



Post COVID Hygiene Management Competencies Required by Childcare-Givers in Day Care Centres in Delta State, Nigeria

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Abstract

The study investigated the post COVID hygiene management competencies required by childcare-givers in day care centres in Delta State using descriptive survey research design. Two research questions were answered while two null hypotheses were tested. Multistage random sampling technique was used to select 395 respondents, comprising 256 caregivers in day care centres and 139 senior nurses in public health centres in the state. The instrument used for data collection was a 32-item structured questionnaire. The response option for the questionnaire was 4-point rating scale of Highly Required (HR); Averagely Required (AR); Less Required (LR) and Not Required (NR) with corresponding values of 4, 3, 2 and 1 respectively. Three experts validated the instrument and Cronbach Alpha reliability technique was used to ascertain the reliability of the instrument, which yielded a coefficient of 0.931. Data were collected by the researcher with the help of ten well trained researcher assistants. Out of the 395 copies of the questionnaire administered, 378 copies were completely filled and returned indicating 95.7% return rate. Data collected were analysed using descriptive statistics such as mean (\bar{x}), standard deviation and t-test statistics. The results of the study identified 18 post COVID child feeding competencies and 14 post COVID child hygiene competencies required by caregivers in day care centres in Delta State. In addition, the result of the hypotheses tested revealed no significant ($p < 0.05$) difference in the mean ratings of caregivers and senior nurses on post COVID child feeding and hygiene competencies required by the caregivers in day care centres in Delta State. The study among others recommends that caregivers in day care centres in the state and Nigeria in general should be trained and made to practice strictly the identified post COVID hygiene management competencies for safety of the children.

KEYWORDS: COVID-19, CHILD, FOOD HYGIENE, COMPETENCIES, CAREGIVERS, DAY CARE.

Introduction

A child is a human being between the stages of birth and puberty or between the developmental period of infancy and puberty (UNECE, 2014). Early childhood follows the infancy stage and begins with toddlerhood when the child begins speaking or taking steps independently. The toddlerhood ends around age 3 when the child becomes less dependent on parental assistance for basic needs. Early childhood continues approximately until the age of 6 or 7. Lansdown and Vaghri (2022) stated that every human being under the age of 18 years must be recognised as a child, without discrimination based on any attribute of the child or parent. A child with consistent caring attention is generally better nourished, less likely to be sick and learn better than a child who does not receive such care. The care, attention and respect to be given to the child are specified by the rights of the child. The report of NERDC/UNICEF (2013) showed that rights of Nigerian child are clustered into four main domains which include: survival rights, protection rights, participation rights and development rights. Therefore for the child to survive and steadily develop, someone or caregiver has to care for him/her to reach his/her full potential and development.

In day-care centres, caregivers are trained expert in child caring who has a significant personal relationship with, and provides a broad range of assistance for the child. These individuals may be primary or secondary caregivers and live with, or separately from, the person receiving care (FCANCC, 2018). According to American Medical Association (2018), caregivers provide a range of duties; the majority of caregivers provide high or medium-level care involving activities of daily living and/or instrumental activities of daily living situations, such as bathing, feeding, cleaning among other cares to the child. The U.S Department of Veterans Affairs (2022) stated that caregivers look after the child in her custody for physical health and well-being. The services of children caregivers are mostly rendered in day-care centres.

Day-care centres also called day nursery, nursery schools, or crèches are centres that provides supervision and care of infants and young children during the daytime, particularly so that their parents can hold jobs (Jewett, 2023). Day-care centers provide care for groups of children, often placed in classrooms by age. Childcare services in day-care centers, nursery and pre-primary schools are more formalized than those at home. The report of Office of Child Care (2023) showed that families choose childcare centers for a variety of reasons which among others include that families may like their children to be cared for in groups with other children of the same age, they may like the structured, classroom-like environment a childcare center provides, they appreciate that day-care center may offer a wider variety of equipment, supplies, and activities and they appreciate having many adults present to care for children.

