FACTORS ASSOCIATED WITH RESPIRATORY TRACT INFECTIONS AMONG PRE-SCHOOL CHILDREN IN WAMALA VILLAGE WASKISO DISTRICT.

BY

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OPERATIONAL DEFINITIONS

Control : Is the power to influence or direct people's behaviour

Globally : Whole world

Infection : Is the invasion and growth of germs in the body

Morbidity : Quality of being unhealthy.

Mortality : Condition of being susceptible to death.

Pre-school : Refers to an early childhood program in which children combine learning and play in a program run by professionally trained adults, children enrolled in pre-school program are between 3 to 5 years of age

Prevalence : The number of cases of a disease in a specific place at a specific time.

Prevention : Is the action of stopping something from happening

Risk Factors : This is any attribute, characteristic or exposure of an individual that increases the likelihood of developing disease or injury

RTI : Refers to the infection at different sites along the respiratory tract

Socio economic : Pertains to social and economic factors**.**

Treatment : Medical care given to a patient for an illness or injury.

ABSTRACT

Purpose of the study: The purpose of the study was to determine the Factors Associated with Respiratory Tract Infections among Pre-school Children in Wamala village Wakiso district.

General objective: The study aimed at assessing the factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

Objectives: The study was aimed at assessing the child related, socio-economic and parent related factors associated with respiratory tract infections among pre-school, children Wamala village Wakiso district.

Study methods: The research Data was obtained by a descriptive cross-sectional method because it was time saving, accurate and cheap. Simple random sampling was used to obtain the 80 respondents of the study.

Results: Regarding child related factors, most (83.8%) of the children had vegetables included on their meals, 3.8% were not immunised at all and 6.3% of respondents had children who usually associate with smokers. However regarding socio-economic factors more than half 52.5% had a family size of more than 8 family members, majority 91.2% were using charcoal as source of fuel for cooking and 13.8% of the respondents lived in poorly ventilated houses. And of the parent related factors, few 5% were smoking tobacco with 75% had special places at home for smoking and 33.3% of the respondents smoked live with children.

Conclusion: From the study findings factors associated with respiratory tract infections among pre-school children included low physical activity, immunisation status, not having vegetables on meals, large family size, use of charcoal and wood for cooking and living in the environment that is often polluted with tobacco smoke.

Recommendations: the researcher recommended that the government should enact a law against tobacco use especially those who smoke in public and those who involve children in tobacco buying. Parents should be questioned on better way to groom their children and do not smoke in front of their children, they should also stop a negative attitude towards immunization, family planning is important to ensure good health of their children. The public should be involved and be informed about the cause and how to avoid respiratory tract infections. Schools are urged to feed children very well to avoid respiratory tract infections.

CHAPTER ONE: INTRODUCTION

Introduction

This chapter contains the background of the study, problem statement, general objectives, specific objectives, research questions, significance of the study and scope of the study.

1.1 Background of the study

Respiratory tract infections are among the most common infections in humans especially in pre-school children (*Joliffe DA, 2016*).the major burden of disease from lower respiratory tract infections which involves pneumonia and bronchiolitis which are caused by bacteria and respiratory viruses (*Bosch et al, 2016*).

Acute respiratory tract infections pose a major global challenge to the health system and are the leading cause of mortality and morbidity among children under five years. According to WHO, respiratory tract infections account for 6% of the global disease burden. Around 6.6 million under-five aged children of age die each year worldwide. ARI is responsible for about 30%-50% of visits to health facilities and for about 20%-40% of admissions to hospitals for under-five children worldwide (*Ghimire P et al, 2022*).

In low and middle income countries in sub-Saharan Africa and southern east Asia RTI account for half million deaths. Its estimated that six out 10 ten deaths among children are due to ARI each year, more than 160million children develop RTI where 20 million get hospitalised and 1 million die. In developing countries 40-60% of outpatients and 30-40% of hospitalisation among pre-school children are due to ARI (*Mulambya LN et al, 2020*).

ARI remains a serious public health problem in sub-Saharan Africa. About half of all mortalities among children under 5 years of age in 2017 were in SSA, with ARIs being the foremost source of mortality. The prevalence of lower respiratory tract infections in pre-school children was 25.3% in 28 Sub-Saharan African countries with uppermost mortality rate of 55% (*Ekholuenetale M et al, 2023*).

In east Africa the prevalence of RTI among pre-school children ranges from 10% to 40% with higher rates reported in urban areas. Respiratory tract infections account for approximately 30% of all childhood death in the region (*UNICEF, 2016*).

