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Abstract

Purpose: The main objective of the study was to determine Health Seeking Behaviour during COVID-19 among slum dwellers in Railways informal settlement in Mombasa County.

Methodology: A descriptive cross-sectional study design was used to administer 133 structured questionnaires and 3 key informants' interviews, to participants who were selected using simple random and purposive sampling, respectively. Data was analyzed and results presented using tables, charts, graphs and thematic narration

Findings: The study found that the mean age was 37.5 years, 69.2% were married 46.6% had attained secondary level of education and 79.7% were Christians. Most slum dwellers are self-employed (51.9%) with an average monthly income of <Ksh 15,000. Housing included semi-permanent houses (56.4%) and most dwellers lived with their family members. Majority of slum dwellers preferred wearing face masks (93.2%), 59% of the respondents preferred seeking physician consultation, there was 76.7% COVID-19 testing rate and 76.7% COVID-19 vaccination rate. The study also found that divorced slum dwellers were three times more likely to seek physician's services than single slum dwellers (β=1.228, B/OR=3.415, p=0.447, 95%CI=0.144-80.177). Inadequate funds presented as the leading challenge in sustaining preventive and control measures of COVID-19.

Unique Contribution to Theory Policy and Practice: The study concludes that understanding slum dwellers health-seeking behaviors and their influencing factors during the pandemic informs on development of effective preventive strategies for future SARS illnesses and recommends need for mass education and awareness to promote attitude change, mass testing and vaccination and promotion of adherence to control and preventive measures of SARs illnesses.

Keywords: *Choices, COVID-19, Enabling Factors, Health, Need Factors*

Introduction

Background of the study

Corona Virus Disease 2019 (COVID-19) emerged in Wuhan, China in December 2019 (Nanshan et al, 2020). In early 2020, 80,955 confirmed COVID-19 cases in China mainland with approximated discharge rate more than 50% were declared by World Health Organization, (WHO, 2020). The index COVID-19 case in Kenya was reported on 12th march 2020, (MoH Kenya, 2020). COVID-19 is an infectious disease and therefore early diagnosis and management are necessary and important. In highly infectious diseases, the patient acts as a reservoir hence increasing source of disease spread and transmission from one individual to another, (Ehsanul et al, 2018).

Similar to other respiratory infectious diseases, COVID-19 spreads through droplets, direct contact or by human-to-human transmission (Lai et al, 2020). Currently, adoption of preventive measures is the main approach in preventing COVID-19 spread since there is no specific drugs or existing management guidelines on treatment regimen for COVID-19 (WHO, 2020). Additional important links to infection prevention and control includes health-seeking behavior of patients during early stage of COVID-19.

Despite of Ministry of Health (2020) reporting progress of the pandemic through various main stream media to raise citizens level of awareness on prevention and management, majority of people living in the slum areas managed COVID-19 using upper respiratory tract infection regimen upon experiencing flu-like symptoms i.e. fever and cough and they did not adhere to any preventive measures as reported by Star news (May 24, 2020) which contributed greatly to delay in diagnosing and treating. As a result, it affected the disease development and prolonged its treatment and management time.

As at December 2020, more than 200 publications and existing research about COVID 19 focused mainly on clinical presentation of patients and epidemiological characteristics of the disease (Long et al, 2020). This study therefore seeks to determine covid-19 health seeking behavior among slum dwellers of railways, Mombasa Kenya. These are people living in an area that is highly populated with poor infrastructure, insecure neighborhoods and poor hygiene practices and whose health seeking behaviors are likely to be highly compromised.

Problem statement

Although considerable number of researches on health seeking behaviors among slum dwellers exist in Kenya, more focus has been placed in the rural setting. Similar studies in urban areas are missing. It would be interesting to see how the poorest among urban dwellers, often the slum dwellers, fare.

In addition, existing research focused mainly on epidemiological findings and clinical manifestations of confirmed patients suffering from COVID-19 as evidenced by more than 200 publications on the subject matter since 2020. There are no adeqaute studies on health seeking

behaviours of urban slum dwellers towards COVID-19 hence increasing their vulnerability more than that of their rural counterparts (Agogo et al., 2024). Despite of Mombasa County including health sector as its priority area with the highest budget allocation of 4.8 billion in the fiscal year of 2021/22 it is not clearly stated how they will improve health care access among slum dwellers across the county in regards to COVID-19, (Mombasa County Program Based Budget, 2021). Carter et al (2025) reported that 84.2% of the Kibera informal settlement dwellers in Nairobi tested positve of COVID-19 during determination of seroprevalence tests during the COVID-19 pandemic. Railways slum is an informal settlement located along the railway line in Mombasa County and has been characerised by high population density and lack of adeqaute access to healthcare services. Solymari et al (2022) reported that the populations at higher risk of spreading and contacting COVID-19 includes slum dwellers as they have high limitation to health care interventions access since the population are poorly equipped to deal efficiently with COVID-19 pandemic challenges thus the study question on what is the COVID-19 health seeking behavior among slum dwellers of railways, Mombasa Kenya ensues.

