

Effect of Environmental Condition on Health Status of Orphans Children in Sohag Governorate

Fatma Mahmoud Hemeed¹, Soad Sayed Bayomi² & Threa Mohammed Mahmoud³

¹ Demonstrator of Family and Community Health Nursing, Faculty of Nursing, Sohag University, Sohag, Egypt

² Professor of Family and Community Health Nursing, Faculty of Nursing, Assiut University, Assiut, Egypt

³ Assistant Professor of Family and Community Health Nursing, Faculty of Nursing, Sohag University, Sohag, Egypt

Abstract

Background: The orphan's children need for continuous support and care for their health. They are extremely vulnerable group and need special care. **Aim:** assess the effect of environmental condition on health status of orphans children at Sohag Governorate. **Study design:** Descriptive research design was used. **Setting:** The study was carried out in orphanages at Sohag Governorate. **Sample:** A convenient sample of sixty five (65) orphans children. **Tools:** Three tools were used for data collection. **Tool (I)** included two parts; Part one: socio demographic data and Part two: Observational check list to assess the environmental condition. **Tool (II)** included two parts; Part one: physical assessment sheet and Part two: practice about hand washing and teeth brushing. **Tool (III)** included assessment of health problems. **Results:** 63.1% of the studied children were males, 32.3% of them had a digestive system problems, 69.2% of the studied children had unsatisfactory practice about hand washing and teeth brushing. There was negative correlations with statistical significant difference between physical condition of orphans children and physical and social home environment ($r = -0.433$ at $p = 0.035$, $r = -0.564$ at $p = 0.003$ respectively) **Conclusion:** Orphans children had physical, social and psychological problems specially males. Also, they had unsatisfactory practice about hand washing and teeth brushing. **Recommendation:** Educational program for care givers about the environmental condition that affect orphanage children.

Keywords: *Environmental condition, Health & Orphans children.*

Introduction

According to UNICEF 2020, orphan is a child who has lost one or both parents due to death and is under the age of 18 years. This child requires care and protection. According to this definition, there were almost 140 million orphans globally in 2015, including 61 million in Asia, 7.3 million in Eastern Europe and Central Asia, 10 million in the Caribbean in India and Latin America, and 52 million in Africa (El-Sayed et al., 2020).

UNICEF defines an orphan as a child under the age of 18 who has lost one or both parents due to any cause of death, with 140 million orphans worldwide in 2017. UNICEF classed orphans into three: Paternal orphans are children who have lost their father. Maternal orphans are children who have lost their mother. Double orphans are children who have lost both of their parents (Singh & Sekher, 2021).

Children are the future of the nation. Parents play an important role in a child's physical, mental, and emotional well-being; unfortunately, not all children are brought up by their parents. Most of these orphan children are placed in orphanages homes. (Faust & Manning, 2021).

An orphanage home is a residential institution for taking care of and educating orphans. Children living in orphanages are a socially vulnerable

group often neglected by mainstream society and are more prone to many problems. About 24 million children worldwide live without their parents out of which about 8 to 10 million are infants and children who live in orphanages (Mahanta et al., 2022).

Environment literally means surrounding and everything that affect an organism during its lifetime is collectively known as its environment. In another words "Environment is sum total of water, air and land interrelationships among themselves and also with the human being, other living organisms and property". It includes all the physical and biological surrounding and their interactions. Environmental conditions that affect orphans children are: Water sanitation and hygiene, air quality, noise level, weather and climate change, education, abuse and neglect, social and psychological factors and nutrition (Jamuna & Vishwanath, 2023).

Child health is essential for adult health and well-being. When children's health is nurtured and supported, there is an absence of physical and mental abuse, or other intentional childhood trauma, and there are opportunities to gain habits that support good health during childhood, the stage is set for a healthy adulthood that is less likely to include chronic health problems such as overweight/obesity, poor oral

health, diabetes, and other chronic physical and mental health problems. (Clark et al., 2020).

Losing a parent in childhood is quite stressful. Some bereaved children may develop complicated sorrow and posttraumatic stress, low stress resilience, long-term depressive symptoms, a sense of meaninglessness, and high-risk behaviors, all of which lead to reduced educational aspiration and accomplishment, even when university education is free. Bereaved children lose human and social capital provided by the deceased parents, which is a crucial resource for child development (Kibachio & Mutie, 2020).

Safe environmental health conditions in housing, such as water and sanitation infrastructure, ventilation and air quality, and waste and vector management, are critical to ensuring children's rights to health, water, and sanitation, as well as an adequate standard of living. Knowledge and practice of good hygiene practices, as well as the execution of infection control measures, are all crucial in protecting children's health. These situations and behaviors are especially significant in institutional care settings for orphaned and abandoned children (OAC), when numerous children live close together (Moffa et al., 2019)

Nurse has a vital role in the care of orphans children through assessment of the children environment and conditions that may affect on their health. Health promotion and disease prevention, diagnosis and management of common illnesses, provision of basic health care services, advocacy, referrals for specialized care & services, and counseling services are roles of nurse toward orphans children. Nurses should not be a hospital-based only. It should be extended to the orphanages where orphans children live through regular visits by nurses to the orphanages. This visitation to the orphanages will give room for early detection and prevention of illnesses before they aggravate (Aladegboye et al., 2024).

Significance of the study

Globally, UNICEF statistics state that there are between 143 million and 210 million orphans worldwide. Eighteen million orphans in Africa alone. In Egypt, the number of orphans is around 1, 700, 000 orphans (Abdel-Rahman et al., 2022).

