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**Healthwhiz: Assessing the Level of Knowledge among Children Aged 10 Years Old and Below Together With Their Parents about Communicable Diseases in A Community Setting**

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**Abstract.** The main purpose of the study was to determine the level of knowledge among children aged 10 years old and below together with their parents about communicable diseases (Bronchiolitis, Influenza, Malaria, Pneumonia, Varicella) in a community setting. A 15-item survey questionnaire that consist of a multiple-choice test, was used to assess the level of knowledge of children aged 10 and below together with their parents. To assess the acceptability of HealthWhiz Information Dissemination Booklet, a 20-item checklist questionnaire was adopted and modified to identify the feedback of the children with the help of their parents after using HealthWhiz booklet in its adequacy, coherence, appropriateness, and usefulness. Data were gathered and analyzed using the research and development project to assess the level of knowledge. The analysis of data was presented using frequency count, percentage and mean. The result showed a 'high' level of knowledge on the children with their parents about the communicable diseases (Bronchiolitis, Influenza, Malaria, Pneumonia, Varicella) that was based on the accumulated overall mean results of the respondents. A booklet was created to educate the parents about the communicable diseases. In terms of content, appeal to the target audience and efficacy, the acceptability of HealthWhiz as an information dissemination material was rated as 'very highly acceptable'. The result indicates that the HealthWhiz booklet as an information dissemination material was effective and can help children and their parents have a better understanding about the different communicable diseases in a community setting.

**Key words:** Communicable Diseases, Level of Knowledge, Learning Materials.

## Introduction

Communicable diseases continue to be the leading cause of death in the Philippines, where pneumonia, malaria, bronchiolitis, varicella, and influenza are still common. Furthermore, according to WHO (2020), in 2019 an estimated 5.2 million children under 5 years died mostly from preventable causes. Children aged 1 to 11 months accounted for 1.5 million of these deaths while children aged 1 to 4 years accounted for 1.3 million deaths. Hence, children are at increased risk of some communicable diseases; thus, it is critical to track these health concerns in order to provide appropriate medical management. Furthermore, children are dependent on their parents to prevent and address health problems associated with their health-related habits.

As stated by Turk (2015), communicable disease can be defined as an illness caused by another living agent and its products that can be spread from one person to another. This may happen through direct contact with a person carrying the pathogen, has a contact with contaminated fluids, received a bite from an animal or insect carrying the pathogen, and consuming contaminated water or foods. Once a pathogen has entered a person's body, it will begin replicating. The individual may begin to experience symptoms. These are usually mild, and symptoms pass after a few days. However, some can be serious and potentially life threatening.

Communicable diseases can involve every organ and every part of children's body. As stated by Papier et al. (2014), nutritional deficits and viral illnesses might have a severe impact on the nutritional health of children and adolescents. The major reason for children's increased susceptibility is that they have had limited exposure to diseases and therefore haven't yet built the immunologic defenses required to fend off certain diseases.

In relation to this, Fok and Wong (2014) defined health literacy as the ability to perform physical and psychosocial activities to proper standards. Eiser (2007) claims that children's attitude toward health and disease change over time. In addition, parents also play a vital role in children's health and perception with their pediatric care. Parents are the main link between physicians and patients and should understand the basic health concepts. Improving the health literacy of parents as well as their children is an important factor in controlling epidemics or transfer of diseases. Therefore, assessing the parents' and their children's level of knowledge about diseases and educating them accordingly must be strengthened to improve their health literacy (Wang, et al., 2018).

Through this study, the researchers aimed to give insights and knowledge to the children, parents, other family members, and the community about how the level of knowledge of parents and their children could significantly affect their awareness toward communicable diseases and to have a better understanding and comprehension about the importance of having enough information of the parents especially the younger generation in terms of dealing with communicable diseases.

In view of the aforementioned concerns, the main purpose of the study is to assess the level of knowledge of the parents together with their children and to give a grasp of knowledge about the communicable childhood diseases that may affect their health.