Objectives of the Study

The main objective of the study was to determine Health Seeking Behaviour during COVID-19 among slum dwellers in Railways informal settlement in Mombasa County.

The specific objectives of the study were:

1. To identify various COVID-19 HSB among slum dwellers of Railways, Mombasa County, Kenya
2. To determine factors influencing the COVID-19 HSB choices of slum dwellers of Railways, Mombasa County, Kenya
3. To identify preventive strategies for future SARS illnesses among slum dwellers of Railways, Mombasa County.

Literature Review

Empirical Literature

The empirical literature on COVID-19 highlights its emergence, global impact, and disproportionate effects on vulnerable populations, particularly in urban slums of low- and middle-income countries like those in Sub-Saharan Africa.

SARS-CoV-2, identified in Wuhan, China, in late 2019, caused pneumonia-like symptoms and was declared a global pandemic by the WHO on March 11, 2020 (WHO, 2021). By October 2022, over 620 million cases and 6.5 million deaths were recorded worldwide (WHO, 2022). In 2025, SARS-CoV-2 activity increased globally, with test positivity rising to 11% in May 2025 from 2% in February (WHO, 2025). Infections remain milder among vaccinated individuals, emphasizing early testing, vaccination, and isolation (WHO, 2025; CDC, 2025).

Aligned with SDG 3 (good health and well-being) and universal health coverage targets (UN, 2023; The Global Goals, 2023), unprepared health systems in Africa exacerbated the pandemic's consequences due to fragile surveillance, limited infrastructure, and challenges in case notification and mortality tracking (Makoni, 2020; Yusuff et al., 2021). Urban slums, home to about 1 billion people globally, face heightened risks from overcrowding, poor water/sanitation access, informal livelihoods, and multi-generational households, hindering hygiene and distancing (UN-Habitat, 2016; Dahab et al., 2020).

Health-seeking behavior, influenced by perceptions, societal norms, and provider factors, remains poor in Sub-Saharan Africa, contributing to worse outcomes (Latunji & Akinyemi, 2018; Olenja, 2003; Akinyemi et al., 2019). Preventive measures included masks, distancing, handwashing, lockdowns, school closures, travel bans, isolation, and quarantine (WHO, 2020; Qian et al., 2020). Vaccination emerged as key, reducing deaths by up to 94% and offering high protection against severe outcomes (WHO, 2022; Miller & Burger, 2020; Tenforde et al., 2022).

Slums accelerate transmission, as seen in prior outbreaks (e.g., Ebola, Zika) and modeled higher infection rates despite interventions (Synder et al., 2017; Adiga et al., 2018). Studies show adaptive responses: WASH adoption in Bangkok slums (Nguyen & Pattanarasi, 2022), community health education in Mumbai (Corburn et al., 2020), solidarity aid in Dhaka (Hossain et al., 2023), digital health in South Africa (Mwitari et al., 2021), and makeshift handwashing in Nairobi slums (Muchangi et al., 2024). Compliance with measures like masks and hygiene was higher in some slum communities than estates, linked to knowledge and perception (Kawuki et al., 2023; Hasan et al., 2022).

Socioeconomic factors, poverty, informal employment, and comorbidities increase vulnerability (Mukeku, 2018; Zulu et al., 2011; Hasan et al., 2024). Disruptions strained health systems in resource-limited settings, with inadequate critical care and infrastructure (WHO, 2021; Jensen & Molina, 2020). In Kenya, responses included task forces, restrictions, and education (MoH Kenya, 2020; Kabale, 2020).

Gaps persist in data on slums, misinformation, and health-seeking among positive cases (Austrian et al., 2020; Awel et al., 2022). Multidisciplinary interventions—education, WASH improvements, subsidies, and community engagement—are recommended (Mehrolhassani et al., 2022; Corburn et al., 2020). This study examines factors influencing COVID-19 health-seeking in Railways slums, Mombasa, to inform targeted strategies for infectious disease management in Kenyan urban slums.

Theoretical framework

Andersen's Healthcare Utilization Model

The study adopted Andersen's Healthcare Utilization Model (HUM) founded in 1968 (Anderson & Newman, 1973). The utilization model assumes that individual's consumption of health care choices or personal health practices are contributed by three major elements: predisposing,