According to UNICEF and CAPMAS, 2017, Egypt has 1.7 million orphaned children. The number of children under age of 17 who are registered in orphanages is 23,779. This number is obviously understating the real number, because of the fact that numerous orphanages are not registered with the Ministry of Social Solidarity (El-Sayed et al., 2020).

Children's exposures to environmental health conditions occur in many different settings: in the home, in the playground, at school, in orphanages and in the wider environment. Their exposures to toxicants in food, air, water, and soil are greater than that of adults, they also engage in frequent hand-to-mouth behaviors and live and play close to the ground, where contaminants may be present and can lead to many health problems (Tunio et al., 2024).

Aim of the Study

The aim of the study was to assess the effect of environmental condition on health status of Orphans children.

Research questions:

- 1- Is the environmental condition affect on health status of orphans children?
- 2- What type of environmental condition that affected on health status of orphans children?
- 3- What are the health problems caused by poor environmental condition?

Subjects and Methods

Research design

Descriptive research design was utilized in this study.

Setting of the study

This study was conducted in orphanage homes (Boys Foundation for Orphans in Al-Kawther District and Women Association for Health Improving and Orphans Caring) in sohag Governorate.

Boys Foundation for Orphans is located in Al-Kawther district is a governmental institution under supervision of Ministry of Social Affairs.

The financing of the institution is governmental and nongovernmental.

It consists of 4 buildings each building includes 4 floors. Each floor includes 3 rooms and bathroom. The institution also includes central kitchen, playground, classrooms, food halls, TV room, security room beside the entry and Manager Office.

Women Association for Health Improving and Orphans caring is located in Elgomhoria street in Sohag Centers. Is a governmental institution under supervision of Ministry of Social Affairs. The financing of the institution is governmental and nongovernmental. It consists of one building includes 4 floors each floor includes 8 rooms, kitchen and bathroom. There is food halls, classroom, playing hall and reception and staff room.

Sample:

Sample technique :

A Convenience sample of orphans' children was used in this study.

Sample size:

65 orphans children from them 41 in boys foundation for Orphan home in Al-Kawther neighborhood and 24

in Women Association for Health Improving and Orphans Caring and also all children will be entered these places during six months.

Data collection tools:

Three tools was used:

Tool (I) : includes two parts :

Part (I): Include questions about Socio demographic data (age, sex, education, age of orphanage admission, years of orphanage residence, Reason for orphanage residence, Family number, Rank of child among family, Father and mother education and occupation).

Part (II): Include observational check list to assess environmental condition modified from (Abaza et al., 2004). It included items about (Site of institution, Ventilation, Lighting, Sources of drinking water, Sewage sanitation, Collecting garbage, Kitchen facilities, Drugs cupboard, Securing source of electricity, Sourcing of fire, Securing windows, Children's room, Presence of recreational activity, Presence of medical and paramedical staff, Presence of medical services). A score was assigned zero if the home condition is poor, 1 if moderate and 2 if good. The grades for each item were summed and then converted into a percent score as poor condition <50% - moderate condition 50-70% - good condition >70%.

Tool (II): Includes two parts :

Part (I): Include physical assessment sheet (general examination include Appearance, Clothing, Gait, Hair, Face Eyes, Lips, Tongue, Gums, Teeth, Nails, Skin, Muscles, Abdomen, Lower limb edema ,Signs of scares, Any disabilities, anthropometric measurement) modified from (El-Sherbeny et al., 2015)

Part (II): Practice about hand washing steps developed by (Zhang et al., 2021) and teeth brushing steps it was developed by (American Dental Association, 2019).

Scoring system for practices:

Responses to each statement were (Done) or (Not done). Grade zero was given for (Not done) and grade one was given for (Done). A total score was calculated by the sum of done practices then converted into a percent resulting in adequate practice $\geq 60\%$ and Inadequate practice $< 60\%$.

Tool (III): Includes assessment of health problems as physical include (Digestive , Urinary, Respiratory, Heart and blood vessels, Chest, Central nervous system, Skin, Eyes, Hearing, Teeth, Nutritional disease and Skin disease), social assessment such as (finds a way to compromise with peers, able to make friends with peers, responds compliantly to peer requests,...) and psychological problems such as (the child stutters, refuses to eat repeatedly, wakes up

frequently insomnia,...) among orphan children it was developed by (El-Sherbeny et al., 2015).

Scoring system of social and psychological assessment: it was developed by (El-Sherbeny et al., 2015).

Responses to each statement were (never), (sometimes) and (often). Grade one was given for (never), grade two was given for (sometimes) and grade three was given to (often). The grades for each item were summed and then converted into a percent score as low social \psychological level $< 60\%$ and high social\ psychological level $\geq 60\%$.

Validity of the study tools:

The sheet was reviewed by 5 experts, from community health nursing in Assiut University to assess and evaluate the sheet items to secure validity of this sheet . modification was done according to the direction of experts committee.

Reliability

The reliability coefficient by Cronbach alpha correlation for the test. The value was 0.93 for reported practiced, 0.825 for environmental condition.

Methodology:

Administrative Phase

An approval letter was taken from the Dean of the Faculty of Nursing at Sohag University to Sohag branch of Ministry of Social Affairs which gave an official approval to the director of Boys Foundation for Orphans and Women Association for Health Improving and Orphans Caring to conduct the study. This letter includes a brief explanation of the objectives of the study.

Operational Phase:

Preparatory phase: include reviewing of current literature in various topic using books, articles and journals.

Pilot study:

A pilot study was carried out on 10% (n=7) of orphans children to test the feasibility and clarify the study tool and to check the validity of questionnaire . According to the result of a pilot study, there was no modification in the tool applied for the study, so the pilot sample included in the study sample.

Data Collection.