Acute respiratory tract infections are among the leading causes of child mortality and morbidity in Uganda. Prevalence of acute respiratory tract infections was 9% of children

under age of five had symptoms of respiratory tract of acute respiratory tract infects. The prevalence was highest among children in karamoja region 27% and lowest among children in Bunyoro region 0.9% (*UDHS, 2016*)

1.2 Problem statement

In Uganda, respiratory tract infections remained the leading cause of morbidity and mortality in pre-school children accounting for about 9% of acute respiratory tract prevalence, with 81.3% in urban areas such as Kampala, wakiso and mukono districts. This accounted for 1 in 16 of under-five mortality. The heavy loss of young lives from childhood ARI mortalities poses a heavy burden to families and health care providers in Uganda (*Nshimiyimana Y et al, 2022).*

RTIs are the most common causes of both illness and mortality in pre-school children, who average three to six episodes of RTIs annually regardless of where they live or what their economic situation is (*Kamath et al, .2019*).

In order to abate this problem, **t**he government of Uganda through ministry of health with support from partners like PACE are implementing Integrated community case management(ICCM) strategy by Village health team(VHT) members where RTI are among the diseases targeted including malaria and diarrhoea to be managed at community level to enhance access by the caregivers but this has also hit a snag resulting from inadequate training offered to the VHTs, less supplies and also less trust developed among the VHTs by the community members which still leaves the challenge of pneumonia not well handled (*Tuhebwe D T.,2017*).

Conducting this research regarding to assessment of associated factors to such diseases can greatly help policy decision making and reduce these morbidity and mortality rates especially in pre-school children.

1.3 General objective

To assess the factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

1.3.1 Specific objectives

1. To assess the child related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

2. To assess the socio-economic factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.
3. To find-out parent related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

1.3.2 Research questions

1. What are the child related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.
2. What are the socio-economic factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.
3. What are the parent related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

1.4 Significance of the study

This study identified and explored the factors associated with respiratory tract infections among pre-school children which provided relevant information to healthcare system and policy makers on area that require emphasis to ensure prevention and control of respiratory tract infections in wamala village.

The results of the study is to be used as baseline data for further studies

The results of the study shall be used to build on already existing data and literature on prevention and control of respiratory tract infections among pre-school children.

1.5 Scope of the study

1.5.1 Content scope

The study was to assess the factors associated with respiratory tract infections among pre-school children.

1.5.2 Geographical scope

The study was carried out in wamala village wakiso district

1.5.3 Time scope

The study was conducted for a period of one week in August 2023

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter briefly describes the methodology that will be used in the study and these include the study design, Study area, Study population, Sample size determination, Sampling technique, Sampling procedure, Data collection method, Data collection tool, Data collection procedure, Quality control, Data analysis and presentation, Ethical consideration, and Study limitations.

3.1 Study design

A cross sectional descriptive study was used to collect qualitative and quantitative data due to limited time frame allocated as well as the limited resources that are available for the study.

3.2 Study area

The study was conducted in Wamala village Nansana municipality Wakiso district in central region of Uganda.

3.3 Study population

The study population included parents of pre-school children with respiratory tract infections in Wamala village wakiso district

3.4 Sample size determination

The sample size was calculated using the Burton's formula which is formulated as;

n=QR/O.

Where;

n= sample size

Q= population size

R= number of household heads

O= time spent on each respondent

Taking Q= 80 respondents, R = 25 and O = 25 minutes

$n = \frac{80 \times 25}{25}$

n= 80 respondents

Therefore the sample size of 80 respondents will be required

3.5 Sampling technique

A simple random sampling technique was used for selection of respondents to participate in the study. The sampling technique was chosen because it offers an equal chance to all members in the set to be selected, it is also resource saving, easy to administer, eliminates bias and time saving.

3.6 Sampling procedure

Using a simple technique, participants were selected whereby 1 to 10 will be written on a small piece of paper, folded in a box, thoroughly shuffled and one piece of paper after another is picked to select a study participant. Participants who picked a paper with one(1) were selected for study of the day.it was then be repeated for a number of days to obtain the required population and others will not be considered in the study.

3.7 Data collection methods

Data was collected using self-administered, semi-structured questionnaires. This enabled data collection in a short period of time at relatively low costs and it was also be easy to quantify the data for analysis.

3.8 Data collection tool

Semi-structured questionnaire was used. This because it enabled collection of data in a short period of time at relatively low costs and it was also easy to quantify the data for analysis.

3.9 Data collection procedure

The researcher obtained an introductory letter from Kampala institute of health professionals which was used to seek permission from the chairperson to allow him to collect data. The researcher then proceeded to the community with the chairperson who briefed the community members and introduced the researcher to them. Then data was collected using questionnaires which were administered to parents of children with RTI for filling after obtaining informed consent. A total of 80 questionnaires were administered to parents of pre-school children with RTI in Wamala village by the well trained research assistants for filling. Filled questionnaires were kept under key and lock and cross checked in the evening for completeness and then the respondents were thanked for completion. Incomplete questionnaires were filled immediately.