enabling and need for care factors consisting of contextual and individual level predictors (Anderson, 1995; Anderson, 2008).
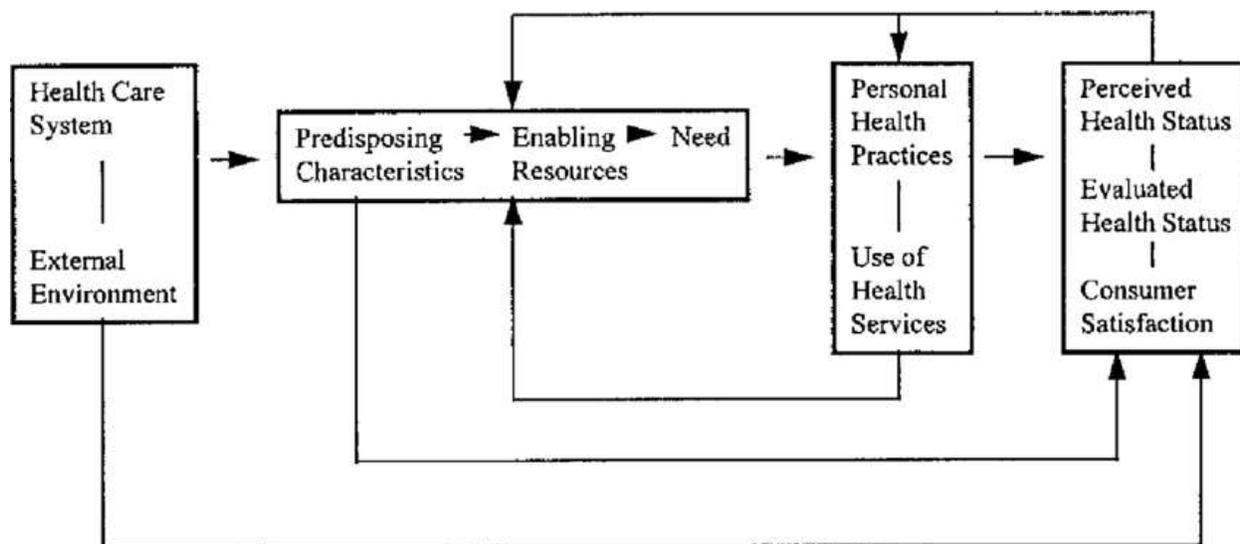

Figure 1: Theoretical framework of Andersen's Model of Healthcare Utilization (Andersen, 2008)

The HUM theory has three major elements, which include predisposing, enabling, and need factors (Fig 1) together explaining how they influence COVID-19 HSB in an individual or a community. In this regard, predisposing factors is described as individual related factors such as socio demographic characteristics like gender, age, perception/attitude, level of education, race/ethnicity, belief/religion and sex (Anderson, 1995, Kadushin, 2004, Anderson, 2008) while contextual factors are considered a composition of social-demographic characteristics of communities such as politics, community values, organizational and cultural norms. In addition level of health knowledge is also considered a contextual factor as it contributes greatly to healthcare behaviors shaping person's attitude, perception, beliefs and general understanding about implications of a specific health behavior.

Enabling factors are community or individual factors that influence the degree of initiating and continuing a certain health choice. It contains resources, incomes and financial sources considered to promote or deny access to healthcare and subsequent use of health service (Kadushin, 2004, Jahangir al, 2012). In this study, enabling factors explored on individual level factors such as wealth, income, medical insurance and even existence of family support at the household level. Other factors explored included availability of income to meet the expense of adopting a healthy lifestyle e.g. consistent physical exercise, balance diet and good nutrition, face masking and good hand and personal hygiene (Anderson, 2008). Travel time and transportation means to health facility and waiting time for healthcare are considered enabling factors (Jahangir et al, 2012). Health education, health policies and community health outreach programs and promotive initiatives are relevant in influencing individual health behavior during a pandemic such as

COVID-19 and afterwards their attitude towards positive health healthcare seeking behaviors (Kadushin, 2004).

Need factors in this study represented potential needs of health care service use such as pre-existing illness, obesity, contextual and individual level of perception on severity of disease (Anderson & Davidson, 2014). At the individual level, the study compared the contrast between how people viewed and practiced health (Self-rating/ self-diagnosis based on symptoms) and the actual evaluated needs which are based on objective findings from a qualified health care professional after thorough examination and assessment analysis (Kadushin, 2004). Epidemiological factors of COVID-19: morbidity and mortality also influence the health care need factors for individuals i.e. COVID-19 prevalence, overall national and local incidence, infections and death rates (Jahangir et al, 2012).

Andersen Healthcare Utilization Model has been criticized for minimally being attentive to contribution of culture and social factors to the predisposing factors while over stamping need factors with little consideration for beliefs and social constructs of the community (Babitsch et al 2012). It is agreeable that predisposing factors and enabling resources are necessary as they play great role expounding the perceived and evaluated need (Andersen & Newman, 1973). Anderson healthcare utilization model itself considers perceived needs to be majorly influenced by social factors including beliefs and cultural patterns. The study thus adopted this model as it is in tangent with the study objectives and had alignment to determining how various factors influence healthcare seeking behavior. It therefore intertwined with the study's objective of determining COVID-19 health seeking behavior among slum dwellers of Railways, Mombasa, Kenya.