Ethical considerations:

Research proposal was approved by the ethical committee in the Faculty of Nursing at Asuit University (26\12\2023) NO (1120230728). There was no risk for the study subject's further application of the research. The study was follow common ethical principles in clinical research. Oral consent was obtained from orphans children who are willing to participate in the study, after explaining the nature and purpose of the study. Study subjects were assured that the data of this

research was not be reused without second permission, Confidentiality and anonymity was assured and Study subjects had the right to refuse to participate and or withdraw from the study without any rationale at any time.

Field work:

The researcher went to the boys foundation for Orphanage homes located in Al-Kawther district and Women Association for Health Improving and Orphans Caring from previous settings in Sohag Governorate. Data collection for this study was carried out over a period of 6 months from the beginning of February to the end of July 2024 after taking the approval. The purpose of the study was clarified to the director and workers for cooperation. The researcher attended to the institutions one day

per week from 9 A.m to 12 P.m. Children were examined from the researcher, weight and height were measured for children, it take 20-30 minutes for each child for examination. three children are examined daily. Educate children how to do hand washing and teeth brushing. The researcher contacted with social workers, physician, and director to discover the children. The researchers also assess the environment for each institution.

Statistical Analysis:

Data entry and analysis was done using SPSS program version 22(statistical package for social science). Data were presented as number and percentage. Chi-square test was used to compare between qualitative variables. P-value considered statistically significant when $p < 0.05$.

Results

Table (1): Distribution of the studied children regarding to their socio-demographic characteristics in orphanage homes, at Sohag Governorate (n=65)

Personal characteristics	No. (65)	%
Age: (years)		
≤ 8	28	43.1
> 8	37	56.9
Sex:		
Male	41	63.1
Female	24	36.9
Education:		
Primary	64	98.5
Preparatory	1	1.5
Age of child during orphanage admission: (years)		
< 3	31	47.7
≥ 3	34	52.3
Years of orphanage residence:		
≤ 6	34	52.3
> 6	31	47.7
Reason for orphanage residence:		
Father died	8	12.3
Mother died	2	3.1
Poverty	18	27.7
Unknown father and mother (foundling)	23	35.4
Father and mother died	14	21.5
Family number:		
< 8	20	47.6
≥ 8	22	52.4
Rank of child among family:		
Less than 5 th	19	45.2
5 th or more	23	54.8
Mother occupation:		
Housewife	42	100.0
Mother education:		
Illiterate	40	95.2
Read and write	2	4.8
Father occupation:		
Employer	2	4.8
Farmer	18	42.9
Skilled worker	22	52.4
Father education:		
Illiterate	38	90.5
Read and writ	4	9.5

*23 children were unknown father and mother (foundling)

Table (2): Distribution of the studied children regarding to General Examinations in Orphanage homes, at Sohag Governorate (n=65), 2024

General Examinations	No. (65)	%
Appearance:		
Normal	49	75.4
Looks ill	16	24.6
Gait, Hair, Eyes, Lips, Tongue, Skin, Muscles, Abdomen, Lower limb edema and disability:		
Normal	65	100.0
Face:		
Normal	64	98.5
Abnormal	1	1.5
Gums:		
Normal	64	98.5
Abnormal	1	1.5
Teeth:		
Normal	52	80.0
Abnormal	13	20.0
Nails:		
Normal	49	75.4
Abnormal	16	24.6
Signs of old injuries scares:		
Yes	1	1.5
No	64	98.5
Signs of burn scares:		
Yes:	1	1.5
No	64	98.5
Anthropometric measurement: Weight:		
Normal:	59	90.8
Abnormal	6	9.2
Height:		
Normal:	62	95.4
Abnormal:	3	4.6
BMI:		
Normal:	56	86.2
Under weight:	3	4.6
Over weight:	4	6.2
Obese:	2	3.1
Morbid obesity:	0	0.0

Table (3): Total distribution of the studied children in relation to Physical problems in orphanage homes, at Sohag Governorate (n=65)

Physical problems *	Yes		No	
	No.	%	No.	%
Digestive system	21	32.3	44	67.7
Urinary system	8	12.3	57	87.7
Nose	2	3.1	63	96.9
Eye	6	9.2	59	90.8
Teeth	14	21.5	51	78.5
*More than one physical problem	31	47.7	34	52.3

Table (4): Distribution of the orphans children regarding to social assessment in orphanage home, at Sohag Governorate (n=65)

Social Assessment for children	Never		Sometimes		Often	
	No.	%	No.	%	No.	%
Finds a way to compromise with peers	16	24.6	30	46.2	19	29.2
Able to make friends with peers	3	4.6	34	52.3	28	43.1
Responds compliantly to peer requests	6	9.2	47	72.3	12	18.5
Initiates conversation with peers and adults	11	16.9	41	63.1	13	20.0
Assists peers independently or when asked	5	7.7	38	58.5	22	33.8
Interacts appropriately with adults	7	10.8	29	44.6	29	44.6
Listens properly during peer interactions	10	15.4	27	41.5	28	43.1
Follows direction from care providers	3	4.6	21	32.3	41	63.1
Good at sharing things with others	7	10.8	47	72.3	11	16.9
Can say sorry if he had done something wrong	11	16.9	47	72.3	7	10.8

Table (5): Total distribution of the orphans children regarding to Psychological scale assessment in orphanage home, at Sohag Governorate (n=65)