3.10 Study variables

The dependent variable is;

The prevalence of RTI cases in wamala village

Independent variables are;

Child related factors associated with RTI among pre-school children

Socio-economic status of parents with pre-school children with RTI

Care taker associated factor to RTI among pre-school children with RTI

3.11 Quality control

A pre-test of the questionnaire was done on 10 participants in Wamala village among parents of pre-school children with RTI of the sample size before application of the study since it had similar setting before beginning of the study one week before and several adjustments were made.

Training of the research assistants for one day was done on each of the data collection tools and data collection procedure prior to the study, this gave ample time to ensure that the data was collected at the right time which also ensured quality data

The study population included all parents of pre-school children with RTI with who were willing to take part in the study and all parents of pre-school children with RTI were available without will to consent on that day of data collection were excluded through which strict selection criteria was followed while selecting respondents.

The questionnaire was translated verbally to Luganda language to participants who were not able to understand English. It was double checked for completeness of information to ensure reliability and was kept safely under lock and was only accessible by the chief researcher.

3.12 Data analysis and presentation.

The collected data was first analysed manually by use of papers, pens and tallying. After which data was presented using tables, graphs pie charts and narrative paragraphs.

3.13 Ethical consideration.

Before starting the study, a letter of introduction from Kampala institute of health professionals and copy of the research proposal was presented to the chairperson of wamala village for approval so as to commence with data collection.

The researcher asked approval and informed consent from the participants to engage them in the study. All participants were given the right to decline their participation in answering the questionnaires and participants were assured of confidentiality for whatever they discussed.

The researcher informed the participants about the purpose and objective of the study. Confidentiality provisions, principles of privacy and confidentiality were upheld.

3.14 Study limitations.

The study time available was insufficient for the study since it involved reading and interpreting the questions to cater for the illiterate respondents. As a solution to this challenge, only valid and important questions were contained in the questionnaire to save time.

The researcher encountered a number of inconveniences during the study which included; inadequate resources such as funds to fully fund the activities involved in the study. But this was solved by soliciting for financial help from the funds from parents, relatives and using the money appropriately as per the budget to avoid wastage.

Non-compliance by some of the respondents would have led to inaccurate results. However, this was counteracted by ensuring willingness of the respondents before they were involved in the activities of the study.

3.15 Dissemination of results.

The results of the research are disseminated to Uganda Allied Health Examination Board (UAHEB), Kampala institute of health professionals (KIHP) and the chairperson of Wamala village.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents findings from the field as a sample size of 80 respondents and it is focused on identifying the factors associated with respiratory tract infections among pre-school children in wamala village Wakiso district. The findings were presented according to specific objectives, demographic and social, characteristics in form of frequency tables, graphs and pie chart as show below.

4.1 Social demographic factors of the respondents

Table 1: Showing distribution of respondent's responses when asked about their demographic characteristics.

(n=80)

Variables	**Responses**	**Frequency(f)**	**Percentage (%)**
Age of the child (years)	3	31	38.8
	4	27	33.7
	5	22	27.5
	Total	**80**	**100**
Age of the care giver (years)	Less than 21	13	16.3
	21 and above	67	83.7
	Total	**80**	**100**
Education level	Higher level	13	16.3
	Secondary level	35	43.7
	Primary level	28	35
	No formal education	4	5
	Total	**80**	**100**
Occupation	Business man/woman	29	36.2
	Employed	27	33.8
	Peasants	00	00
	Others	24	30
	Total	**80**	**100**
Marital status	Married	60	75

	Single	20	5
	Total	**80**	**100**
Religion	Catholic	26	32.5
	Anglican	21	26.2
	Muslim	25	31.3
	Others specified	8	10.0
	Total	**80**	**100**
Gender	Male	14	17.5
	Female	66	82.5
	Total	**80**	**100**

From table 1 above, Few 31(38.8%) of the respondents had children aged 3 years old, 27(33.7%) had children aged 4 years old while 22(27.5%) of the respondents has children aged 5 years old. Most 67(83.7%) of the respondents were aged 21 years and above and 13(16.3%) of the respondents were aged less than 21 years of age. The study also revealed that 13(16.3%) of the respondents had received tertiary education, 35(43.7%) had received secondary education, 28(35%) had received primary education only and 4(5%) had no formal education. it also revealed that 29(36.2%) of the respondents were self-employed, 27(33.8%) were employed and 24(30%) were in non-specified. More than half 60(75%) of the respondents were married and 20(25%) of the respondents were single. Most 66(82.5%) of the respondents were females as compared to 14(17.5%) who were males.26 (32.5%) of the respondents were Catholics, 21(26.2%) were Anglicans, 25(31.3%) were Muslims and 8(10%) in other category specified.

