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RESEARCH ARTICLE

Factors Influenced of Health Status of Under Five Children in Wadajir District, Mogadishu-Somalia

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Abstract:

***Background*:** Somalia is committed achieving both Millennium development goal 4 and 5 MDG and Sustainable development goal 3 SDG. However, Somalia owing to the country's political instability, security challenges, and inadequate financial support to the health system, Somalia did not achieve any of the MDG goals, and progresses on the SDGs will be a big challenge.

The objective of the study was to determine the prevalence of certain diseases in under five children with health conditions that are common during childhood in Wadajir district Mogadishu-Somalia (Underweight, Diarrhea and Malaria), and this Study was conducted between January, and April 2021.

***Methods*:** The research design was a cross-sectional study, characterized by a one-time assessment using a non-random, convenience sampling method. In addition, the study was using the primary data as to ensure the validity and reliability. As well as the sample size calculation was using a single proportion population formula. followed by structured questionnaire and SPSS 19 version, observed the data on descriptive and inferential statistic upon data modules to determine in adjusted the objectives.

***Results*:** the total of 378 under five children was recruited to conduct the study at Wadajir health facility in Wadajir district, Mogadishu, Somalia. This Study reported the underweight malnourished children (12.7%) measured anthropometric measurement refers (<-2 SD weight for age and below 5th BMI), while children with malaria referred in past 24 hours' fever and chills with blood test used by RDTs (34.1%), and last children with diarrhea disease was determined by clinical features based on last three days of present diarrhea (45%).

***Conclusion*:** The study was concluded low income status was the major factor associated with health status of under-five children addressing many health conditions that related with different aspects related on poverty that reflects with impact, and experienced with certain conditions, due to high unemployment, food insecurity, poor water quality, improper hygiene practices and loss of sanitation system management and others circumstances that marginalize the child's health and growth, overall meaning low healthcare accessibility, poor water quality, early marriage, home birthing and bottle feeding was attributed the diseases.

Keywords: Health status, SDG, Good health well-being, BMI, MUAC.

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1. INTRODUCTION

Children are the future of a country and precious resources of sustainable development of the human society. Improving the nutrition and health status of under-five children was based on the realization of the comprehensive intervention needed as to achieve goal 4 SDG and integrate the transformation of any country. Developing during early childhood, especially from fetus to two- year-old (the first 1,000 days since life starts), is essential to determine the nutrients and health status in the whole life course.

Protecting and improving the health statuses of under-five children are important values issues and promote the child's health which is extensively a fundamental combined with socially and economics that optimal basic to the family inclusive the children because the child is one of the most important things a society can do to build a better future.

This study revealed a deficiency of empirical data concerning the long-term health issues of children under five, compounded by a local inadequacy in theoretical comprehension. And the study specifically aimed to analyses the socio-demographic status, socio-economic aspects, vaccination status, and maternity care in Wadajir, Mogadishu, Somalia.

The findings of this study will also be crucial to the County government structure since it will provide the information needed when structuring and restructuring health-related interventions at the County level. Furthermore, the information from this study will shape the realization of the Somalia long term development blueprint, a more social pillar whose main objective is investing in the people of Somalia to improve the quality of life for all.

Over the past decade have been improving the reduction of mortality rates among under-five children and other encouraging achievement progress. The number of the children who die before the age of 5 shall be halved from 2000 to 2016 according to WHO and more mothers and children are surviving today than ever before (World Health Organization, 2016).

In a social context endorsing both the MDGs and SDGs, Somalia is committed achieving both MDG and SDG sets of goals. However, Somalia upon to the country's political instability, security challenges, and inadequate financial concern and less human capital, another point is that Somalia did not achieve any of the MDG goals, and progress on the SDGs will be a big challenge. Child health is a concern at the international and national levels which requires appropriate interventions towards good health and well-being for all regarding the SDG and introduces factors associated with health conditions such as accessibility of health services, food insecurity, water and sanitation, immunization, and breastfeeding (Africa, 2020).

From 2016 Sustainable Development Goal (SDG) is beginning to introduce reinforcement of the fighting against statues of under-five mortality and the SDGs has realized the prediction of an under-five death rate will be 25 per 1000 live births in all countries by 2030 (Id *et al.*, 2018).