Psychological Assessment of children	Never		Sometimes		Often	
	No.	%	No.	%	No.	%
The child stutters	60	92.3	4	6.2	1	1.5
Refuses to eat repeatedly	43	66.2	21	32.3	1	1.5
Wakes up frequently, insomnia	46	70.8	17	26.2	2	3.1
Had a bad dream or nightmare that comes often	28	43.1	34	52.3	3	4.6
Is frightened, worries, anxious	34	52.3	30	46.2	1	1.5
Has difficulty to be clean (pee, poop)	58	89.2	6	9.2	1	1.5
Eats too much	18	27.7	41	63.1	6	9.2
Does not speak or very little, his language is very different from children on the same age	56	86.2	6	9.2	3	4.6
Refuses to eat certain foods	21	32.3	41	63.1	3	4.6
Has difficulty falling asleep	30	46.2	32	49.2	3	4.6
Has outbursts, have uncontrolled movements for no apparent reason	59	90.8	4	6.2	2	3.1
Complains of pain or complains about his body without obvious medical reason	51	78.5	11	16.9	3	4.6
Unable to sit still, he moves constantly	51	78.5	11	16.9	3	4.6
Refuses to leave the orphanage home	45	69.2	18	27.7	2	3.1
Is tired, discourage	53	81.5	10	15.4	2	3.1
Behavior is too aggressive, he is violent	51	78.5	12	18.5	2	3.1
Easily overwhelmed by his emotions anger, sadness	45	69.2	18	27.7	2	3.1
Does repetitive games or activities	48	73.8	15	23.1	2	3.1
Runs away or avoids sounds, images, or specific situations	42	64.6	21	32.3	2	3.1

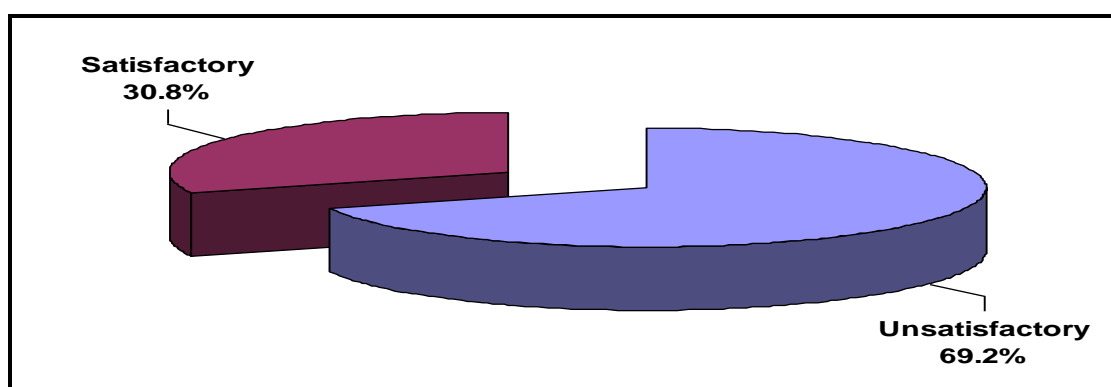
**Figure (1): Distribution of the studied children regarding their total level of practice hand washing and teeth brushing in orphanages home, at Sohag Governorate (n=65)**

Table (6): Relationship between the studied children levels of practice and their personal characteristics in Orphanage homes, at Sohag Governorate (n=65), 2024

Personal data	Practice level				P-value
	Unsatisfactory		Satisfactory		
	No.	%	No.	%	
Age: (years)					
≤ 8	18	64.3%	10	35.7%	0.452
> 8	27	73.0%	10	27.0%	
Sex:					
Male	32	78.0%	9	22.0%	0.044*
Female	13	54.2%	11	45.8%	
Age of child during orphanage admission: (years)					
< 3	20	64.5%	11	35.5%	0.432
≥ 3	25	73.5%	9	26.5%	
Years of orphanage residence:					
≤ 6	22	64.7%	12	35.3%	0.408
> 6	23	74.2%	8	25.8%	
Family number:					
< 8	13	65.0%	7	35.0%	0.216
≥ 8	18	81.8%	4	18.2%	
Rank of child among family:					
Less than 5 th	12	63.2%	7	36.8%	0.180
5th or more	19	82.6%	4	17.4%	

P value = (0.044)*

Table (7): Distribution of physical home environment for male and female orphanage homes, at Sohag Governorate (n=2)

Items	Poor		Average		Good	
	No	%	No	%	No	%
Site of institution	0	0.00	2	100.00	0	0.00
Ventilation	0	0.00	1	50.00	1	50.00
Lighting	0	0.00	1	50.00	1	50.00
Sources of drinking water	0	0.00	0	0.00	2	100.00
Sewage sanitation	0	0.00	1	50.00	1	50.00
Collecting garbage	0	0.00	1	50.00	1	50.00
Kitchen facilities	0	0.00	1	50.00	1	50.00
Drugs cupboard	0	0.00	0	0.00	2	100.00
Securing source of electricity	0	0.00	1	50.00	1	50.00
Sourcing of fire	0	0.00	1	50.00	1	50.00
Securing windows	1	50.00	0	0.00	1	50.00
Children's room	2	100.00	0	0.00	0	0.00
Presence of recreational activity	0	0.00	2	100.00	0	0.00
Presence of medical and paramedical staff	1	50.00	1	50.00	0	0.00
Presence of medical services	1	50.00	1	50.00	0	0.00

Table (8): Correlation between physical condition of Orphans children and Orphanage homes environment at Sohag Governorate

Home Orphanage Environment	Physical Condition Of Orphans Children	
	R	P-value
Physical home environment	-0.433	0.035*
Social home environment	-0.564	0.003**
Psychological home environment	0.105	0.076

P value = (0.035- 0.003**)*

Table (1): Shows the distribution of the studied children regarding to their socio-demographic characteristics in orphanage homes. It was revealed that 56.9% of the studied children their age more than 8 years old. 63.1% of them were males. 98.5% of children were primary level of education, 52.3% of their ages were during admission ≥ 3 and also 52.3% of orphanage residences were less than 6 years. Also this table represented that 35.4% of the reasons for residence were unknown father and mother. Moreover, 52.8% of family number of the studied children were ≥ 8 members. 54.8% of children rank among family were more than the 5th. 100% of the mothers occupation were housewife and 95.2% of them were illiterate. 52.4% of the fathers occupation were skilled worker and 90.5% of them were illiterate.