It is pertinent to note that the operations of day-care centres across the globe were also halted and badly affected by the outbreak of COVID-19. Formalized day-cares have number of children of pre-school ages under their care who may be at risk of being infected by the deadly virus. Armellino, et al (2020) noted that COVID-19 is highly contagious and so any residual contamination, no matter how small, can pose a threat to healthcare workers and patients. The symptoms of COVID-19 range from mild (or no symptoms) to severe illness with associated dry cough, sneeze and difficulty in breathing which may appear 2-14 days after exposure to the virus. Other symptoms include: fever, tiredness, pains, headache, diarrhea, sore throat, loss of smell and taste, pain in the chest and difficulty in breathing which may result to death in extreme cases. The report of United Nations (2020) highlighted the best ways to protect against the spread of COVID-19 to include staying home as much as possible and avoid close contact

with others, wearing face masks, clean and disinfect frequently touched surfaces, washing hands often with soap and running water for 20 seconds, use of 60% alcohol-based hand sanitizer, maintaining good nutrition and improved hygiene. Day-care center programmes are often required to be licensed by their state or territory. This means that they must follow a set of basic health and safety requirements and monitored to make sure they are following the requirements (Office of Child Care, 2023).

Childcare services make provisions for optimal growth and development in childhood development through disease prevention, good health, food and nutrition. FAO and WHO (2023) reported that to ensure effective care for the children in day-care centres in post COVID, food storage facilities should be designed and constructed to facilitate adequate maintenance and cleaning, avoid contamination, including allergen cross-contact, during storage; and where necessary, provide an environment which minimizes the deterioration of food (such as by temperature and humidity control). Kaur, et al, (2022) emphasized food hygiene as the practices that prevent microbial or virus contamination of food at all points along the chain from farm to table, which should be strictly adhere to in day-care centres to avoid outbreak. The caregivers therefore require certain hygiene management competencies to render effective care giving services in the day-care centres.

Competency is a standardized skill or set of skills for an individual to properly perform a specific job (Kren-Ikidi, 2020). According to Encarta (2017), competency is the ability to do something well, measured against a standard especially ability acquired through experience or training. In the opinion of Torres (2022) competencies are knowledge, behaviours, attitudes and even skills that lead to the ability to do something successfully or efficiently. Hence, safety and hygiene competencies are very sensitive and needed by the caregivers to safeguard the child against injury and any form of danger. The Nigerian Federal Ministry of Health (2014) reported that poor nutrition among the children results not only from a lack of food but also from inappropriate feeding and poor food hygiene practices by caregivers. It was based on this background that this study examined post COVID hygiene management competencies required by childcare-givers in day-care centres with empirical evidence from Delta State, Nigeria.

Purpose of the Study

The broad purpose of the study was to examine post COVID hygiene management competencies required by childcare-Givers in day care centres in Delta State. Specifically, the study identified:

- i. Post COVID child feeding competencies required by caregivers in day care centres in Delta State.
- ii. Post COVID child hygiene competencies required by caregivers in day care centres in Delta State.

Research Questions

In line with the specific purposes, the following research questions were answered by the study:

- i. What are post COVID child feeding competencies required by caregivers in day care centres in Delta State?
- ii. What are post COVID child hygiene competencies required by caregivers in day care centres in Delta State?

Research Hypotheses

H0₁: There is no significant difference in the mean ratings of caregivers and senior nurses on post COVID child feeding competencies required by the caregivers in day care centres in Delta State.

H0₂: There is no significant difference in the mean ratings of caregivers and senior nurses on post COVID child hygiene competencies required by the caregivers in day care centres in Delta State.