However, in Somalia health system has recently not has the capacity to respond to health needs and getting less assistance from the government is very low in terms of health expenditures and currently available health services depend on out of pocket.

2. MATERIAL AND METHODS

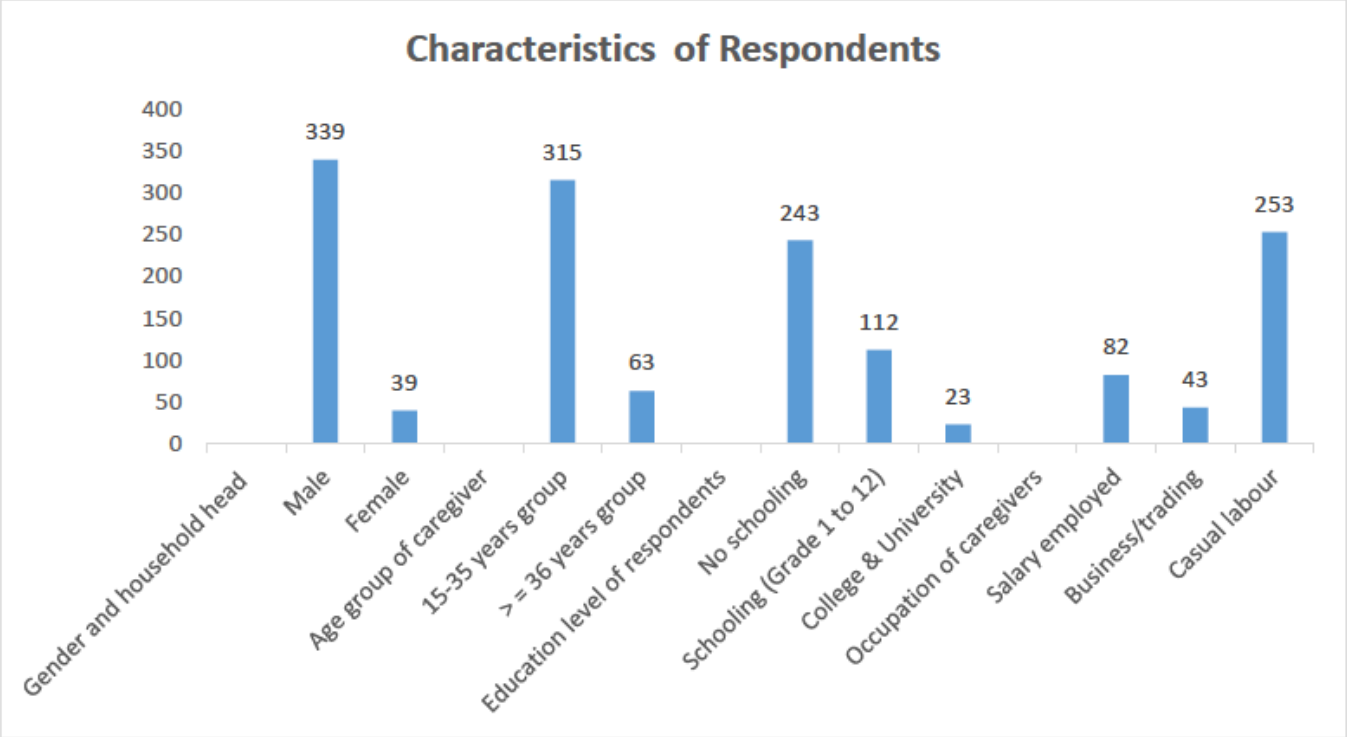
The research design was a cross-sectional study, characterized by a one-time assessment using a non-random, convenience sampling method. In addition, the study was using the primary data as to ensure the validity and reliability. As well as the sample size calculation was using a single proportion population formula. Formula with 95% confidence intervals and a marginal error of 5%. The proportion was p (60%) prevalence of factors impacted by health status. q (40%) having health status of under-five-year-old children with (Z a = 1.96, d = 0.5) (Seketi, S. *et al.*, 2014). Furthermore, this method used to collect the information from the target participants done by an interview questionnaire on mothers/ fathers or whoever responsible for under-five children who was arrived at the health facility. The research instrument has conducted the extent to which has measured been used the instruments applied and diagnosed refer to present or past history and clinical features for the diarrheal and malaria, thus underweight measurement refer weight for age, MUAC and z score -2.0 SD for mean and below 5th percentile.