Table (2): States the distribution of the studied children regarding to their general examinations. It was revealed that 75.4% of the studied children were normal appearance. 100% of the studied children were normal for the gait, hair, eyes, lips, tongue, skin, abdomen and muscles. Regarding face, teeth, gums and nails were 98.5%, 80%, 98.5% and 75.4% respectively. 98.5% of children had normal for scares of old injuries and sings of scares of burn. Regarding to lower limb edema and disabilities children were normal. Also this table illustrated that 13.8% of children BMI were abnormal.

Table (3): Reports the total distribution of the studied children in relation to physical problems in orphanage home. It presented that 32.3% of physical problems among the studied children were noticed in digestive system, and 21.5% were noticed in teeth.

Table (4): Reveals the distribution of the orphans children regarding to social assessment in orphanage home. It revealed that 24.6% of social problems of the studied children observed on child finds a way to compromise with peers. While 16.9% related to the statement child initiates conversation with peers and adults and child can say sorry if he had done something wrong.

Table (5): Shows the total distribution of the orphans children regarding to Psychological scale assessment in orphanage home. It revealed that 9.2% of the studied children were suffer from eats too much, 4.6% were suffer from (bad dream or nightmare that comes often, does not speak or very little, his language is very different from children his age, refuses to eat certain foods, has difficulty falling asleep, complains of pain or complains about his body without obvious medical reason and unable to sit still, he moves constantly).

Figure (1): Illustrates that the total level of practice of the studied children in orphanage homes. It was

revealed that 69.2% of children were inadequate practice and 30.8% of their practices were adequate.

Table (6): Clears the relationship between the studied children levels of practice and their personal characteristics in orphanages homes, which it was reported that there are statistically significant differences between children level of practice and their sex (P value = 0.044). While, there are no statistically significant differences in relation to their age, age of child during orphanage admission, years of orphanage residence, family number and rank of child among family (P value = 0.452, 0.432, 0.408, 0.216 and 0.180) respectively.

Table (7): Demonstrates the distribution of physical home environment for two orphanage homes male and female. It was revealed that 100% of orphanages had poor child room, while it was average in site of location, presence of recreational activity, good condition for source of drinking water and drug cupboard.

Table (8): Represents that correlation coefficient between physical condition of orphans children and orphanage homes environment. It revealed that there was negative correlation coefficient between physical condition of orphans children and physical home environment and their social home environment with statistical significant difference ($r = -0.433$ at $p = 0.035$, $r = -0.564$ at $p = 0.003$ respectively). However, the correlation between physical and psychological home orphanage environment it was observed that positive statistically insignificant difference ($r = 0.105$ at $p = 0.076$).

Discussion

Children are the future of the nation. Parents play an irreplaceable role in a child's physical, mental, and emotional well-being; unfortunately, not all children are brought up by their parents. Most of these orphan children are placed in orphanages homes. (Faust & Manning, 2021)

The aim of the study is to assess the effect of environmental condition on health status of orphans children.

As regard to the socio-demographic data, The present study revealed that more than half of the studied children aged more than 8 years, this result is consistent with Emmanuel & Maheswari, (2017) who mentioned that the maximum number of orphanages belongs to the age group of 9 years more than 8 years.

The current study found that more than two thirds of the sample was males. This study is compatible with Ibrahim et al., (2019) who mentioned that more than two thirds of the sample were boys and this study disagree with Aziz et al., (2023) who reported that more than two thirds of the sample were females.

Also, this study showed that the majority of the studied children were in primary education. This study is supported by **Aziz et al., (2023)** who stated that the majority of the sample were in primary education and this study opposed to **Khalid et al., (2024)** who mentioned that more than half of the sample were in preparatory education.

Concerning to children age on orphanage admission, the current study reported that more than half of the studied children aged more than 3 years on orphanage home admission. This study disagree with **Osamy et al., (2023)** who presented that more than two thirds of children were admitted to orphanages at infancy stage.

Regarding the duration of orphanage stay, the current study reported that more than half of the studied children stayed in orphanage home less 6 years in duration. This study is agree with **Khalid et al., (2024)** who mentioned that more than half of the sample stayed in orphanage less than 6 years .

This finding disagrees with **Osamy et al., (2023)** they mentioned that more than two thirds of children stayed on orphanage more than 5 years.

Also, this study showed that the majority of the studied children admitted to orphanage home because the reason was unknown father and mother (laqet). This study is similar to **Osamy et al., (2023)** they reported that the majority of children admitted to orphanage home due to unknown parents (laqet). These findings incompatible with **Khalid et al., (2024)** who mentioned that the majority of children admitted to orphanage due to father death.

This study showed that more than half of the studied children had family number more than 8 members. Also this study reported that the children rank among family above the fifth were more than half of the sample. From researchers opinion, this finding suggests that larger families, often associated with lower socioeconomic status, are more likely to rely on institutional care for some children. The high family rank might indicate limited resources for children.

As regard Parents Characteristics all mothers of the studied children were housewives, and the vast majority of them were illiterate. Mostly, fathers were skilled workers and the majority was illiterate. From researcher opinion, these parental characteristics reflect the socioeconomic challenges faced by the families of orphaned children, emphasizing the need for systemic support.