Conceptual framework

Through the Andersen Model, the study established the relationship between predisposing factors (Religion, social relation, education, attitude, ethnicity, health belief, level of health knowledge), enabling factors (financial power, access to health care/information, perceived health efficacy) and need for care factors (pre-existing illness, perceived risk, condition severity) contributed in influencing healthcare seeking behavior of individual during the COVID 19 pandemic. The individual health choices were mirrored on nutrition, physical exercise, adherence to COVID-19 protocol and medical check-up.
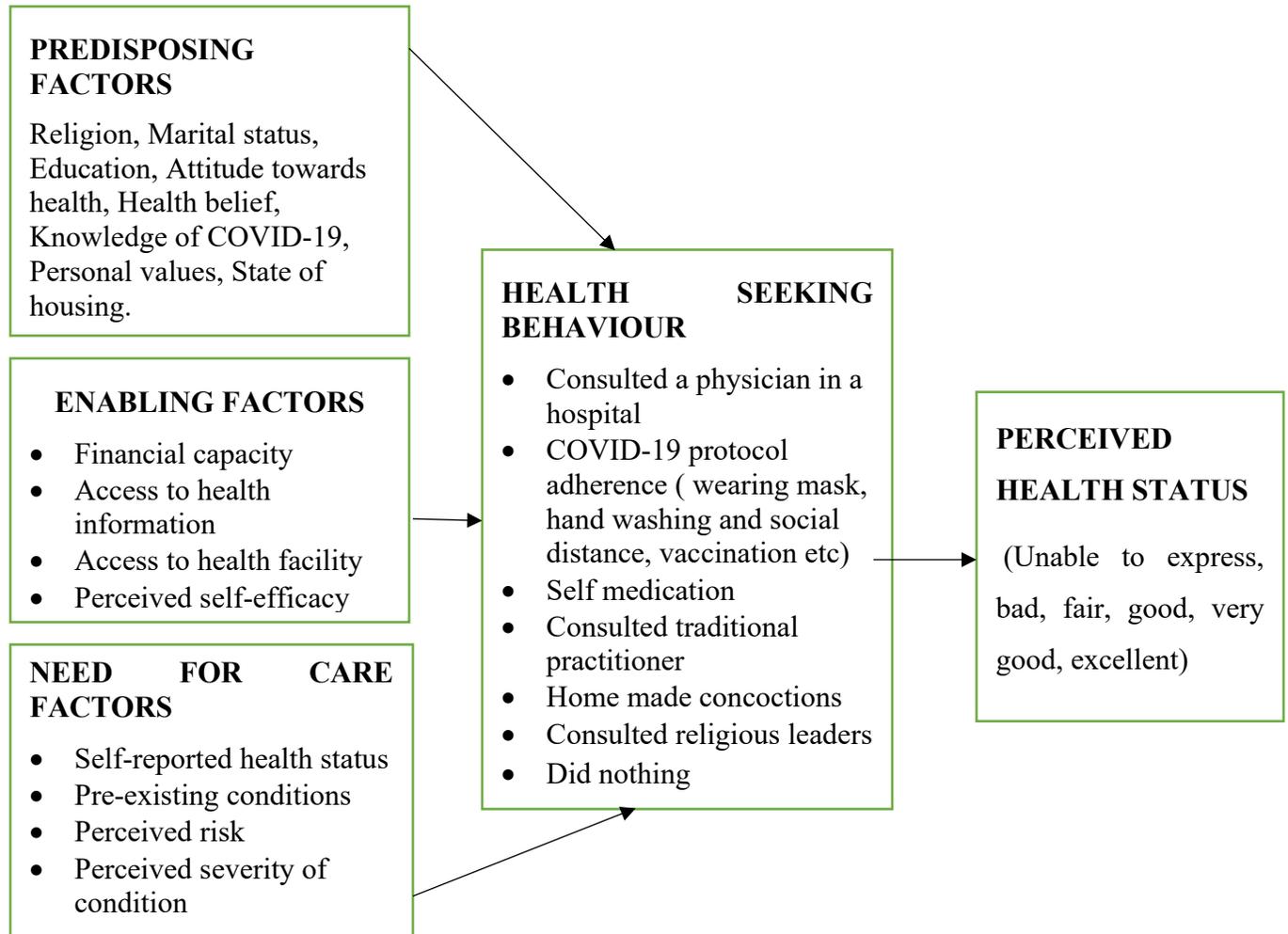
PREDISPOSING FACTORS

Religion, Marital status, Education, Attitude towards health, Health belief, Knowledge of COVID-19, Personal values, State of housing.