Methodology

The study was carried out in Delta State, South-south Nigeria. Two research questions were answered while two hypotheses were tested at 0.05 level of significance. Descriptive survey research design was adopted in carrying out the study. Multistage random sampling technique was used to select 395 respondents from which data were collected. The first stage of the sampling was purposive selection of four major towns/cities in Delta State which are Asaba, Agbor, Warri and Sapele. The reason for the purposive selection of the four towns/cities was due to high concentration of day care centres and nurses in the cities. At the second stage of the sampling, all the 256 caregivers in all the 68 registered day care centres and all the 139 senior nurses in public health facilities in the four cities/towns were selected totalling 395 respondents for the study; comprising 256 caregivers in day care centres and 139 senior nurses in public health centres.

The instrument used for data collection was a well structured questionnaire developed by the researcher and structured into three sections. Section one of the questionnaire was designed to collect personal data of the respondents, that is, their location, status as either caregivers or senior nurses. Section two was structured to elicit the required data on child feeding competencies required by the caregivers in day care centres. Section three of the questionnaire was made to gather data on child hygiene competencies required by the caregivers in day care centres. The response option for sections two and three of the questionnaire was 4-point rating scale of Highly Required (HR); Averagely Required (AR); Less Required (LR) and Not Required (NR) with corresponding values of 4, 3, 2 and 1 respectively. Three experts who include two caregivers in day care centres and one senior nurse in Benin City, Edo State, validated the instrument. The reliability of the instruments was ascertained using Cronbach Alpha reliability technique which yielded a reliability coefficient of 0.931 implying high reliability of the research instrument.

The researcher with the help of ten well-trained researcher assistants who joined the research to ensure quality data collection collected data. The research assistants were engaged in administration and collection of the questionnaire from the respondents. Out of the 395 copies of the questionnaire administered, 378 copies were completely filled and returned indicating 95.7% return rate. Data collected were analysed using descriptive statistics such as mean (\bar{x}), standard deviation and t-test statistics. In taking decision on the research questions, a criterion reference point value of 2.50 was used to interpret the results as "Required" when the mean value was 2.50 and above or "Not Required" when the mean value was less than 2.50. For the hypotheses tested, the null hypothesis of no significant difference was accepted when the t-calculated (t-cal) value was less than the t-table (t-tab) value of 1.96 at 0.05 level of significance. On the other hand, the hypothesis of no significant difference was rejected when the t-calculated (t-cal) value was greater than the t-table (t-tab) value of 1.96 at 0.05 level of significance.

Results and Interpretation

Research Question One

What are post COVID child feeding competencies required by caregivers in day care centres in Delta State?

Table1 Mean ratings of the post COVID child feeding competencies required by caregivers in day care centres (n = 378)

SN	Post COVID child feeding competencies required by caregivers:	\bar{X}	SD
1	Possession of basic idea of nutrition.	3.66	0.52
2	Ability to adequately advise parents on the type of food preparation method to give their children	3.38	0.48
3	Feeding children the right quality of food	3.59	0.52
4	Ability to feed children the right food on time	3.62	0.49
5	Serving children food rich in vitamins and minerals	3.48	0.50
6	Caregivers should be able to feed children to avoid playing while having their meals	3.72	0.44
7	Wash children eating wares immediately after eating	3.68	0.47
8	Ability to properly sterilize children's feeding utensils	3.56	0.51
9	Keeping children's feeding utensils properly when not used	3.60	0.55
10	Good knowledge of constituents of a balanced meal	3.73	0.49
11	Serving children warm food instead of too hot or too cold foods	3.54	0.47
12	Ability to serve children the right quantity of food by age	3.65	0.55
13	Ability to show affection while feeding the children	3.74	0.46
14	Ability to help older children feed themselves	3.56	0.54
15	Knowledge of proper positioning of children during feeding	3.67	0.50
16	Facing the children at their eyes levels when feeding them	3.69	0.46
17	Proper handling of children food to avoid contamination	3.40	0.45
18	Ability to avoid clustering of children when having their meals.	3.55	0.69
Cluster Mean		3.60	0.48

Notes: \bar{X} = mean; SD = standard deviation; n = number of respondents.