To conduct the study, instruments for collecting observation data based on a structural questionnaire were devised. The study's inclusion criteria were mothers with under five children who lived in the scope area, and whoever was responsible for the child, either mother, father, grandmother/father, or house help, while the exclusion criteria were diseases outside the scope of the study, as well as chronic illness or severe condition, and mothers who did not have under five children once were restricted to duplicates and avoided for more than five years.

So far, Wadajir district has four existing health facilities, one of which is Wadajir health facility. Wadajir health facility is more popular than the other three, as most patients visit it, because it is located in an area with slum villages, which attracts more people, and it has been in operation for a long time. The researcher chose it based on the aforementioned factors.

The researcher analyzed the data using Statistical Package for Social Sciences (SPSS) version 19. Regarded Graphs and tables, chi-square test could be used the data as to determine the association factors and health status of under-five children. According to the statistical analysis, the data-driven observational study approach yielded attainable health outcomes and was better in line with the study's goals.

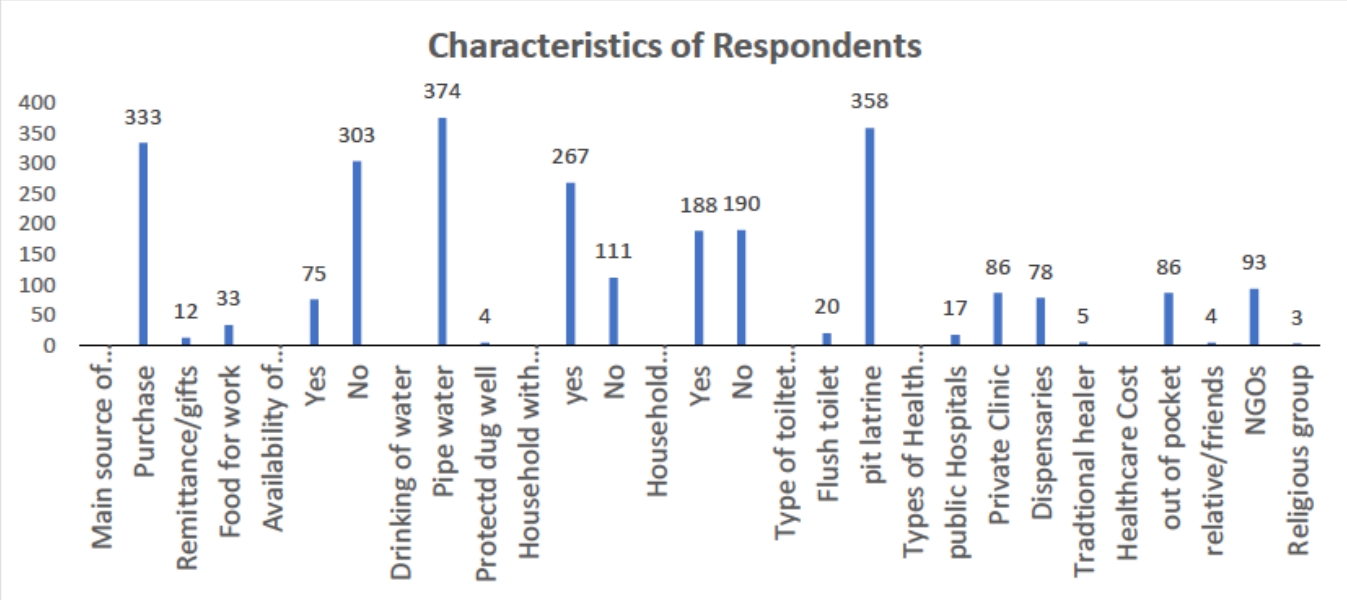
The data was shown on descriptive reports. The outcome of the study indicates the researcher to generate statistical findings that could generalize the results. The study was adhering the criteria and illegibility of the participants due to inclusion and exclusion criteria from the responses (100%) obtained from the participants. Valid questionnaires were administered team and have ensured to fill the response from participants.



