196) amongst controls. The proportion of respondents who put on mask when they had visitors were as follows; 26% (53/206) of the cases and 20% (40/196) of the controls. Amongst respondents going to work, a proportion of 57% (118/206) amongst cases and 45% (85/196) of the controls (*p=0.005*) put on their mask when leaving home. In a study conducted in Spain, 86% of the respondents indicated they would put on mask when going to crowded places, 67% on public transport and 50% when meeting with family and friends [5]. The proportion of those who put on masks when

they have visitors was higher than the proportion in this study.

Frequency of Changing Masks to Prevent COVID-19 – Kadoma City 2023

The frequency of changing masks by respondents is presented in Figure 7 below.

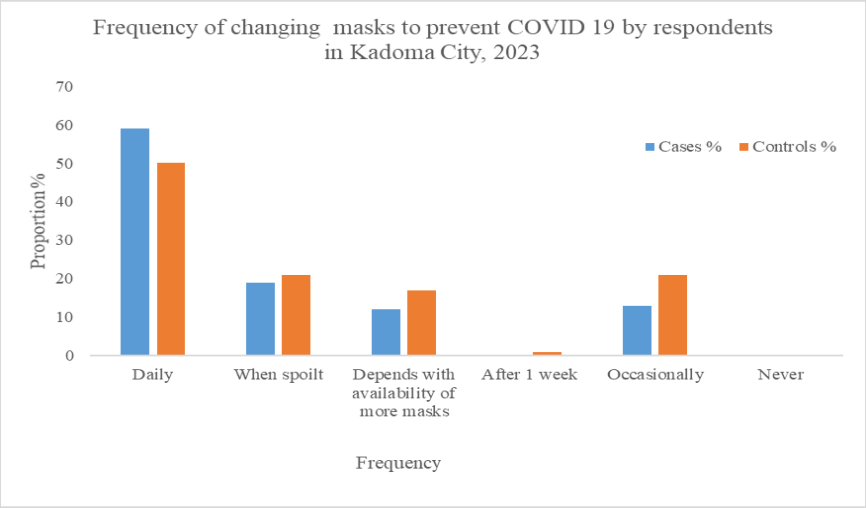

Figure 7. Frequency of Changing Masks to Prevent COVID-19 by Respondents in Kadoma City, 2023

The following were the responses; 59% (121/206) of the cases and 50% (98/196) of the controls changed masks daily; 19% (39/206) of the cases and 21% (42/196) of the controls changed masks when spoilt; 13% (27/206) of the cases and 21% (42/196) (*p=0.03)* occasionally changed masks.

Obtaining Masks for Family Members according to Respondent Social Status of Respondents

The results for obtaining masks for the respondents and family members amongst the males are as follows; 62% (70/113) of the cases and 56% (58/103) of the controls had no difficulties; Amongst the females, 52% (48/93) of the cases and 51% (47/103) controls had no difficulty. The results for obtaining masks for the respondents and family members according to respondent's age revealed the following: amongst those <20 years, 50% (5/10) of the cases and 68% (13/19) of the controls (*p=0.04*) indicated it was not at all difficult. Respondents between >20-30 years' age group responded as follows, 51% (34/67) of the cases and 66% (40/61) of the controls indicated it was not difficult at all. Amongst the >40-50 years' age group, 64% (27/42) of the cases and 38% (12/32) of the controls (*p=0.02*) indicated it was not difficult at all.

The results for obtaining masks for the respondents and family members are presented in Figure 5 according to respondent's marital status. On whether it was difficult to obtain masks for the respondent and the family, the following were the responses according to marital status. According to those who were married, 59% (78/133) of the cases and 49% (54/113) of the controls (*p=0.03*) and 45% (51/113) of the controls said it was not difficult. Those who were single, 52% (29/56) of the cases and 66% (42/65) of the controls indicated it was not at all difficulty. Amongst the widowed, 63% (8/13) of the cases and 83% (5/11) of the controls said it was not difficult at all.

The results for obtaining masks for the respondents and family members according to respondent's employment status revealed the following amongst those formally employed, 66% (59/90) of the cases and 64% (23/36) of the controls (*p = <0.00001*) indicated that it was not at all difficult. Amongst the informally employed, 31% (9/29) of the cases and 42%

(21/50) of the controls (*p=0.02*) indicated it was not at all difficult. Amongst the students, 63% (5/8) of the cases and 79% (15/19) of the controls (*p=0.02*) indicated it was not at all difficult. Responses according to those not employed, 52% (33/63) of the cases and 53% (39/73) of controls indicated it is not difficult at all.