### ***Statement of the Problem***

The main purpose of this study was to determine the Level of Knowledge among Children aged 10 years old and below together with their Parents about Communicable Diseases (Bronchiolitis, Influenza, Malaria, Pneumonia, Varicella) in a Community Setting.

The study aimed to answer the following questions:

1. What is the level of knowledge among children aged 10 years old and below together with their parents about communicable diseases in a community setting?
2. What booklet can be created based on the results of the study?
3. What is the acceptability of HealthWhiz as an information dissemination about communicable diseases in terms of:
  1. Content;
  2. Appeal to the target audience; and
  3. Efficacy of HealthWhiz as an Information Dissemination material

### **Methodology**

#### **Research Design**

The study used Research and Development (R&D) design.

#### ***Participants***

The study was participated by 48 respondents that consisted of 24 children aged 7 years old up to 10 years old, together with their parents, 6 students together with their parents from each grade level from Grade 1 to Grade 4 of Andagaw Elementary School S.Y. 2021-2022. The respondents of the study were selected using the purposive sampling method.

#### ***Data Gathering Instrument***

The data for the study were obtained using a combination of self-administered research-made adapted and modified questionnaires. The questionnaire was divided into two (2) parts: part 1 assessed the level of knowledge of the children and their parents' and part 2 determined the level of Acceptability of HealthWhiz as an information dissemination material.

*Level of Knowledge Questionnaire.* Questions in this part of the questionnaire were provided through a multiple-choice test consisting of 15 items. The items in this questionnaire were consisted of scientific questions about communicable diseases, such as the meaning of communicable diseases, symptoms and precautions of a certain communicable disease.

*Level of Acceptability of HealthWhiz.* This part was consisted of 4 tables with 5 statements each criteria which was a combination of adopted and modified questions from (Rogayan, 2020) This part identified the feedback of the children with the help of their parents after using HealthWhiz in its adequacy, coherence, appropriateness, and usefulness.

***Level of Knowledge of Children aged 10 years old and below together with their Parents***

Overall, the results in Table 1 indicated that the level of knowledge about communicable diseases of children aged 10 years old and below (Grades 1 to 4) together with their parents. The level of knowledge of the children and parent-respondents in Andagaw Elementary School are "high" with the mean of  $M = 11.61$  about the communicable diseases. This shows that majority of the children along with their parents maintained their involvement and understanding towards communicable diseases. In line with this, the respondents have knowledge, but it was still insufficient for them to be fully aware about the study's context.

*Table 1. Mean results on the Level of Knowledge of Children aged 10 years old and below, together with their Parents*

<b>Variable</b>	<b>Mean</b>	<b>Description</b>
<b>Level of Knowledge</b>	<b>11.61</b>	<b>High</b>
Grade 3 Students	11.33	High
Grade 4 Students	12.00	High
Grade 4 Parents	11.50	High

Moreover, the level of knowledge of children in Grades 3 and 4 are “high” with a mean of  $M = 11.33$  for Grade 3 and  $M = 12$  for Grade 4 students. In addition to this, the parents of the Grade 4 students also showed a "high" level of knowledge about communicable diseases which has a mean of  $M = 11.50$ . This shows that the children and their parents had some knowledge of prevalent communicable diseases, which they have learned from school, television, their families, and other social media platforms. However, their level of knowledge is “high” for the reason that their knowledge is insufficient. In addition to that, they tend to ignore health related topics because some of them are not prioritizing these kinds of matter to be considered important in their everyday lives, and because some of the parents are busy with their duties and careers that they cannot prioritize this kind of topics that much.

The results of the study supported the research study conducted by Serbin et al. (2014) which concluded that parents play a vital role in children's health perception and pediatrics care and that relates to the researchers' findings that the children who got 'high' level of knowledge is congruent to their parents' which plays a vital role in their health understanding. Recent studies show that a variety of health, psychological, and social characteristic affect the early healthcare that the parents provide to the children, parents who do not have experience in different diseases tend to know less and showed lower than satisfactory level of knowledge.