Graph 1: The social demographic characteristics respondents were observed one by one regarded the frequency from variables across the gender of household head is more male 339 (89.7), age group of care-givers 315 (83.3) between 15-35 years, on top of that education level respondents was more non-schooling 243(64.3), another point is respondents of marriage was 338 (89.7), and moreover occupation status of casual labor was 253(67.2); these have potentially indicate the condition that children healthy could be quite minimal regarded the parents education and occupation status that expressed the impact of the health status and income level. In addition, the data was revealed that most parents/caregivers have low-employment status and low education that mostly circumstances lead the exposure of the diseases among under-five children.

3. RESULTS

The study aimed at observing the live experiences of under-five children who are most susceptible age groups for commonest diseases from different aspects, and once mostly vulnerable age suffers many conditions including the certain diseases that targeted the researcher. However, the date has expressed on the local context living of the children and as well as the circumstances of the parents forced them has been resilient any situations that related with their livelihood. Especially children who need huge well care and protection from any risks that attributed the experiences of diseases. Indeed, control and protection could be preferred the children at any age, but most who are aged below five years, thus the parents could have puts more efforts the livelihood and wellbeing of the children achieved the optimal health. In addition, the study was observed at a high frequency from all variables and aligned with fulfilling the inclusion and exclusion criteria from the responses (100%) obtained from the participants. Valid questionnaires were administered team and have ensured to fill the response from participants.



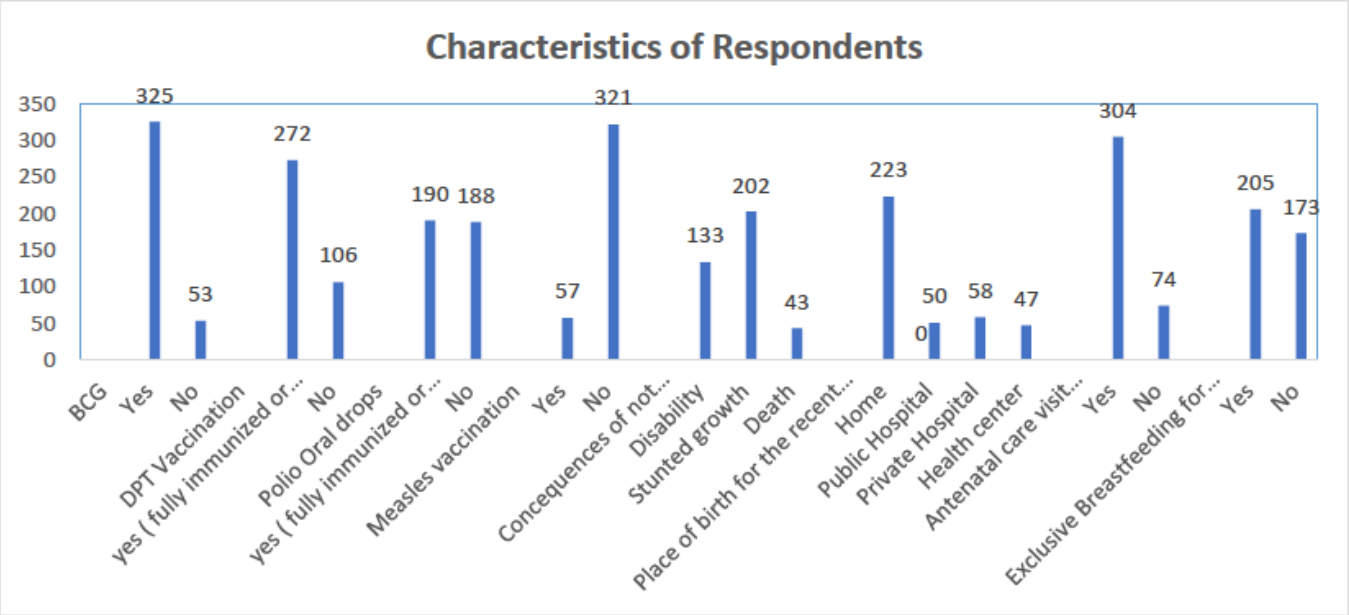
Graph 2: The social-economic status respondents were showed the observation of source of food on households was purchase from markets 333 (88.1), moreover didn't availability three time a meal per day 303 (80.2), on top of that water sources respondents have obtained from pipe water 374 (98.9), in addition households' member being sick with certain conditions refer the study was much experienced 267 (70.6), another point is respondents of households members being sought medical assistance didn't find 190 (50.3), furthermore the type of toilet facility for households being used pit latrine 358 (94.7), with despite of the type of health centres that participants attended at the of delivery was private clinics 86 **(** 22.8), and as well the participants NGOs 93 (24.6).