Regarding the general examination findings provide valuable insights into the health status and living conditions of the studied children in Sohag Governorate the current study results revealed that, concerning overall appearance and clothing more than three quarters of children had a normal appearance. From researchers opinion, these findings suggest that

the children received adequate care in terms of hygiene and presentation. These results align with **Khalid et al. (2024)**, who noted similar trends in orphanages, with more than three quarters of children having a satisfactory appearance.

As regard **physical attributes** the study found that regarding assessment during 6 months physical attributes such as gait, hair, eyes, lips, tongue, skin, abdomen, and muscles were normal in all children. From researchers opinion, this reflects the effectiveness of the orphanage's basic health and hygiene protocols, ensuring that visible health markers remain within normal ranges. The absence of any abnormalities in these areas is a positive indicator of the children's general well-being.

Regarding facial and dental health the majority of the children had normal facial features and gums, dental health issues were observed in only one fifth of the children. This findings clears that poor dental health care. Poor dental health is a common issue in institutionalized children, this result is online with **Aziz et al. (2023)**, who found similar patterns in orphanages, linking them to limited access to routine dental check-ups and inadequate hygiene education.

As regard **Nail condition** nearly one quarter of the children had abnormal nails, suggesting potential deficiencies in hygiene practices or underlying nutritional issues. Nail abnormalities in children can often signal poor hygiene or vitamin deficiencies, as highlighted by **Ibrahiem et al. (2019)**, who emphasized that the need for regular monitoring of such indicators in orphanages.

Regarding edema and physical injuries, The current study indicated that the absence of lower limb edema and the minimal presence of scars from old injuries or burns suggest a low prevalence of severe physical neglect or abuse among the studied children. These findings are reassuring and indicated that the orphanage environment provides physical safety and care. Similar findings were reported by **Khalid et al. (2024)**, who observed a low incidence of scars and injuries in their study of orphaned children.

As regard **Disability** the current study results demonstrated the absence of disabilities among the children further highlights the general good health of the population studied. This is consistent with **Osamy et al. (2023)**, who noted that institutionalized children often receive adequate medical attention to address physical impairments at an early stage and prevent further related disabilities.

As regard **anthropometric measurements** the current study indicated that more than half of the studied children have normal weight, height and BMI. This study is online with **Aziz et al. (2023)** who noted that more than half of the sample was normal in weight, height and BMI. Also this study in contrast

with **Farid et al (2024)** who conducted a study about Malnutrition and associated risk factors in orphanages in Punjab, Pakistan: an analytical study and mentioned that more than half of the study were abnormal in BMI.

As regard the studied orphans children practices about hand washing and teeth brushing, the current study results revealed that all children successfully completed basic hand washing steps, including wetting hands with water, applying soap, rubbing hands palm to palm, and rinsing hands with water. From researcher opinion, this is a positive finding, indicating that basic hand hygiene practice is effectively instilled. These in the same results with **Khalid et al. (2024)**, who similarly reported high compliance with basic hand washing steps among orphaned children, emphasizing the role of structured hygiene education.

While none of the studied orphans children performed advanced hand washing techniques, such as rubbing the back of fingers to opposing palms with fingers interlocked or using a towel to turn off the faucet. Additionally, the majority of children did not perform the step of rubbing the right palm over the left dorsum with interlaced fingers. These gaps highlight a limited understanding of proper hand washing techniques beyond basic steps, potentially increasing the risk of infection transmission through inadequately cleaned areas of the hands. These findings are agreement with **Aziz et al. (2023)**, who observed similar deficiencies in advanced hand washing practices among orphaned children, from the researcher's point of view this may be related to inadequate training and lack of caregiver reinforcement as contributing factors. Also, **Moffa et al., (2019)** who carried out a systematic scoping review of hygiene behaviors and environmental health conditions in institutional care settings for orphaned and abandoned children and reported deficiencies in advanced hand washing practices among orphaned children.

As regard **Teeth brushing practices** near to three quarters of children correctly placed their toothbrush at a 45-degree angle to the gums, and more than three quarters of children gently moved the brush back and forth in short strokes. Furthermore, Two thirds of children brushed the outer, inner, and chewing surfaces of their teeth. These findings reflect moderate adherence to fundamental teeth brushing techniques, which is encouraging but leaves room for improvement.

Regarding neglected areas in teeth brush: the vast majority of children failed to clean the tongue nearly all and the inside surfaces of the front teeth using vertical up-and-down strokes. These neglected areas are critical for maintaining oral hygiene, as they are prone to bacterial buildup and halitosis. Similar gaps

in oral hygiene practices were observed by **Ibrahiem et al., (2019)**, who linked such deficiencies to limited awareness and lack of structured oral hygiene education in orphanages.

Regarding overall oral hygiene the results indicate that children have a basic understanding of brushing techniques, critical steps are often omitted. These results agree with **Khalid et al. (2024)**, who emphasized the importance of comprehensive oral hygiene programs tailored to children in institutional settings. **As regard gender disparities in hygiene practices** gender differences in hygiene practices have been observed in similar studies. **Aziz et al., (2023)** noted that female children generally exhibit better compliance with hygiene routines compared to males, possibly due to greater caregiver attention and societal expectations regarding grooming. Also, **Moffa et al., (2019)** who reported that female children generally exhibit better compliance with hygiene routines compared to males, possibly due to greater caregiver attention and societal expectations regarding grooming.

As regard the studied orphan children total level of practice the current study results demonstrated that more than two thirds of the studied children had inadequate hygiene practices, with less than one third demonstrating adequate levels. These results highlight significant deficiencies in the overall hygiene behaviors of the children in the orphanages.