ENABLING FACTORS

- Financial capacity
- Access to health information
- Access to health facility
- Perceived self-efficacy

NEED FOR CARE FACTORS

- Self-reported health status
- Pre-existing conditions
- Perceived risk
- Perceived severity of condition

HEALTH SEEKING BEHAVIOUR

- Consulted a physician in a hospital
- COVID-19 protocol adherence (wearing mask, hand washing and social distance, vaccination etc)
- Self medication
- Consulted traditional practitioner
- Home made concoctions
- Consulted religious leaders
- Did nothing

PERCEIVED HEALTH STATUS

(Unable to express, bad, fair, good, very good, excellent)

Figure 2: Conceptual Application of Andersen Health Care Utilization model

Research Methodology

The study used cross sectional study design to determine COVID 19 HSB among slum dwellers of Railways in Mombasa County, Kenya. The study was conducted in Railway slum which is found in Changamwe Sub County of Mombasa County. Changamwe has a population of 131,882 (KDHS, 2019) distributed across Changamwe, Kipevu, PortReiz, Mikindani and Miritini constituencies. Changamwe constituency has 46,614 households with an average household size of 2.8. The population density of changamwe is 7,457 people per square kilometer. Railway slum covers an area size of 1.8km² consisting of population estimate of 13,422 with 203 households. The study target population were residents of railways slums, Mombasa County. It included both men and women in the area who were over 18 years old. Simple random technique was applied to pick the study participants. The sample population was determined under Cochran formula. The

household population under study was low (203) so the size was modified using this equation where n was the new adjusted sample size and N represented target population.

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

n = 378/(1+ (377/203))= 132.3

n = 133 Households

Data collection tools included structured questionnaires and key informant interview guide. Data was collected from 133 households of the Railways slums through guidance of *mama wa mtaa* as the community entry and focal person. Validity and reliability of data collection tools was established through pre-test that was conducted in Moroto slum which is located adjacent to Railways slums. The responses were coded, cleaned and analyzed using SPSS version 26.0 and thematic narration.

Research Findings and Discussions

Overview of Socioeconomic Characteristics and Health-Seeking Behavior

The modal age of slum dwellers was 35 years, married (69.2%), attained a secondary level of education (46.6%) which is low, and are Christians (79.7%). Additionally, the study revealed that most slum dwellers are self-employed (51.9%) operating a small business while the unemployed group were mainly women with an average monthly income of <ksh 15,000. Housing included semi-permanent houses (56.4%) and most dwellers lived with their family members as opposed to non-members or alone. The majority of the slum dwellers were aware of the COVID-19 control measures and the majority preferred wearing masks (93.2%) complimented by hand washing (70.7%) and social distancing (54.1%). 59% of the respondents preferred seeking physician consultation in the event of COVID-19 symptoms due to fear and anxiety and the health outcome was good. There was 76.7% COVID-19 testing rate and 76.7% COVID-19 vaccination rate. Those who neither tested nor vaccinated reported lack of perceived need and that COVID-19 was not real. Lack of funds was the leading challenges in sustaining the preventive and control measures of COVID-19. Negative attitude towards COVID-19 was the leading predisposing factor that influences HSB choices. The enabling factors of access to health facility and self-efficacy had extreme influence on HSB choices. 63.2% of the sample were healthy with no pre-existing conditions, while among those with positive history of illnesses, hypertension was the leading condition (33.3%). All the enabling factors had moderate influence on the choices of HSB. The study established single and divorced marital status, state of the house, pre-existing conditions, access to insurance, access to health facility, self-efficacy, self- reported health status, and increasing severity COVID-19 were major factors that influenced COVID-19 health seeking behaviors among slum dwellers of Railways in Mombasa County. There is need for mass education for attitude change, mass testing and vaccination against COVID-19 and future SARS illness with constant adherence to control and preventive measures.

Bivariate Analysis of Socio-Economic Characteristics, Predisposing, Enabling and Need Factors

Chi-square test was used to test the association between social-economic characteristics, predisposing, enabling and need factors and COVID-19 HSB among slum dwellers of Railways slums, Mombasa.

Bivariate Analysis for Health Seeking Behavior and Predisposing Factors

The bivariate analysis examined predisposing factors influencing health-seeking behavior (HSB) for formal treatment of COVID-19 among slum dwellers in Mombasa County. More women (63.8%) than men (36.2%) sought formal COVID-19 care, though the difference was not statistically significant. Age, religion, education level, and occupation were not significant factors in formal care-seeking behavior. However, marital status showed a statistically significant difference, with married respondents (79.1%) more likely to seek formal treatment than divorced individuals (1.1%). The state of housing was also significant, with those in clean permanent houses (44.4%) more likely to seek formal care than those in unhygienic semi-permanent houses.