Table 1: Used the chi-square test to determine the outcome of the data that measured by anthropometric at weight for age, height, and MUAC, to ensure stage of malnutrition. With underweight children is more associated inadequate diets and poor feedings that resulted poor child growth according to the WHO recommends Health Statistics as a reference. The most common and universal approaches have been conducted for the measurement of body weight, height, and age allows calculation of Z-scores for weight for age and height-for-age and weight-for- height. The data has revealed certain factors related the exposure of underweight that could be more impact regarded the analyst, because underweight was the impact of poor feeding, birth underweight, experiencing poor infections control are all these are identified the health outcome. So this study was observing statistical p values <0.05.

Even though household's head determines and have a crucial impact on approaches to secure the child's healthy because children needs optimal care during early childhood. Thus household head has play a role to determine and association with the children nutrition because of the statistically was closely significance p value 0.07 and as well as the occupation status was even close correlation with underweight

refer the statistical significant p 0.074. Another point was household members being sick for past weeks' have indicated the relationship with underweight based on the analyst p value 0.01. However, household member being sought medical assistance also revealed that has associated with underweight of malnutrition and statistically significant p value 0.001.

Furthermore, DPT vaccination was a correlation with underweight because statistically significant p value 0.017.



Graph 3: Vaccination is one of the most primary prevention methods against commonest childhood diseases from birth to 59 months for improving a child's health status and boosts the immune. The vaccine was fighting and improved immunity to prevent killer diseases. Furthermore, respondents reported that BCG is more gotten the children at time of delivery 325 (86), on top of that DPT also gotten fully immunized the children 272 (72), another point of that Polio was obtained the children partially polio oral drops190 (50.3), thus single vaccine of measles vaccination didn't get the children 321 (84.9), therefore the Consequences of not vaccinating was indicated to cause 202 (53.4) stunting growth, while place of birth was majorly home delivery 223 (59), as well as antenatal care visits was more than three time 304 (80.4) and with exclusive breastfeeding for six month was applied 205 (54.2).

Table 1. Shows association between underweight and all sub-variables.

VARIABLES	Children with underweight		Children without underweight		X^2 value	p-value
	No.	%	No.	%		
Gender						
Male	39	11.5	300	88.5		0.07
Female	9	23.1	30	76.9		
Age distribution						
15-35	41	13.0	274	87.0	.172	0.431
>=above 36	7	11.1	56	88.9		
Education level						
No schooling	32	13.2	211	86.8		0.805
Basic grade (1-12)	14	12,5	98	87.5		