The data presented in Table 1 above showed that the mean ratings of the respondents on the 18 items ranged from 3.38 to 3.74 which are all greater than the cut-off point value of 2.50 on 4-point rating scale. This indicated that the 18 identified post COVID child feeding competencies are all required by caregivers in day care centres in Delta State. The overall mean cluster of 3.60 showed that the feeding competency items are highly rated by the respondents while the standard deviation values that ranged from 0.44 to 0.69 indicates that the responses of the respondents are close to one another and the mean.

Research Question Two

What are post COVID child hygiene competencies required by caregivers in day care centres in Delta State?

Table 2 Mean ratings of post COVID child hygiene competencies required by caregivers in day care centres (n = 378)

SN	Post COVID child hygiene competencies required by caregivers:	\bar{X}	SD
1	Use hygienic toiletries / handkerchief / tissue paper to clean the children's nose	3.52	0.54
2	Thorough washing and drying hands before feeding the children	3.61	0.75
3	Ability to know how to store food and water to avoid contamination	3.50	0.68
4	Ability to separately keep different children food items to avoid mixed up with each other	3.53	0.50
5	Avoiding coughing/sneezing into children's food	3.78	0.53
6	Ability to ensure that children's toilet facilities are clean	3.57	0.65
7	Regularly cleaning children's toys and playing equipment	3.64	0.58
8	Preventing children from eating food that has bones	3.53	0.71
9	Ability to prevent children from sharing utensils like spoons	3.46	0.59
10	Preventing children from picking food items that have dropped on the floor	3.71	0.48
11	Preventing children from using utensils that have dropped on the floor without washing	3.52	0.55
12	Ability to teach children how to wash their hands after using the toilet	3.48	0.54
13	Providing children with protective clothing for messy activities	3.74	0.37
14	Ability to handle children's food to avoid being cold	3.57	0.49
Cluster Mean		3.58	0.54

Notes: \bar{X} = mean; SD = standard deviation; n = number of respondents.

The data presented in Table 2 above revealed that the mean ratings of the respondents on the 14 items ranged from 3.46 to 3.78 which are all greater than the cut-off point value of 2.50 on 4-point rating scale. This indicated that the 14 identified post COVID hygiene feeding competencies are all required by caregivers in day care centres in Delta State. The overall mean cluster of 3.58 revealed that the hygiene competency items are highly rated by the respondents while the standard deviation values that ranged from 0.37 to 0.75 indicates that the responses of the respondents are close to one another and the mean.

Testing of Hypotheses

Hypothesis One

There is no significant difference in the mean ratings of caregivers and senior nurses on post COVID child feeding competencies required by the caregivers in day care centres in Delta State.

Table 3 Test of significant difference in the mean ratings of caregivers and senior nurses on post COVID child feeding competencies required by the caregivers in day care centres

Groups	\bar{X}	SD	N	DF	Std. Error	t-Cal	t-Critical	Level of Sig.	Decision
Caregivers	3.62	0.50	243	376	0.030	0.42	1.96	0.05	NS
Senior nurses	3.58	0.56	135						

Note NS = Not Significant at 0.05

The results in Table 3 on t-test statistics showed that the t-calculated (t-cal) value of 0.42 is less than the t-table (t-tab) value of 1.96 at 376 degree of freedom. This implies that there was no significant ($p < 0.05$) difference between the mean ratings of caregivers and senior nurses on post COVID child feeding competencies required by the caregivers in day care centres in Delta State. Therefore, the null hypothesis of no significant difference in the mean ratings of caregivers and senior nurses is accepted in hypothesis one.

Hypothesis Two

There is no significant difference in the mean ratings of caregivers and senior nurses on post COVID child hygiene competencies required by the caregivers in day care centres in Delta State.