Discussion

The findings of this study revealed that, the highest proportion of respondents who agreed wearing a mask in the public as a protective measure were amongst the male case respondents (49%) as compared to the female case respondents (43%). As for those who strongly agreed, the highest proportion was amongst the female case respondents (51%) as compared to the male respondents (46%). The proportion of male case respondents (49%) who agreed were higher as compared to the male control case respondents (43%). The proportion of female case respondents (53%) who strongly agreed was higher than female control respondents (46%). In a study conducted in Ethiopia, 46% of the respondents indicated that Masks prevented *COVID-19* transmission [8]. In another study conducted in Ethiopia, 82% of the respondents indicated that using masks will prevent transmission of *COVID-19* [4]. This study had the highest number of those who agreed considering the combined proportions of the two categories. Amongst the married case respondents, who agreed that wearing a mask was a protective measure was 47% as compared to 41% of the controls. The highest proportion of those who strongly agreed wearing masks as a protective measure was amongst the widowed at 82% amongst the controls and 69% amongst the cases. In this study, there was a significant difference, (*p=<0.00001)* amongst the formally employed case and control respondents who agreed that wearing masks as a protective measure which can easily be applied by the families with a proportion of 56% and 42% respectively.

In this study, the proportion of respondents who used masks in the past two weeks to prevent *COVID-19* was higher amongst the cases, 64% as compared to controls at 45% which was statistically significant (*p=0.0002*). The finding of this study were much higher than the people who used masks on a daily basis in Malawi which was lower than 25% [3].

According to findings of this study, amongst > 20-30 years' age group, the case respondents had the highest proportion, 72% as compared to control respondents, 43% who use masks daily to prevent *COVID-19* which was statistically significant (*p=0.001)*. Amongst the >50-60 years' age group, the proportion of respondents who used mask to prevent COVID-19 was slightly higher amongst the cases, 72% and 70% amongst controls statistically significant *(p=0.03*). In a study conducted in China, 96.5% of the 16-29 years' age group, 99.1% of the 30-49 years' age group, 98.6% of the 50+ years wore masks daily when going to public places [28]. The proportions of the results for the study in China were higher than the ones in this study, though the age groups do not match directly. The married case respondents in this study who agreed that putting on masks had a higher proportion, 61% as compared to controls with 42% which was statistically significant *(p=0.001)*.

Amongst the ones whose level of education was form 3 in this study, the proportion of the control respondents who occasionally put on masks was 33% of the cases and 67% of the controls which had a statistically significant *(p=0.01)*. As for the ones whose level of education was form 4, the case respondents who put on masks daily was 67% as compared to 41% amongst the controls which was statistically significant *(p=0.001)*. In a study conducted in China, 96.7% of the Middle school, 98.3% with associate degree, 98.4 with bachelor's degree, and 98.1% with master's and above of the respondents, used masks on a daily basis [28]. These proportions are higher than this study though the educational categories are

not the same. The findings of the study show that those who were formally employed put on their masks daily with the case respondents with highest proportion, 61% as compared to control respondents, 47% statistically significant (*p=0.00001).* Amongst the formally employed the proportion of those who wore mask daily was higher amongst the cases, 90% as compared to 58% amongst the controls. In a study conducted in China, proportion of wearing mask on a daily basis by occupation were as follows; 98.3% of the physical labor, 98% unemployed, 96.2% of the students and 98.6% of mental labor [28]. These results are higher than the study comparing the responses on students and unemployed which can be interpreted are similar categories the study. The proportion of respondents staying >5-7 people who wore masks daily was higher amongst the cases, 72% as compared to control respondents, 38% which was significant (*p=0.0004)*. The findings of this study revealed that, the highest proportion of respondents who put on mask daily was amongst those staying in the high-density suburbs, 69% as compared to controls in low density suburb, 49% which was statistically significant *(p=0.002)*. Amongst the case respondents, a higher proportion of those who put on masks was amongst the residence of high-density suburb, 69% as compared to those in high density, 51%. Amongst the controls, it was also noted that those in the high-density suburbs had a higher proportion (49%) of respondents who put one their masks daily as compared to those in low density suburbs (38%).

In this study, the highest proportion of putting on masks amongst the total respondents was when going to the shops which was 74% and 73% amongst cases and controls respectively. Amongst the respondents going to work, a higher proportion was amongst the case respondents at 57% and controls 45% which was statistically significant (*p=0.005)*. In an observational study conducted in the United States, 98% of people going to the shops wore masks when it was a shop owners enforced this public health requirement [9]. The high proportion was made possible by enforcement by shop owners beyond individuals.

In this study, the highest proportion of respondents changed masks daily among the cases, 59% and controls 50%. Only a small proportion changed their masks when spoilt amongst cases, 19% and controls, 21% statistically significant (*p=0.03*). Currently there is no known observable online data or results which can be used for comparison in this study findings.