4.2 Child related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

Table 2: showing the distribution of the respondent's response on whether vegetables are included on their child's meals.

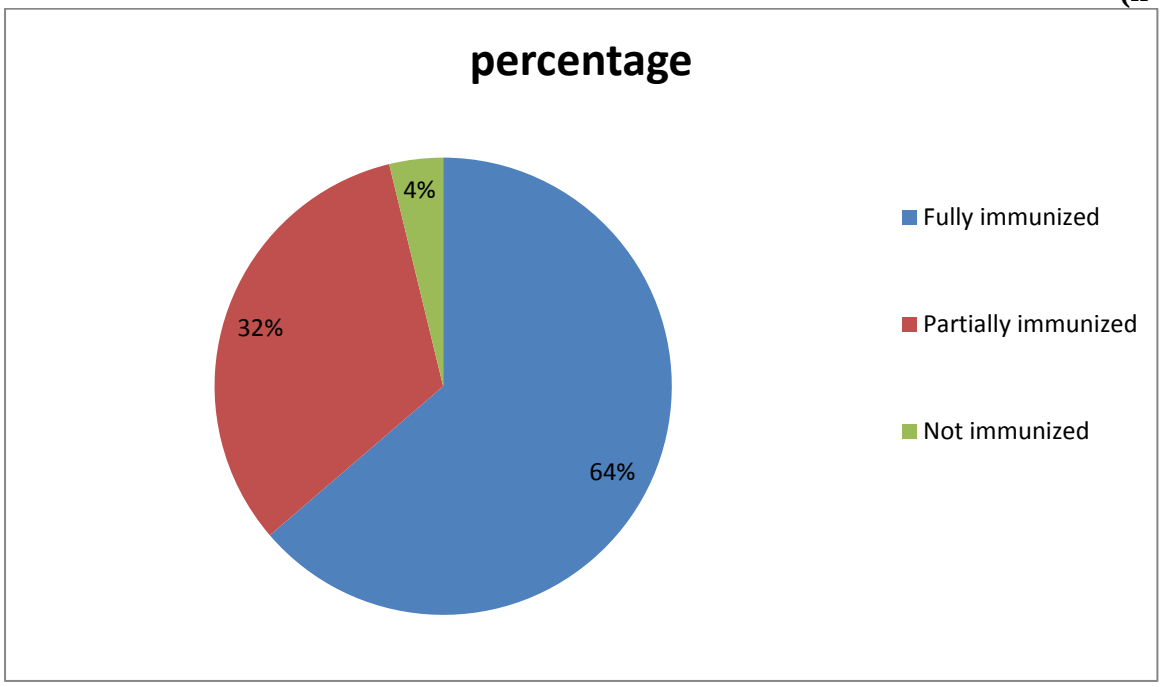
(n=80)

Response	**Frequency (f)**	**Percentage (%)**
Yes	67	83.8
No	13	16.2
Total	**80**	**100**

From the table 2, Most 67(83.8%) of the children had vegetables included on their meals and 13(16.2%) of the respondents had children who did not have vegetables.

Figure 1 shows the respondent's response on the immunisation status of their children.

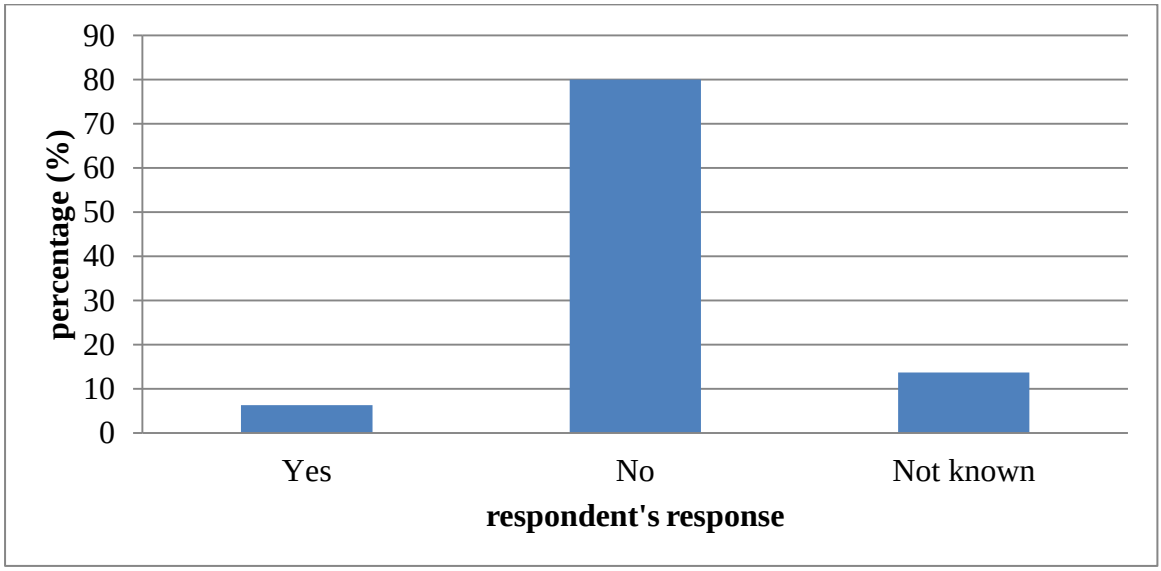
(n=80)