***HealthWhiz Booklet***

**Cover Page**

The cover page of the HealthWhiz Booklet. “A healthy mind is the greatest treasure to find” this quote sums up the objective of the researchers’ booklet - to give a grasp of knowledge about communicable diseases. The cover page is designed to attract the respondents’ by having appealing images of virus – the agent of communicable diseases, medicine – serves as the medication, girls and boys wearing a mask for prevention, and a booklet on the lower

side to distinguish what learning material it is. In addition to that, the researchers provided a space wherein the respondents can write their name to show ownership. Above that is the title of the booklet; “HEALTHWHIZ” that has a picture of a half-faced man that wears a face mask to indicate the prevention of the transmission of the communicable diseases. The graphics used are in context of the topic and help visualize the concepts about communicable diseases. Altogether, the researchers see to it that the booklet has a clear, uncluttered design and has a pop of color. The designs were considered based on the respondents’ preference and to easily identify the goal of the booklet.

### **Introductory Page**

The introductory page of the HealthWhiz Booklet. In this page, the researchers provided a thorough and detailed discussion about the objectives of the booklet. It also include specific keywords that explained the well-reasoned intention of the researchers as to why they created and came up with a learning booklet material which covers communicable diseases that involve its precautionary measures and symptoms. The researchers assured that the graphic and the flow of information are organized.

### **Content Discussion**

It shows 1 out of 5 pages from the booklet that tackle the five (5) prominent communicable diseases on children. These are bronchiolitis, influenza, measles, pneumonia, and varicella. Each communicable disease is discussed in every page of the booklet showing different visual pictures to fully understand what it means to have the specific diagnose. The researchers used appealing graphics that is on context with the topic for added visual hierarchy. The text is divided into sections; meaning of the certain disease, symptoms, and precautionary measures. These were classified with the headings to make it easier for the respondents to comprehend. The words used making it were simple and suitable for the respondents especially the children. Furthermore, the palette used in every page resembles the color of each disease; one example, is the skin rash created by the varicella-zoster virus in chicken pox. Furthermore, the researchers created these pages to present information about each communicable disease in a logical order so that respondents can easily navigate through the material. This is also not text-heavy; it contains only the most important text and graphics needed to tell enough information about a certain disease. The composition of each page involves a communicable disease that is discussed with proper visual arrangement of all graphical and textual elements, the use of colors and styles, and the incorporation of the above-mentioned design layout components.

### **Activities**

It shows here 1 out of 4 pages from the booklet that the researchers made. Four (4) activities included entertaining worksheets to help children express and put into test their knowledge about communicable diseases. These activities were titled as: ‘Alisin’ - activity wherein the children are tasked to remove (by marking or shading) the viruses that are near the girl or near its body part in order for her to prevent from acquiring communicable diseases. ‘Maze Game’ - an activity in which children must help people with communicable diseases get to the hospital by drawing a line. ‘Hanapin Mo’ – an activity in which the children should encircle words found in the box that relates to the topic; communicable diseases. Lastly is ‘Iwasan Mo’ – an activity in which children must locate and encircle people who are

exhibiting symptoms of communicable diseases. Each activity is made with the purpose of promoting health prevention that can empower individuals to make healthier choices and reduce the risk of disease and disability in order to eliminate health disparities. These gave the respondents a chance to recall the lessons discussed on the booklet and teach them that being free from viruses and avoiding unhealthy behaviors can help people to be safe and have a disease-free body.

**Summary**

On the last page, the researchers made a summary of all the communicable diseases that were discussed on the booklet starting from the first disease mentioned up to the last. The layout of information as well as the graphics made the last page easy to read and has an organized flow. The text were classified into sections and labelled with appropriate section headings so that readers can easily understand. The graphics that were used stand as a visual for each disease. The researchers use large images so that they were fully seen by the respondents. Overall, this contains only the most essential bits of text and graphics about a certain communicable diseases.