Obtaining masks according to sex in this this study was not difficult amongst the male respondents, 62% and 56% of the cases and control respondents respectively. The proportion of females who had difficulties in obtaining masks was almost similar amongst the cases and controls respectively with proportions of, 43 % and 41% respectively. According to finding of this study, the proportion of < 20 years who indicated they had no difficulty in obtaining masks for themselves and family members was 50% and 68% amongst cases and controls which was statistically significant *(p=0.04)*. The proportion of respondents who indicated it was not difficult at all in obtaining masks for themselves and family members in the <40-50 years' age group was 64% and 38% amongst cases and controls respectively statistically significant *(p=0.02)*. The study showed that married respondents had no problem obtaining masks for themselves and family had proportions of 59% and 49% amongst cases and controls which was statistically significant (*p=0.03).* The widows who had no difficulty in obtaining masks had highest proportion of 63% and 83% amongst the cases and controls respectively. According to findings of this study, those formally employed who did not have difficulties in obtaining masks were 66% and 64% amongst cases and controls which was statistically significant (*p=0.00001*). Amongst the informally employed, the highest

proportion who had no difficulties was amongst the controls, 42% as compared to 31% statistically significant (*p=0.02)*. Students had the highest proportions who had no problems in obtaining masks, 63% and 79% amongst cases and controls statistically significant (*p=0.02)*.

Conclusion

We conclude that compliance to use of mask was influenced by positive perception of the Kadoma community who believed that use of masks prevented them from getting infected by COVID 19. Respondents going to public places and workplaces put on masks in compliance to government directives. Official public policies by government and authorities do influence compliance to use of masks. The rate of compliance to wearing masks was higher amongst the cases as compared to controls. Availability of masks varies with families and this needs to be addressed during pandemics as not all the community members will be able to afford masks. Availability of masks was not easy for all the respondents, which could affect utilization and frequency of change of the masks, this is a barrier which needs attention. Discomfort and irritation mentioned in the study could adversely affect consistent us of masks by the respondents. There is a need for emphasis on the benefits of masks as well as the risk which can be both social and economic once one gets infected. The use of masks on a daily basis by the community shows a clue of acceptance which is aligned to the HBM model.

We recommend advocacy on consistent use of masks, availability and enforcement of the necessary legislation.

Conflict of interest

There is no conflict of interest.

Acknowledgements

I would like to take this opportunity to appreciate everyone who contributed to the overall success of this study. I am grateful to;

1. Professor Nicholas, my supervisor for his invaluable advice and support during the study as well as reviewing of this article.
2. Dr. Daniel Chirundu, for his experience, knowledge guidance, and encouragement throughout my research. He also played a critical role in overseeing the data collection and entry and review of this article.
3. The data collection and entry teams led by Mr Jenje.

References

[1]. Abraham, C., & Sheeran, P., 2015, The Health Belief Model. https://www.researchgate.net/figure/The-health-belief-model_fig1_290193215

[2]. Ather, B., Mirza, T. M., & Edemekon., P. F., 2023, Airborne Precautions. https://www.ncbi.nlm.nih.gov/books/NBK531468/

[3]. Banda, J., Dube, A. N., Brumfield, S., Amoah, A. S., Reniers, G., Crampin, A. C., & Helleringer, S., 2021, Knowledge, risk perceptions, and behaviors related to the COVID-19 pandemic in Malawi. https://www.demographic-research.org/articles/volume/44/20

[4]. Bekele, D., Tolossa, T., Tsegaye, R., & Teshome, W., 2020, The Knowledge and practice towards *COVID-19* pandemic prevention among residents of Ethiopia; *An online Cross Sectional Study.* https://www.biorxiv.org/content/10.1101/2020.06.01.127381v1.full.pdf

[5]. Beca-Martínez, M. T., Romay-Barja, M., Falcón-Romero, M., Rodríguez-Blázquez, C., Benito-Llanes, A., & Forjaz, M. J., 2021, Compliance with the main preventive measures of COVID-19 in Spain, the role of knowledge, attitudes, *practices, and risk perception.* https://onlinelibrary.wiley.com/doi/full/10.1111/tbed.14364

[6]. CDC, 2016, Epi Infor 7 User Guide. Retrieved from https://www.cdc.gov/epiinfo/

[7]. Cheng, V. C. C., Wong, S. C., Chuang, V. W. M., So, S. Y. C., Chen, J. H. K., Sridhar, S., To, K.