From figure 1: 51(63.7%) of the respondents had children who were fully immunised, 26(32.5%) were partially immunised and 3(3.8%) had children who were not immunized at all.

Figure 2; Shows the response of the respondents on whether their children usually associate with smokers

(n=80)



From figure 2; more than half 64(80%) of the respondents had children who did not associate with smokers, 5(6.3%) of the respondents had children who usually associate with smokers and 11(13.7%) were not aware.

Table 3 shows the distribution of respondent's response on the physical activity of their children.

(n=80)

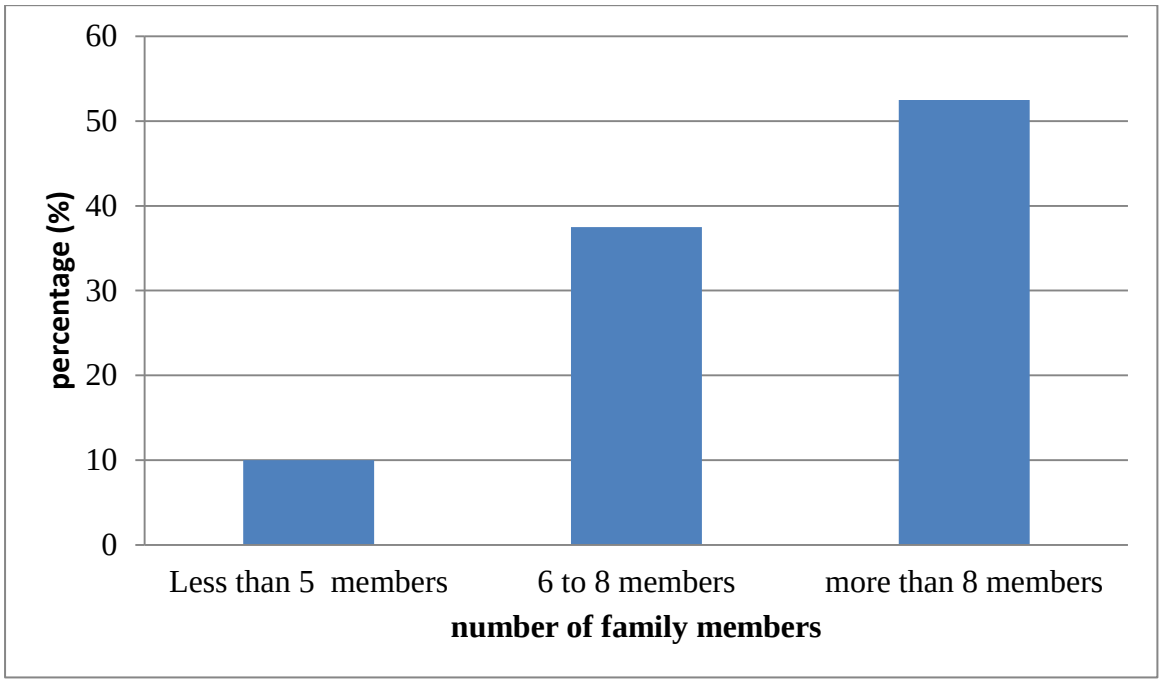
Responses	**Frequency (f)**	**Percentage (%)**
Yes	41	51.3
No	39	48.7
Total	**80**	**100**

From table 3; almost half41 (51.3%) of the respondents had children who are physically active and those whose children were not physically active were 39(48.7%).