VARIABLES	Children with underweight		Children without underweight		X^2 value	p-value
	No.	%	No.	%		
Collage-university	2	8.7	21	91.3		
Main occupation						
Salary employed	6	7.3	76	92,7	5.096	0.074
Business/trading	3	7.0	40	93.0		
Casual labour	39	15.4	214	84.6		
Marital status						
Married	41	12.1	298	87.9		0.286
Divorced	4	15.4	22	84.6		
Widowed	3	23.1	10	76.9		
Main source of food						
Purchase	43	12.9	290	87.1		.0.506
Remittance/trading	0	0.0	12	100		
Food for work	5	15.2	28	84.8		
Third balanced meal per day						
Yes	7	9.3	68	90.7	.956	0.220
No	41	13.5	262	86.5		
Household member being sick for last two weeks						
Yes	48	18	219	82	22.858	0.001
No	0	001	111	100		
Household member being sought medical assistance for last two week						
Yes	38	20.2	150	79.8	19.051	0.001
No	10	5.3	180	94.7		
Type of health care access						
Public hospital	8	47.1	9	52.9		**0.001**
Dispensaries	26	33.3	52	66.7		
Private clinic	3	3.5	83	96.5		
Traditional healer	1	20	4	80		
Medical cost						
Out of pocket	3	3.5	83	96,5		0.001
Relative/friends	0	00	4	100		
Religious group	1	33.3	2	66.7		
NGOs	34	36.6	59	63.4		
BCG vaccine						
Yes	41	12.6	284	87.4		**.0525**

VARIABLES	Children with underweight		Children without underweight		X^2 value	p-value
	No.	%	No.	%		
No	7	13.2	46	86.8		
DPT vaccination						
Yes	41	15.1	231	84.9		**0.017**
No	7	6.6	99	93.4		
Polio						
Yes	29	15.3	161	84.7	2.267	**0.001**
No	19	10.1	169	89.9		
Exclusive breastfeeding						
Yes	30	14.6	175	85.4	1.514	**0.141**
No	18	10.4	155	89.9		

Table 2. Shows the relationship between malaria and sub-variables.

VARIABLES	Children with Malaria		Children with- out malaria		X^2 value	P-value
	No.	%	No.	%		
Gender						
Male	112	33.0	227	67.0	1.732	0.128
Female	17	43.6	22	56.4		
Age distribution						
15-35	106	33.7	209	66.3	.191	0.382
>=above 36	23	36.5	40	63.5		
Education level						
No schooling	84	34.6	159	65.4	.473	0.789
Basic grade (1-12)	36	32.1	76	67.9		
Collage-university	9	39.1	14	60.9		
Main occupation						
Salary employed	24	29.3	58	70.7	1.469	0.480
Business/trading	17	39.5	26	60.5		
Casual labour	88	34.8	165	65.2		
Marital status						
Married	112	33.0	227	67.		0.383
Divorced	12	46.2	14	53,8		
Widowed	5	38.5	8	61.5		
Exclusive breastfeeding						

VARIABLES	Children with Malaria		Children with- out malaria		X^2 value	P-value
	No.	%	No.	%		
Yes	88	42.9	117	57.1	15.429	0.01
No	41	23.7	132	76.3		
Main source of food						
Purchase	112	33.6	221	66.4		0.205
Remittance/trading	7	58.3	5	41.7		
Food for work	10	30.3	23	69.7		
Household member being sick						**0.001**
Yes	127	47.6	140	52.4	73.043	
No	2	1.8	109	98.2		
Household member being sought						**0.001**
Yes	90	47.9	98	52.1	31.434	
No	39	20.5	151	79.5		
Medical cost						**0.025**
Out of pocket	45	52.3	41	47.7		
Relative/friends	4	100.	0	00.		
Religious group	0	00.	3	100.		
NGOs	40	43	53	57		
DPT vaccination						**0.009**
Yes	103	37.9	169	62.1	6.037	
No	26	24.5	80	75.5		
Measles						**0.001**
Yes	32	56.1	25	43.9	14.469	
No	97	30.2	224	76.3		

Table 2: shows the analysis of relationship between variables and malaria used by chi-square test in order observed the factors related with malaria infection among under five children data, based on child's clinical feature of malaria for the last 24hrs of fever and other symptoms experienced, child visited at health center was observed and as well as done blood test used RDTs. So the data revealed the malaria prevalence was more among the under-five children those who most arrived at the clinic. Thus the study analyst has shown exclusively breastfeeding was a significant association with malaria among the under-five children, statistical p-value <0.05. Another point was household members being sick for past weeks' have indicated the relationship with malaria based on the p value 0.01. Despite of that the household member being sought medical assistance also revealed that has associated with malaria and statistically significant p value 0.001. In addition, medical cost of out-pocket payment has associated with malaria treatment regarded p value <0.025, while DPT vaccination and measles vaccination has both associated with malaria parasite p value <0.005. Once most of the sub-variables have no associated with malaria infection, because of all of them are above statically p value >0.005.