Table 4 Test of significant difference in the mean ratings of caregivers and senior nurses on post COVID child hygiene competencies required by the caregivers in day care centres

Groups	\bar{X}	SD	N	DF	Std. Error	t-Cal	t-Critical	Level of Sig.	Decision
Caregivers	3.51	0.62	243	376	0.063	1.99	1.96	0.05	S*
Senior nurses	3.65	0.48	135						

Note S* = Significant at 0.05

The results in Table 4 on t-test statistics revealed that the t-calculated (t-cal) value of 1.99 is greater than the t-table (t-tab) value of 1.96 at 376 degree of freedom. This indicates that there was significant ($p < 0.05$) difference between the mean ratings of caregivers and senior nurses on post COVID hygiene competencies required by the caregivers in day care centres in Delta State. Hence, the null hypothesis of no significant difference in the mean ratings of caregivers and senior nurses is rejected in hypothesis two.

Discussion of Findings

This study on research question one identified post COVID child feeding competencies required by caregivers in day care centres to include: possession of basic idea of nutrition, ability to adequately advise parents on the type of food preparation method to give their children, feeding children the right quality of food, ability to feed children the right food on time, serving children food rich in vitamins and minerals, caregivers should be able to feed children to avoid playing while having their meals, washing children eating wares immediately after eating, ability to properly sterilize children's feeding utensils, keeping children's feeding utensils properly when not used and good knowledge of constituents of a balanced meal among others. The findings agreed with that of Butte, et al (2020) who found that caregivers interactions and communication with children during feeding influences the infant's ability to progress in feeding skills and consume a nutritionally adequate diet. Similarly, Carruth and Skinner (2012) discovered that caregivers must possess the ability to instruct children on the following: the proper use of utensils, the proper handling of food, the ability to remove food from a spoon with one's lips without spilling, the ability to self-feed with a spoon without spilling, the ability

to drink from a sippy cup or a regular cup without assistance, the ability to ensure that children are feeding utensils properly, and the provision of appropriate food for their age group.

This study's research question two identified the following post-COVID hygiene competencies that day care workers must have: the ability to use hygienic toiletries, handkerchiefs, or tissue paper to clean children's noses, the ability to thoroughly wash and dry hands before feeding children, the ability to store food and water to avoid contamination and the ability to separate children's food items. Food Standard Agency (2023) reported that there are basic food safety and hygiene measures against the growth and spread of bacteria, these are: ensuring food areas are clean and good standards of personal hygiene are maintained, cooking foods thoroughly and keeping foods at the right temperature.

Bacteria can spread from raw food, in particular meat, to food that has already been cooked or is eaten raw, such as salads. To ensure hygienic food preparation for children therefore, it is also very important that food is stored in the right place and at the correct temperature. The results of this study also supported the National Health and Safety Performance Standards report (2022), advised the following: the use of a clean and washable apron to prevent the cross contamination of bacteria from clothing to food and vice versa, the avoidance of food that has fallen to the floor and the aforementioned.

Conclusion

The study examined the post COVID hygiene management competencies required by childcare-givers in day care centres in Delta State. From the data collected and analysed, the study identified 18 post COVID child feeding competencies and 14 post COVID child hygiene competencies required by caregivers in day care centres in Delta State. The study therefore concluded that the acquisition and possession of the identified post COVID hygiene management competencies by childcare-givers will help a great deal in health management of children and prevention of outbreak of diseases in day-care centres.

Recommendations

Based on the findings and the conclusions drawn from this study, the following recommendations were made that:

- 1) The state government through pre-primary schools management board should help package the identified care giving skills into programmes for training caregivers for effective service delivery in day-care centres in the state.
- 2) There should be organization of regular and timely workshops and conferences on care giving skills where caregivers will be made to acquire new skills and competencies for work in day-care centres.
- 3) The administrators/proprietors of day-care centres in the state should ensure the recruitment of competent caregivers for effective caregiving to children in day-care centres.

Biographies

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