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Table 1: Bivariate Analysis of Health Seeking Behavior and Predisposing Factors

Predisposing Factors		Health Seeking Behavior				N	p≤ 0.05
		Yes		No			
		n	%	N	%		
Sex	Male	33	36.2	20	47.6	53	χ^2=1.546,
	Female	58	63.8	22	52.4	80	df=1
	N	**91**	**100**	**42**	**100**	**133**	p=0.214
Age	18-24 years	9	9.9	10	23.8	19	χ^2=6.176,
	25-30 Years	16	17.5	6	14.2	22	df=5
	31-40 years	30	32.9	13	30.9	43	p=0.289
	41-50 years	22	24.2	10	23.8	32	
	51-60 years	11	12.1	3	7.1	14	
	>60 years	3	3.3	0	0	3	
	N	**91**	**100**	**42**	**100**	**133**	
Marital Status	Married	72	79.1	20	47.6	92	χ^2=15.471
	Single	15	16.5	16	38.1	31	df=3
	Divorced	1	1.1	4	9.5	5	p=0.001
	Separated	3	3.2	2	4.8	5	
	N	**91**	**100**	**42**	**100**	**133**	
Religion	Christian	72	79.1	34	81.0	106	χ^2=2.440
	Muslim	19	20.9	7	16.7	26	df=2
	Others	0	0	1	2.3	1	p=0.295
	N	**91**	**100**	**42**	**100**	**133**	
Education Level	Informal	5	5.5	5	11.9	10	χ^2=4.012
	Primary	31	34.1	10	23.8	41	df=4
	Secondary	43	47.3	19	45.2	62	p=0.404
	College	11	12.0	8	19.1	19	
	University	1	1.1	0	0	1	
	N	**91**	**100**	**42**	**100**	**133**	
Occupation	Unemployed	29	31.9	11	26.2	40	χ^2=0.858
	Informal employed	1	1.1	1	2.4	2	df=3
	Self Employed	47	51.6	22	52.4	69	p=0.836
	Formal Employed	14	15.4	8	19.0	22	
	N	**91**	**100**	**42**	**100**	**133**	
State of the House	Semi-permanent, clean	23	25.3	16	38.1	39	χ^2=12.235
	Semi-permanent, congested	16	17.6	14	33.3	30	df=5
	Semi-permanent, slightly clean	5	5.5	1	2.4	6	p=0.032
	Permanent, clean	40	44.0	7	16.7	47	
	Permanent, congested	6	4.4	4	9.5	10	
	Permanent, slightly clean	1	1.1	0	0	1	
	N	**91**	**100**	**42**	**100**	**133**	
Living status	Alone	17	18.7	12	28.6	29	χ^2=0.199,
	With Family	74	81.3	30	71.4	104	df=1
	N	**91**	**100**	**42**	**100**	**133**	p=0.290

Bivariate Analysis of Health Seeking Behavior and Enabling Factors

The bivariate analysis revealed that slum dwellers with lower incomes (below Ksh. 15,000) sought formal COVID-19 care more frequently than those with higher incomes, though this difference was not statistically significant. Perceived health status and accessibility to health facilities significantly influenced health-seeking behavior, with respondents who perceived their health as very good and those with better access to health facilities being more likely to seek formal treatment. Financial capacity and access to insurance showed mixed results, with access to insurance having a significant impact, while financial capacity did not. Self-efficacy also significantly influenced formal care-seeking behavior, with those experiencing extreme influence more likely to utilize formal services.

Table 2: Bivariate Analysis of Health Seeking Behavior and Enabling Factor

Enabling Factors		Health Seeking Behavior					
		Yes		No		N	p≤ 0.05
		n	%	N	%		
Monthly income	<ksh 15,000	70	76.9	32	76.2	102	χ^2=0.121
	Ksh 15,001- 30,000	18	19.8	9	21.4	27	df=2
	Ksh 30,001- 45,000	3	3.3	1	2.4	4	p=0.941
	>ksh 45,000	0	0	0	0	0	
	N	91	100	42	100	133	
Perceived Health status	Unable to express	0	0	12	28.6	12	χ^2=32.105
	Fair	2	2.1	1	2.4	3	df=4
	Good	19	20.9	11	26.2	30	p<0.001
	Very Good	40	44.0	8	19.1	48	
	Excellent	30	33.0	10	23.8	40	
	N	91	100	42	100	133	
Financial capacity	No Influence	7	76.9	6	14.2	13	χ^2=4.806
	Little Influence	11	12.1	9	21.4	20	df=4
	Moderate Influence	50	55.0	18	42.9	68	p=0.308
	Major Influence	11	12.1	6	14.2	17	
	Extreme Influence	12	12.2	3	7.1	15	
	N	91	100	42	100	133	
Access to Insurance	No Influence	43	47.2	31	73.8	74	χ^2=12.791
	Little Influence	12	13.2	6	14.2	18	df=4
	Moderate Influence	12	13.2	0	0	12	p=0.012
	Major Influence	8	8.8	3	7.1	11	
	Extreme Influence	16	17.6	2	4.7	18	
	N	91	100	42	100	133	
Access to health facility	No Influence	11	12.1	10	23.8	21	χ^2=25.666
	Little Influence	2	2.2	6	14.3	8	df=4
	Moderate Influence	18	19.8	17	40.5	35	p=0.000
	Major Influence	16	17.6	1	2.4	17	
	Extreme Influence	44	48.4	8	19.0	52	
	N	91	100	42	100	133	
Self-Efficacy	No Influence	5	5.5	4	9.5	9	χ^2=11.252
	Little Influence	11	12.1	6	14.3	17	df=4
	Moderate Influence	20	22.0	18	42.9	38	p=0.024
	Major Influence	25	27.5	3	7.1	28	
	Extreme Influence	30	33.0	11	26.2	41	
	N	91		42	100	133	