The current study online with the findings of **Aziz et al., (2023)**, reported that more than two thirds of the participants had unsatisfactory hygiene levels. This study attributed that the unsatisfactory practices to a lack of comprehensive hygiene education and insufficient caregiver involvement. Similarly, **Ibrahiem et al. (2019) & Moffa et al., (2019)** found that inadequate hygiene practices were common in institutional settings, emphasizing the need for structured educational interventions.

In contrast, some studies conducted with **Khalid et al. (2024)**, who reported that lower percentage of unsatisfactory hygiene practices (50%), which may reflect differences in orphanage management, resources, or caregiver training between regions.

Regarding physical problems among studied children. The findings indicated that most children had no significant health issues, certain physical problems were relatively common, with digestive system and teeth problems being the most frequent.

Concerning the digestive system problems the current study found that digestive system problems were the most prevalent physical issue, affecting nearly one third of the children. This high prevalence aligns with findings by **Aziz et al. (2023)**, who reported that gastrointestinal issues are common among institutionalized children due to factors such as

inadequate diets, poor hygiene, and limited medical care. Digestive problems may also stem from stress or psychological factors, which are prevalent among children in orphanages, as noted by **Khalid et al. (2024)**.

Focusing on teeth problems the current study results revealed that teeth problems were the second most common physical issue, affecting more than one fifth of the children. This finding is consistent with **Ibrahiem et al. (2019)**, who highlighted poor oral hygiene and lack of regular dental check-ups as major contributors to dental issues in orphanages. From the researchers' point of view, the deficiencies in teeth brushing practices, such as failure to clean the tongue and inner surfaces of teeth, likely contribute to the high prevalence of dental problems.

Other reported issues included eye problems and urinary system problems. These issues are less prevalent but still significant: Eye Problems may indicate a lack of regular vision screening or inadequate lighting and study conditions in the orphanage. Studies such as **Khalid et al. (2024)** also found that untreated refractive errors and eye strain are common among institutionalized children.

As regard urinary system problems may be linked to insufficient hydration, infections, or stress-related factors. No cases of heart and blood vessel problems, chest issues, or chronic diseases were reported, indicating an absence of severe health conditions among the studied children. Similarly, no cases of central nervous system problems or skin diseases were observed, reflecting an overall satisfactory baseline health condition.

Multiple Physical Problems nearly half of the children reported having more than one physical problem. This highlights the compounding nature of health issues, where children with one health concern are more likely to experience additional problems. Such overlaps are common in institutional settings, as noted by **Osamy et al. (2023)**, who emphasized that inadequate care could lead to multiple health issues.

The prevalence of digestive and dental problems observed in this study is consistent with global trends reported in similar institutional settings such as **Ibrahiem et al. (2019) & Aziz et al. (2023)** have documented that poor nutrition and limited access to healthcare are primary contributors to these issues. However, the absence of chronic and severe conditions, such as heart or nervous system problems, suggests that the children receive basic medical care sufficient to prevent serious illnesses. Also, **El-sherbeny et al., (2015)** who studied Health Problems among orphan Children in Dakahlia Governorate and reported poor nutrition and limited access to healthcare are primary contributors to these issues.

As regard relationship between the studied children level of reported practice and their personal characteristics the current study results revealed that the varied associations between these variables, with sex being the only personal characteristic significantly related to the children's level of practice. A statistically significant difference in relationship was observed between the children's sex and their practice level indicating that female children demonstrated a higher rate of adequate levels of practice compared to male children. From researchers' point of view female orphanage home receives more care and attention than the boys' orphanage home, and the girls are more committed to personal hygiene.

This result is in the same line with **Osamy et al. (2023)** who stated that there was statistically significant difference between the children's sex and their practice level. On the other hand, **Aziz et al. (2023)** who reported that there was statistically insignificant relationship was observed between the children's sex and their practice level.

Regarding to environmental condition, investigating the physical home environment through observation, the present study result showed that in two orphanage homes had poor child room, while it was average in site of location and presence of recreational activity and good condition for source of drinking water and drug cupboard. Half of orphanages scored average in lighting, ventilation, sewage sanitation, collecting garbage, kitchen facilities, securing windows, presence of medical and paramedical staff and presence of medical services. Also half of orphanages were poor in Securing windows, presence of medical and paramedical staff and presence of medical services.

The results of the current study showed that there was negative correlations with significance between physical condition of orphans children and physical home environment and social home environment ($r = -0.433$ at $p = 0.035$, $r = -0.564$ at $p = 0.003$ respectively). However, the correlation between physical condition of orphan children and psychological home orphanage environment showed statistically insignificant correlation ($r = 0.105$ at $p = 0.076$). From researchers' point of view the better the social and psychological environment, as well as the healthier the living environment, the fewer health problems children will have, and vice versa.

This finding was in agreement with **Fathy, (2010)** mentioned that there was significant negative correlations were detected between physical condition of orphan children and physical home environment and social home environment and statistically insignificant correlation was found

between physical condition of orphan children and psychological home environment.

Conclusions:

The present study illustrated that most of orphans children had physical, social and psychological problems specially males. Also, they had inadequate reported practice about hand washing and teeth brushing.

Moreover, the environment had a strong effect of orphans children health specially in male orphanages as well as their reported practice highlights the importance of holistic support and comprehension resources.

Recommendations:

Based on the findings of the study, the researcher recommended the following:

- Activating the role of educational sessions in raising awareness about children hygiene (hand washing and teeth brushing).
- Conducting awareness campaigns throughout the governorate, about orphans children and their rights.
- Enhancing environmental health where orphans children live.