4.3 Socio-economic factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

Figure 3 showing the family size of the respondents

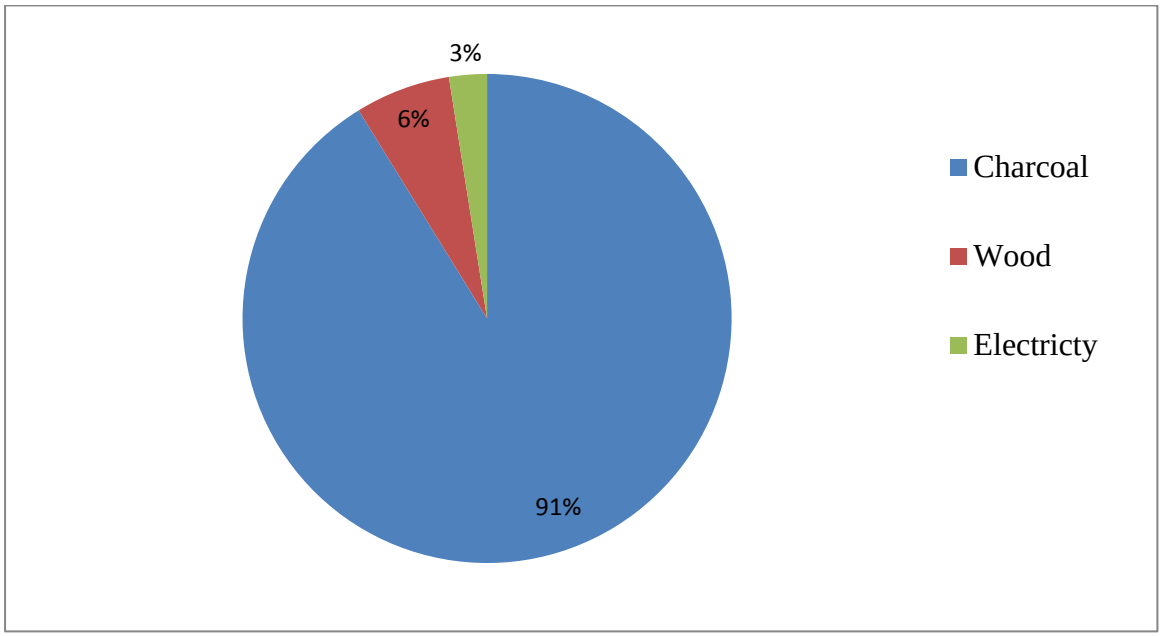
(n=80)



From figure 3; more than half 42(52.5%) of the respondents had a family size of more than 8 members, 30(37.5%) of the respondents had a family size between 6 to 8 family members while 8(10%) had a family size of less than 5 family members.

Figure 4 showing the respondents type of fuel used for cooking.

(n=80)



From figure 4; majority 73(91.2%) of the respondents were using charcoal as fuel for cooking followed by 5(6.3%) were using wood while a few 2(2.5%) of the respondents were using electricity as fuel for cooking.

Table 4: Showing the respondents response when they were asked whether they live in a well-ventilated house.

(n=80)

Responses	**Frequency (f)**	**Percentage (%)**
Yes	69	86.2
No	11	13.8
Total	**80**	**100**

From the table above; most 69(86.2%) of the respondents lived in houses which were well ventilated and a few 11(13.8%) of the respondents lived in poorly ventilated houses.

4.4 Caretaker related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

Table 5 showing the respondents response when asked about whether they smoke tobacco at home

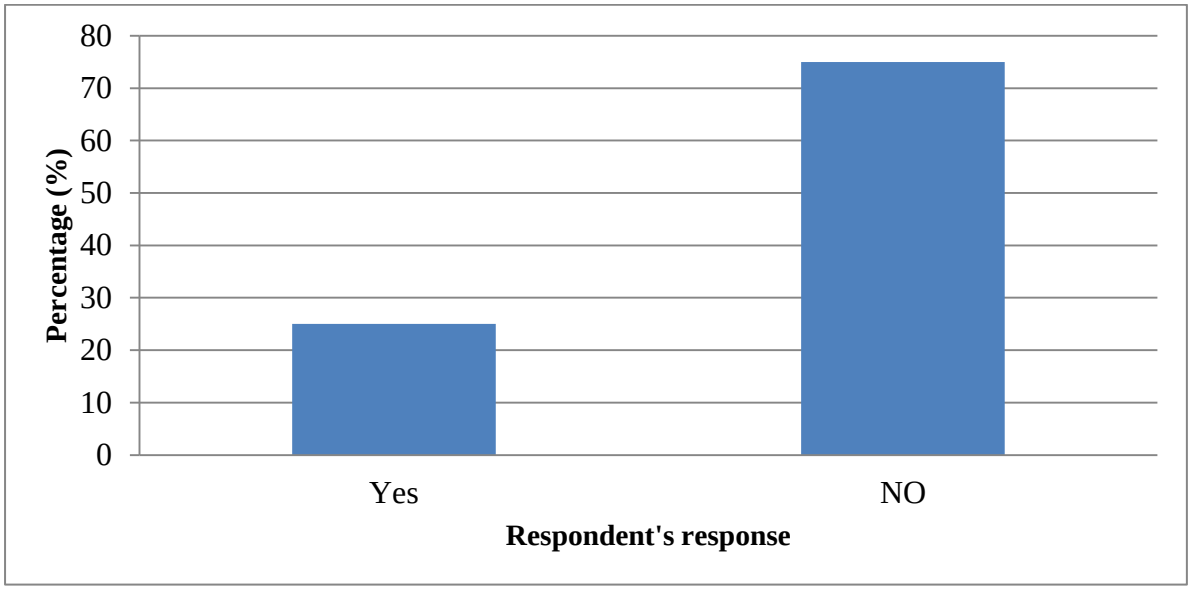
(n=80)