Bivariate Analysis of Health Seeking Behavior and Need Factors

Bivariate analysis of the variation in health seeking behavior by need for care factors is presented in table 3. The study established that 53.8% of the respondents who reported no pre-existing conditions reported utilization of formal check-up as opposed to 25.3% who reported positive pre-existing conditions. The difference was significant at ($\chi2=11.559$, df=3, p=0.009). Moreover, 27.5% of slum dwellers who were majorly influenced by self-reported health status sought formal medical check-up as opposed to 8.8% who had little influence from self-reported health status. The difference was statistically significant at ($\chi2=13.105$, df=4, p=0.011). 45.1% of respondents who reported extreme influence by COVID-19 severity utilized formal care services as opposed to 8.8% of respondents who reported no influence from COVID-19 severity. The difference was not statistically significant at ($\chi2=7.851$, df=4, p=0.097).

Table 3: Bivariate Analysis of Health Seeking Behavior and Need Factors

Need Factors		Health Seeking Behavior					
		Yes		No		N	p≤ 0.05
		n	%	N	%		
Pre-existing conditions	No	49	53.8	35	83.3	84	χ^2=11.559
	Not aware	19	20.9	3	7.1	22	df=3
	Yes	23	25.3	4	9.5	27	p=0.009
	N	**91**	**100**	**42**	**100**	**133**	
Self-reported health status	No Influence	14	15.4	14	33.3	28	χ^2=13.105
	Little Influence	8	8.8	7	16.7	15	df=4
	Moderate Influence	29	31.9	9	21.4	38	p=0.011
	Major Influence	25	27.5	3	7.1	28	
	Extreme Influence	15	16.5	9	21.4	24	
	N	**91**	**100**	**42**	**100**	**133**	
COVID-19 severity	No Influence	8	8.8	5	11.9	13	χ^2=7.851
	Little Influence	0	0	2	4.8	2	df=4
	Moderate Influence	35	38.5	21	50.9	56	p=0.097
	Major Influence	7	7.7	2	4.8	9	
	Extreme Influence	41	45.1	12	28.6	53	
	N	**91**	**100**	**42**	**100**	**133**	

Binary Logistic Regression Analysis

A binary logistic regression model was constructed to investigate the influence of predisposing, enabling, and need factors on health-seeking behavior among slum dwellers in Railways slums, using "consulting a physician" as the dependent variable. Statistically significant independent variables (p≤0.05) were included in the model, and the "enter" method was used to find the best fit. The model fit was confirmed through omnibus tests, with -2Log Likelihood at 119.619,

Nagelkerke R square at 0.412, and the Hosmer-Lemeshow test showing a good fit (p=0.605). The model demonstrated 89.0% sensitivity, 59.5% specificity, and 79.7% overall accuracy, although sensitivity was lower than the ideal.

Table 4: Binary Regression Model

Omnibus Tests of Model Fit				
	Intercept	**Model**	**df**	**Sig.**
-2 log likelihood		119.619		
Model Chi-square test		46.272	17	0.00
Cox and Snell		0.294		
Nagelkerke R square		0.412		
Hosmer Lemeshow Chi-square test.		6.376	8	0.605

Discussion of Findings

The study on COVID-19 health-seeking behavior (HSB) among slum dwellers in Railways informal settlement revealed key socioeconomic characteristics and behavioral patterns.

Socioeconomic status showed a majority female population (60.2%), modal age 31–40 years (average 35), with few elderly (>60 years), aligning with patterns in Kenyan slums like Korogocho (Samira et al., 2023). Most were married (69.2%), living with family (78.2%), and attained secondary education, consistent with limited tertiary access due to costs (Ngware, 2018). Self-employment dominated informal sector jobs, with low monthly income (<KSh 15,000 or ~$100), mirroring pandemic impacts on livelihoods (Solymari et al., 2022). Housing was mostly semi-permanent, often congested and unclean, exacerbating disease risks (UN-Habitat, 2018; Bhalla, 2023).

COVID-19 HSB indicated high awareness of preventive measures, with mask-wearing (93.2%), handwashing (70.7%), and social distancing (54.1%) prominent, though congestion hindered distancing (Hasan et al., 2022; Islam & Kibria, 2020). Some used religious practices, home remedies, or nothing due to denial. For symptoms, 59% consulted physicians (public/private), while others self-medicated, used concoctions, quarantined minimally, or self-resolved, influenced by curfews and misinformation (Bader et al., 2022; Khan et al., 2024). Screening/vaccination reached 76.7%, with hesitancy from stigma and misconceptions, improving via awareness (Sharmin et al., 2021). Challenges included funds shortages, water inadequacy, stigma, and police brutality (Dubey et al., 2022).