Table 3. Shows the correlation between diarrhoea and sub-variables.

VARIABLES	Children with Diar-rhoea		Children without Diar-rhoea		X^2 value	P value
	No.	%	No.	%		
Gender						
Male	150	44.2	189	55.8	.699	0.252
Female	20	51.3	19	48.7		
Family Size						
1-10 persons	92	40.9	133	59.1	3.748	0.034
>=above 11	78	51.0	75	49.0		
Education level						
No schooling	116	47.7	127	52.3	3.759	0.153
Basic grade (1-12)	42	37.5	70	62.5		
Collage-university	12	53.3	11	47.8		
Main occupation						
Salary employed	33	40.2	49	59.8	1.036	0.596
Business/trading	19	44.2	24	55.8		
Casual labour	118	46.6	118	53.4		
Exclusive breastfeeding						
Yes	96	46.8	109	53.2	.623	0.247
No	74	42,8	99	57.2		
Three balanced meal per day						
Yes	27	36.0	48	64.0	3.044	**0.052**
No	143	47.2	160	52.8		
Source of water						
Pipe water	166	44.4	208	55.6		0.04
Protected dug well	4	100.	0	00		
HH member being sick						
Yes	169	63.3	98	36.7	123.343	**0.001**
No	1	0.9	110	99.1		
HH member being sought medical						
Yes	121	64.4	67	35.6	56.812	**0.001**
No	49	25.8	141	74.2		
BCG vaccine						
Yes	153	47.1	172	52.9	4.144	0.029
No	17	32.1	36	67.9		

VARIABLES	Children with Diarrhoea		Children without Diarrhoea		X^2 value	P value
	No.	%	No.	%		
DPT vaccination						
Yes	130	47.8	142	52.2	3.118	**0.049**
No	40	37.7	66	62.3		

Table 3: Shows the association between independent variables and Diarrheal diseases that used by chi-square test in order to identified the extend and existence of diarrhea. This data was revealed that majority of the under-five children was suffered diarrhea at the moment the study was conducted due to rain season that commonly exposed the diarrheal disease. And was closely assessed the present and history of diarrhea for the last couple days. Thus this data shows the variable has significant relationship with diarrhea according the Statistical P value <0.005, because family size is part of association with diarrhea p value < 0.034, moreover less of three balanced meals per day has also associated with diarrhoea p value 0.0052, another important point is source of water that majorly associated with diarrhoea due to p value 0.004. on top of that household members being sick for past weeks' have indicated the relationship with diarrhoea based on the p value 0.01 and as well as the household member being sought medical assistance also revealed that has associated with diarrhea and statistically significant p value 0.001. While BCG and DPT vaccination has both associated with diarrhoea p value <0.005.

4. DISCUSSION

All variables were observed by descriptive and inferential statistics used Spss 19 version based on the frequency, percentage and chi-square test to determine the association between independent and dependents variables This study was concentrated on factors associated with the health stats among under-five children who are susceptible age group mostly experiencing from different conditions were assessed in order to determine the impact of certain common health outcomes.

The objective of the study was to determine the prevalence of certain diseases in under five children with health conditions that are common during childhood in Somalia.

The overall health situation in Somalia remains poor health services, with some of the worst health indicators in the world. However, little progress is being made to strengthen the health sectors, but yet poverty is upset by the lack of an actively engagement from the government, widespread insecurity, and natural disasters like floods and droughts.

As long the people of Somalia are forced to resort to violence for basic needs as food, water, and sanitation have a problem of poverty which is the proportion of the population living on less than $ 2 per day measured purchasing power. Droughts were caused food insecurity and also exacerbated by conflict, and trade disruptions remain a persistent and serious challenge.

Regarded the participant's respondents was indicating low education, un-employment, cultural factors including early marriage; quality of mothering that traditional affecting cleanliness, child care, all factors have impact the health status among under-five children.