K. W., 2020, The role of community-wide wearing of face mask for control of coronavirus disease 2019 (COVID-19) *epidemic due to SARS-CoV-2*, https://pubmed.ncbi.nlm.nih.gov/32335167/

[8]. Desalegn, Z., Deyessa, N., Teka, B., Shiferaw, W., Hailemariam, D., Addissie, A., Abebe, T., 2021, COVID-19 and the public response: Knowledge, attitude and practice of the public in mitigating the pandemic in Addis Ababa. *Ethiopia.* https://doi.org/10.1371/journal.pone.0244780

[9]. Haischer, M. H., Beilfuss, R., Hart, M. R., Opielinski, L., Wrucke, D., Zirgaitis, G., Hunter, S. K., 2020, Who is wearing a mask? Gender-, age-, and location-related differences during the COVID-19 pandemic | *PLOS ONE.* https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0240785

[10]. Howard, J., Huang, A., Li, Z., Tufekci, Z., Zdimal, V., Van Der Westhuizen, H., Fridmand, L., 2020, Face Masks Against COVID-19: An Evidence Review. https://www.preprints.org/manuscript/202004.0203/v1

[11]. Jones, C. L., Jensen, J. D., Scherr, C. L., Brown, N. R., Christy, K., & Weaver, J., 2015, The Health Belief Model as an Explanatory Framework in Communication Research: Exploring Parallel, *Serial, and Moderated Mediation.* https://pmc.ncbi.nlm.nih.gov/articles/PMC4530978/

[12]. Kadoma City Health GIS unit, 2024. *Kadoma City Map ward boundaries*

[13]. Keck, F., & Macia, E., 2023, The government of masks in sentinel territories against Covid-19: *Dakar and Seine- Saint-Denis.* https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15968-2

[14]. Mboowa, G., Musoke, D., Bulafu, D., & Aruhomukama, D., 2020, Face-Masking, an Acceptable Protective Measure against COVID-19 in Ugandan High-Risk Groups. https://www.ajtmh.org/view/journals/tpmd/104/2/article-p502.xml. Accessed March 2021

[15]. Midzi, N., Mutsaka-Makuvaza, M. J., Charimari, L. S., Mangwiro, P., Manengureni, T., & Mugadza, G., 2024, A qualitative study of knowledge, *beliefs and misinformation regarding COVID-19 in selected districts in Zimbabwe*. https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-024-20053-3

[16]. Murewanhema, G., & Murewanhema, F., 2021, Drivers of the third wave of COVID-19 in Zimbabwe and challenges for control: perspectives and recommendations. https://www.panafrican-med-journal.com/content/article/40/46/pdf/46.pdf

[17]. Mutsaka-Makuvaza, M. J., Midzi, N., Charimari, L. S., Mangwiro, P., Manengureni, T., & Mugadza, G., 2024, Use of face masks for COVID-19 prevention: *a qualitative study on barriers and motivators in Zimbabwe*. https://link.springer.com/article/10.1007/s44155-024-00083-3

[18]. Polit, D. F., & Beck, C. T., 2012, Nursing Research: Generating and Assessing Evidence for Nursing Practice. 10th Edition. *Lippincott Williams and Wilkins. New York*

[19]. Rosenstock, I. M., Victor, J. S., & Becker, M. H., 1988, Social Learning Theory and the Health Belief Model. https://typeset.io/pdf/social-learning-theory-and-the-health-belief-model-2mj57y2742.pdf

[20]. Taylor-Clark, K., Blendon, R. J., Zaslavsky, A., & Benson J., 2005, Confidence in crisis? Understanding trust in government and public attitudes toward mandatory state health powers. *Biosecurity Bioterrorism.* 2005;3(2):138–47. https://pubmed.ncbi.nlm.nih.gov/16000045/

[21]. WHO Scientific brief, 2020, Modes of transmission of virus causing COVID-19, implications for IPC precaution recommendations. https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations

[22]. WHO, 2020, Novel Coronavirus (2019-nCoV) *Situation Report* 1. https://apps.who.int/iris/handle/10665/330760.

[23]. WHO, 2020, WHO Coronavirus Disease (COVID-19) Dashboard', *Accessed 1 November.* https://covid19.who.int/.

[24]. WHO, 2020, Novel Coronavirus (2019-nCoV), *Situation Report*, 11.

https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200131-sitrep-11-ncov.pdf?sfvrsn=de7c0f7_4

[25]. WHO AFRO, 2023, Weekly epidemiological update on COVID-19 - 4 January 2023. https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---4-january-2023

[26]. WHO, 2020, Mask use in the context of COVID 19. https://iris.who.int/bitstream/handle/10665/337199/WHO-2019-nCov-IPC_Masks-2020.5-eng.pdf?sequence=1.

[27]. WHO, 2021, Coronavirus Disease. How is it transmitted? Question and Answer. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19-how-is-it-transmitted?gad_source=1&gclid=CjwKCAjw0t63BhAUEiwA5xP54drDnjzxmtOlXHWjmxh1O9lpZw0PCK_6phOpLK3Bozv_a_6zMJgTExoCazIQAvD_BwE

[28]. Zhong, B. L., Luo, W., Li, H. M., Zhang, Q. Q., Liu, X. G., Li, W. T., & Li, Y., 2020, Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7098034/