Andersen's model factors showed predisposing elements (e.g., attitudes, knowledge) influential but non-significant bivariately; enabling factors (income, facility access, self-efficacy) mostly significant except insurance; need factors (pre-existing conditions, perceived health, symptom severity) strongly drove formal care use (Abuduxike et al., 2019; Latunji & Akinyemi, 2018).

Preventive strategies for future SARS illnesses emphasize mass education, vaccination, slum upgrading, economic support, WASH improvements, community engagement, and policy changes for equity and resilience (WHO, 2023; Corburn et al., 2020).

Summary, Conclusions and Recommendations

Summary of the Findings

Based on the obtained data from the respondents and its interpretation, the study addressed three specific objectives i.e. identify various COVID-19 health-seeking behaviours among slum dwellers, determine factors influencing the COVID-19 HSB choices and identify preventive strategies for future SARS illness among slum dwellers of Railways in Mombasa County. The study acquired the following results.

What are the various COVID-19 health-seeking behaviours among slum dwellers of Railways, Mombasa County?

The respondents reported adhering to wearing of mask (93%), social distancing, hand washing, sanitizing, isolation, quarantine and vaccination as key steps to prevent and keep safe during the COVID-19. Other respondents stated use of home remedies, concoctions and traditional medicine as treatments of symptoms, some resorted to prayers and religious practices. They viewed these measures as positive approaches to maintained healthy outcomes. Though vaccination hesitancy was displayed leading to low COVID-19 testing and vaccination, behavior change was restored through community engagement and mass education/ awareness to increase uptake. In the cases of symptomatic management, slum dwellers resorted to seeking consultation from physicians from both public and private health facilities, quarantine and self-isolated, while few opted to allow the symptoms to resolve on its own. Interestingly, majority of slum dwellers reported very good health status after the various HSB choices.

What are the factors influencing the COVID-19 HSB choices among slum dwellers of Railways, Mombasa County, Kenya?

The study established that level of awareness on COVID-19 preventive measures was good and these guided their initial HSB choices. Predisposing factors such as marital status, age, level of education, religion, poor housing and family status had influence on the HSB choices selected by the slum dwellers. For instance, divorced dwellers were three times likely to seek physician services than single slum dwellers. Negative attitude towards COVID-19 was the leading predisposing factor that influenced HSB choices. Enabling factors of level of income, access to insurance, pre-existing conditions and access to health facility influenced the odds of seeking cares from formal care. The enabling factors of access to health facility and self-efficacy had extreme influence on HSB choices. Need for care factors included pre-existing conditions, self- reported health status and COVID-19 severity had moderate influence on the health-seeking behavior of the slum dwellers. 63.2% of the sample were healthy with no pre-existing conditions, while among those with a positive history of illnesses, hypertension was the leading condition (33.3%).

What are the preventive strategies for future SARS illnesses among slum dwellers of Railways, Mombasa County?

The respondents stated that the MoH should conduct mass health education and awareness among the slum dwellers on the cause and management of SARS illness. They stated that this approach would lead to more informed understanding and approaches to the dwellers helping reduce stigma and discrimination of positive cases. Increased access to clear information would also increase tests and vaccine uptake leading to herd immunity and prevention of spread of SARs cases. Media materials emphasizing social distancing, hand washing techniques, coughing and sneezing hygiene should be distributed.

Conclusion

Regarding COVID-19, Railways slum dwellers preferred wearing facemasks to other control and preventive measures. Community engagement and health education was viewed as key to increasing awareness and adherence to the control and preventive measures. Single and divorced participants, state of the house, pre-existing conditions, access to insurance, and access to health facility, self-efficacy, and self- reported health status, and increasing severity COVID-19 were major factors that influenced HSB. Regarding preventive strategies for future SARS illnesses, there is need for mass education and awareness to promote attitude change, mass testing and vaccination and promotion of adherence to control and preventive measures. Thus, understanding slum dwellers health-seeking behaviours and the influencing factors towards COVID-19 HSBs choices during the pandemic informs on development of effective preventive strategies for future SARS illnesses.

Recommendations

The study recommends improving housing and sanitation in slums through the Ministry of Housing and County Government of Mombasa to reduce congestion and enhance health outcomes. The Ministry of Health should prioritize mass education on preventive measures to address stigma and misinformation. Slum dwellers are encouraged to pursue higher education to improve employment opportunities and embrace remote working during pandemics. Additionally, building trust in formal healthcare systems and promoting adherence to COVID-19 control measures, including testing and vaccination, are crucial for better health outcomes in future pandemics.

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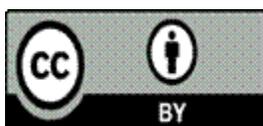
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