References:

- Abdel-Rahman, R., Fouda, L., Ebrahim, H., Abo Aisha, N., & Soliman, F. (2022):** Effect of Developing Protocol of Care on Satisfaction of Bio-psychosocial Needs of Institutionalized School Age Orphans Children. *Tanta Scientific Nursing Journal*, 26(3), 166-188.
- Abaza, H., Bisset, R., & Sadler, B. (2004):** Environmental impact assessment and strategic environmental assessment: towards an integrated approach. *UNEP/Earthprint*.
- American Dental Association (ADA) (2019):** Brushing Your Teeth. Accessed on 2 October 2021. Available at <https://www.mouthhealthy.org/en/az-topics/b/brushing-your-teeth>.
- Aziz, F., Nasrullah, H., Tayyab, R., Mustehsan, Z. H., Noreen, I., Hannan, H., & Batool, N. (2023):** Assessment of Physical and Mental Health of Children Living in Orphanages in Islamabad-A Cross-Sectional Survey. *Pakistan Journal of Public Health*, 13(2), 88-93.
- Aladegboye, M., Adediji, A., Komolafe, A., Olowokere, A., & Irinoye, O. (2024):** Nurses' Involvement in the Care of Orphans and Vulnerable Children in a Southwestern City in Nigeria: A Qualitative Study from Nurses and Caregivers' Perspectives. *Residential Treatment for Children & Youth*, 41(1), 113-133.
- Clark, H., Coll-Seck, A., Banerjee, A., Peterson, S., Dalglish, S., Ameratunga, S., & Costello, A. (2020):** A future for the world's children? A WHO–UNICEF–Lancet Commission. *The Lancet*, 395(10224), 605-658.
- El-Sayed, D., Afifi, H., & Elfeshawy, R. (2020):** Evidence Based Program Regarding Life Saving Interventions in Two Orphanage Houses in Benha City. *Egyptian Journal of Health Care*, 11(2), 427-447.
- El-Sherbeny, E., Ali, S., Elsharkawy, S., Elsayed, S., & Elezaby, H. (2015):** Health Problems among orphan Children in Dakahlia Governorate. *Zagazig Nursing Journal*, 11(2), 111-126.
- Emmanuel, A., & Maheswari, S. (2017):** A study to assess the physical health status of children aged between 6–12 years in selected orphanages of Udupi district during 2008 to 2010. *Int J Bioassays*, 6(01), 5214-5217.
- Fathy Mansour, Hedy. (2010):** Effect of orphanage home environment on health status among school age children in kalyubia governorate. <https://www.researchgate.net/publication/344805353>.
- Faust, K., & Manning, S. (2021):** Them before us: why we need a global children's rights movement. *Post Hill Press Book* ISBN 978-1-64293-596-7.
- Farid, M., Rehman, A., Khaliq, A., Ali, N., & Tareq, A. (2024):** Malnutrition and associated risk factors in orphanages in Punjab, Pakistan: an analytical study. *BMJ Nutrition, Prevention & Health*, 7(2), e000974.
- Ibrahiem, F.Hossein, Y., Amein, N., & Refaei, S. A. (2019):** Assessment of Nutritional Status of Children Living in Orphanage Institutions at Minia and Samlout Cities. *Minia Scientific Nursing Journal*, 6(1), 190-197.
- Jamuna, M., & Vishwanath, J. (2023):** Analysis of the Relationship Between Clean and Healthy Environment and Human Health in India. *Geo.Eye*, 12(2), 14-19.
- Kibachio, D., & Mutie, P. (2020):** Challenges affecting orphans and vulnerable children (OVCS) in Embu County. *International Journal of Sociology*, 2(1), 18-36.
- Khalid A., Sadek, A., & Fathy M. (2024):** Health Educational Program for Orphanages Children regarding Prevention of Nutritional Diseases. *Journal of Nursing Science Benha University*, 5(1), 75-85.
- Mahanta, P., Das Thakuria, K., Goswami, P., Kalita, C., Knower, R., Rajbangshi, M., & Majumder, P. (2022):** Evaluation of physical and mental health status of orphan children living in orphanages in Sonitpur district of Assam: a cross-sectional study. *BMC pediatrics*, 22(1), 1-7.

- Moffa, M., Cronk, R., Fejfar, D., Dancausse, S., Padilla, L., & Bartram, J. (2019):** A systematic scoping review of hygiene behaviors and environmental health conditions in institutional care settings for orphaned and abandoned children. *The Science of the total environment*, 658, 1161–1174. <https://doi.org/10.1016/j.scitotenv.2018.12.286>.
- Osamy Z.H., Mahmoud E, S., & Elias, A. (2023):** Psychological challenges among Adolescents at Orphanages. *Egyptian Journal of Health Care*, 14(2), 234-247.
- Singh, A., & Sekher, T. (2021):** Orphans and their living arrangement in Indian households: Understanding their educational and nutritional status. *Children and Youth Services Review*, 121, 105868.
- Tunio, A., Ahmed, J., Shaikh, M. Z., Channa, N., Hussain, S., & Baro, E. (2024):** Impact of hand hygiene interventions on handwashing practices and microbial risk: A study in an orphanage-based school in Pakistan. *American Journal of Infection Control*.
- Zhang, Y., Xue, T., Liu, Z., Chen, W., & Vanrumste, B. (2021):** Detecting hand washing activity among activities of daily living and classification of WHO hand washing techniques using wearable devices and machine learning algorithms. *Healthcare technology letters*, 8(6), 148-158.

This is an open access article under
Creative Commons by Attribution Non-Commercial (CC BY-NC 3.0)
(<https://creativecommons.org/licenses/by-nc/3.0/>)