Responses	**Frequency (f)**	**Percentage (%)**
Yes	4	5
No	76	95
Total	**80**	**100**

From table 5 above, a few 4(5%) of the respondents were smoking tobacco at home and majority 76(95%) of the respondents were not smoking tobacco at home.

Figure 5 showing the distribution of respondent's response on whether there is a special room or place at home for smoking.

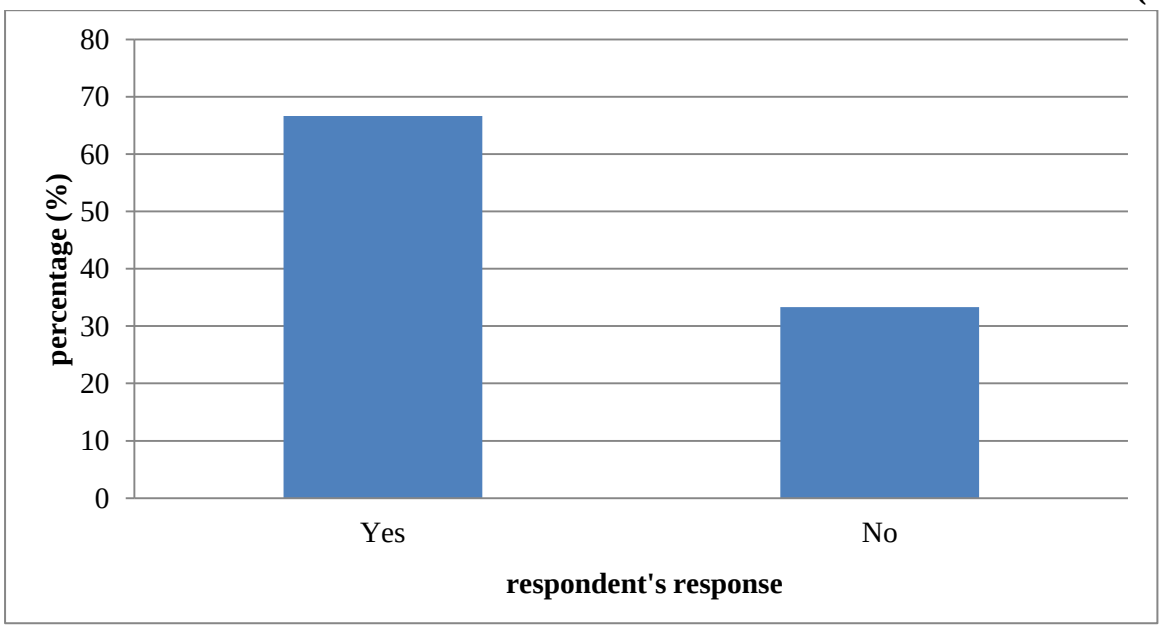
(n=4)



From figure 5, most 3(75%) of the respondents did not have special rooms or place for smoking at home while 1(25%) had a special room or place for smoking at home.

Figure 6 showing the distribution of respondent's response on whether they smoke live with children.

(n=3)



From the figure 6 above majority 2(66.7%) of the respondents were smoking live with children while 1(33.3%) were not smoking live with children.

CHAPTER FIVE
DISCUSSION, CONCLUSSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the discussion of findings, conclusions and recommendations in line with the specific objectives of the study as fellows;

5.1 Discussion

The study was conducted to find out the factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District.

The research was conducted in line with the objectives which were; to assess the child related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District, to assess the socio-economic factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District, and to find out caretaker related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District.

5.1.1 Child related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District.

The objective of the study was to assess the child related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District. Data analysis and interpretation revealed the following major findings under this objective;

It revealed that in table 3 that more than half (51.3%) of the respondents had children who were not physically active. These findings indicate that low physical activity is highly associated with respiratory tract infections in pre-school children. This is probably because low physical activity in pre-schoolers result in increased susceptibility to respiratory tract infections. These findings agree with Ostrzyzek-przezdziecka K, et al 2023 in a study about association of low physical activity with higher respiratory tract infection frequency among pre-school children in Warsaw city Poland where the results revealed that 44% of the respondents had a low physical activity.