Even though Somalia's health system is recently not capable to the respond huge health needs for the community and limited support from the government that was offered very low in terms of health expenditures, currently, healthcare services depend on out-of-pocket, whereby some hospitals under the ministry of health offer free health services to the community.

But since 2012, MoH is being struggled to rebuild all governmental hospitals to deliver free health services to the community. While more health centers are supporting international organizations and providing primary health care for mothers and children.

The findings of the study have reported the certain diseases that study was focused on the commonest conditions experienced the under five children are following accordingly underweight malnourished children was 12.7%, children with malaria 34.1% and children with diarrhea 45% in Wadajir district, Mogadishu.

Compare a support study done in Punjab was argue that socio-economic of the family was most predictor factors caused by underweight or stunting in the study was 18% under-five in Punjab (Farooq *et al.*, 2020).

Similarly Compare support study done by in Bangladesh shows that children of families with the poorest wealth index have most likely to be underweight 7.9% found in other studies conducted in Bangladesh and other countries (Sultana, Rahman and Akter, 2019).

Compared a support the study of malaria in rural Ghana reported to be at 38% for people who live in urban environments, which are close to this study conducted in Mogadishu. This data indicated risk factors linked to behaviors as when was the opportunity to obtain and use mosquitos bed nets (Id, Feresu and Mwakikunga, 2018). Similar a supporting study conducted in Badbado camp, in Mogadishu-Somalia, was 33% prevalence of diarrhea, children who have suffered from diarrhea in the last two weeks regarding (Yusuf, 2020).

The study had found a lower prevalence of diarrhea at 32.6% in under-five children who have primary caregivers were no hygiene precaution practices, while diarrheal was associated with factors such as mother's age being less than 25 and the conviction that no gender differences were associated with regarding diarrhea prevalence or the caretaker's decision to treat (Diouf *et al.*, 2014).

CONCLUSIONS

Many aspects that were directly affected by the sources of food from the household, numbers of meals per day, source of drinking water, members of household being sick for the last two weeks, and members of the households being sought medical treatment were all expressed the health status of under-five children and as well as indicates the context of the participants.

The outcome of the study has summarized the head of the families are primary organ that has determined the shape of the households, and this study has concluded the socio-economic factors were more associated with child's health and well-being, as well as certain potential factors have marginalized and faced the accessibility of healthcare, improper hygiene, and food in-security, unclean water from top have all exposed diarrhea, malaria, and underweight. The study has revealed that low income and early marriage was a primary aspect of risk factors which leads the child experiencing several conditions, such as diarrhea, underweight and malaria for the first or second child, due to improper bottle feeding, inappropriate sanitary practice, poor hygiene, poor nutritional care were all caused by diseases from the early childhood.

RECOMMENDATIONS

More efforts are required to put in the position done by the government to ensure availability of social services and affordable services. The availability of safe water is only one to reduce the causes of diarrhea, and as well the investments in this sector will be rewarding. The government should concentrate and work on the best way to achieve universal health care. It should entail all people above legal aid in a universal medical scheme. Many efforts are needed to minimize the turbulence of the nation and also require a compromise of contestation of political and economic power.

In Somalia economic burden is yet addressing accordance with GDP and GNP that less budgeting the expenditure of the healthcare services and as well less controls the essential food processing purchasing from the markets also require to appropriate surveillance to reduce the health problems among the under-five years' children because of recently the economic situation was low due to covid-19 pandemic that impact the economic growth.

LIMITATION OF STUDY

Time contain was mainly limitation and recourse limitation was also having another impact. Unable to offer the consent because the target population was under-aged that's why care takes were allowed to provide the consent.

AUTHORS' CONTRIBUTIONS

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation.

DECLARATION OF INTEREST

The author declares no conflict of interest

INFORMED CONSENT

Informed consent was obtained from all respondents involved in the study

FUNDING DETIAILS

I hereby declare that I have not received any funding from any source for the research study entitled" Factors Influenced of Health Status of Under Five Children in Wadajir district, Mogadishu, Somalia." I have conducted this research independently and without any financial support.

DATA AVAILABILITY STATEMENT

Data are available upon request.

ACKNOWLEDGEMENT

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