In table 2, Majority 83.8% of the respondents had children whom vegetables are included on their meals. These findings indicated that vegetables are protective factors for RTI among pre-schoolers. This is because vegetables contain the essential nutrients which help in

boosting the immune resistance against most common infections. These findings agree with Liu Ping-hui et al 2017 in a study about the prevalence ad influencing factors of recurrent RTI among pre-school children in Mudanjiang city which showed that taking vegetables is 7 times a protective factor against RRTI.

It also revealed in figure 1 that most (63.7%) of the respondents had children who were fully immunised and 32.5% partially immunised and few 3.8% were not immunised at all. These findings indicate that complete immunisation does not provide complete protection against RTI among pre-schoolers. This probably because respondents think that immunization has helped their children so much to avoid respiratory tract infections. Those who don't believe in immunization attribute this mostly to their religious beliefs and others because of their cultural norms and customs. These findings disagree with Yuvaraj B, et al 2018 in a study about factors related to ARTI in pre-school children in an urban slum in India which showed that 23% of children with complete immunisation had RTI and 49.3% of children were party immunised or not immunised at all.

5.1.2 Socio-economic factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District.

The objective of the study was to assess socio-economic factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District. Data analysis and interpretation revealed the following major findings under this objective;

It revealed that in figure 3 majority (52.5%) of the respondents had a family size of more than 8 members. These findings indicate that a large family size is associated with RTI among pre-schoolers and small family size reduces the risk of RTI among pre-schoolers. This is probably due to big family size and cannot sustain at times the wellbeing of their children that's why they are so much exposed to respiratory tract infections and others believe that the small size of their families actually has helped them so much to avoid respiratory tract infections in their children. These findings agrees with Teklay Z, et al 2020in a study about the magnitude and factors associated with upper respiratory tract infection among under five children which showed that the prevalence of URTI was 67.3% among children in large size families.

Majority 91.2% of the respondents were using charcoal as fuel for cooking followed by (6.3%) used wood and 2.5% used other sources of fuel such as gas and electricity. These findings indicate that most of the children with RTI were coming from families who use

charcoal as the source of fuel for cooking. This is probably because respondents in Wamala village belong to middle income status who can afford charcoal and also due to scarcity of wood since wamala is an urban area; charcoal depletes the oxygen in the surrounding which predisposes the children to RTI. These findings agree with Mulambya L et al 2020 in a study about trends ad factors associated with ARI among under five children in Zambia which concluded that using charcoal and wood for cooking was associated with 2.67 times increased odds of ARI as compared to other sources such as electricity and gas.

5.1.3 Parent related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district.

The objective of the study was to find out parent related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district. Data analysis and interpretation revealed the following findings under this objective;

It revealed that few (5%) of the respondents were smoking tobacco at home and among them 25% of the respondents who were smokers had special places for smoking at home, the rest (66.7%) of the respondents were smoking live with children. Those findings indicate that pre-school children living in a home environment often polluted with tobacco smoke more often get RTI. This is probably because tobacco smoke pollutes the child's environment impairs their immune responses in the respiratory tract hence more susceptible to RTI and the risk increases more in children in whom the parents smoke live with them. The results disagree with Bielska DE et al 2015 in a study about exposure to environmental tobacco smoke and respiratory tract infections among pre-school children which showed that 26.25% of children are from homes where tobacco was smoked in separate rooms and 45.5% lived in homes where no rules connected with smoking had been established.

5.2 Conclusions

This study specifically sought to assess the child related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District. The study established that RTI were more common among pre-school children with low physical activity and those who completed their immunisation and less prevalent among those who had vegetables are included on their meals. In view of these findings low physical activity, complete immunisation and not including vegetables on child's meals are the child related factors associated with RTI among pre-school children.

The study also sought to assess the socio-economic factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso District. The study established that. The study established that pre-school children from large family size and those from homes where charcoal and wood are used as fuel for cooking had a higher prevalence of respiratory tract infections among pre-school children. In view of these findings, large family size and use charcoal and wood for cooking are the socio-economic factors associated with respiratory tract infections among pre-school children.

The study also sought to find out the Parent related factors associated with respiratory tract infections among pre-school children in Wamala village Wakiso district. The study established that school children living in a home environment often polluted with tobacco smoke more often get RTI, the risk increases more in children in whom the parents smoke live with them. In view of these findings tobacco smoking is a parent related factor associated with increased chance of RTI acquisition among pre-school children.

5.3 Recommendations

The researcher came up with the following recommendations.

Government

The government should enact a law against tobacco use especially those who smoke in public and those who involve children in tobacco buying.

Parents

Parents should be questioned on better way to groom their children and do not smoke in front of their children.

They should also stop a negative attitude towards immunization.

Family planning is important to ensure good health of their children.

Public

The public should be involved and be informed about the cause and how to avoid respiratory tract infections.

Schools

Schools are urged to feed children very well to avoid respiratory tract infections.

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