***Acceptability of HealthWhiz as an Information Dissemination Material Booklet***

Overall, the results in Table 2 showed the assessment of the booklet HealthWhiz as an Information Dissemination Material. The overall mean score of 4.78 with the description “Very High Acceptable” for grade 3 and 4 students together with their parents. This shows that the product is very highly acceptable in terms of conciseness, appeal to the respondents, and its efficacy as an information dissemination material.

*Table 2. Acceptability of HealthWhiz Information Dissemination Material Booklet*

<b>Variable</b>	<b>Mean</b>	<b>Description</b>
<b>Assessment of HealthWhiz</b>	<b>4.78</b>	Very Highly Acceptable
Grade 3 Students	4.85	Very Highly Acceptable
Grade 4 Students	4.44	Very Highly Acceptable
Grade 3 Parents	4.87	Very Highly Acceptable
Grade 4 Parents	4.94	Very Highly Acceptable

This showed that the children together with their parents in Andagaw Elementary School rated the HealthWhiz information dissemination material as “Very Highly Acceptable” with the mean of  $M = 4.85$  for grade 3 students,  $M = 4.87$  for grade 3 parents,  $M = 4.44$  for grade 4 students, and  $M = 4.94$  for grade 4 parents. This indicates that children, along with their parents, have understood their involvement and understanding of communicable diseases based on using the researcher’s product. As a result, although the respondents have knowledge about communicable diseases, it still made them understand the topic more and have deeper awareness about different communicable diseases.

Furthermore, The results indicated that the children and their parents are aware of their role and knowledge about communicable diseases based on using the HealthWhiz information dissemination material booklet. They have learned how to use it and have enjoyed doing so. The respondents gained a better grasp of knowledge about communicable diseases after



reading the booklet.

The results of the study tied up with the studies of Brannen (2002) and Arcia et al. (2015) that states models, diagrams, videos, and infographics can help children understand complex messages. Images can be an excellent way to ensure that knowledge is used and applied beyond simple synthesis and distribution. In relation, parents have a part in children's health because they serve as a main link between physicians and patients and should understand the basic health concepts. Improving the health literacy of parents is an important factor in controlling epidemics or transfer of diseases. Health literacy and education can reduce illness and give necessary information, enhance overall development of both parents and children.

In addition, the researchers also observed that the result from the survey questionnaires about the level of knowledge towards communicable diseases, showed that the children really is dependent on their parents' point of views about health and that the parents are the ones who are responsible for their child's health literacy. Most of the child's answers are somehow the same to what their parent's. Health information is widely available, but of varying quality. People's health decisions can be ill-informed, unnecessarily costly, and even dangerous because they lack general knowledge about how to assess whether it claims about health interventions are trustworthy. Health education according to Wang, et al., 2018, effectively slows the spread of diseases and conducting health education programs would provide children together with their parents a proper knowledge, behavior and benefit comprehensive development. Therefore, assessing children's knowledge about diseases and educating them accordingly must be strengthened to improve children's health literacy.

## ***Conclusions***

Based on the findings of the study stated above, the following conclusions were drawn:

1. The level of knowledge among children aged 10 years old and below together with their parents about communicable diseases (Bronchiolitis, Influenza, Measles, Pneumonia, Varicella) in Andagaw Elementary School was "high" based on the accumulated overall mean results of the respondents. The findings showed that both children and parents were aware of common communicable diseases, which they obtained in school, television, family members, and social media platforms; nonetheless, they tend to overlook health-related topics and do not consider them relevant in their daily lives. Therefore, there was a positive response to the level of knowledge of the children along with their parents because it maintained their involvement and understanding towards communicable diseases and the information that they gained from different platforms helped them develop their knowledge, but it is still not enough for them to be completely aware about the communicable diseases. This may lead to less people being affected or infected by the different communicable diseases. In addition, this may increase their self-awareness, and develop good hygiene.
2. The booklet created based on the results of the study has a cover page that made an impact to the respondents because it contained graphics that is appealing to the respondents and helped them visualize the concepts about communicable diseases. It features a page where the researchers went over the booklets objective in great depth about the different communicable diseases; bronchiolitis, influenza, measles, pneumonia, and chicken pox. These diseases have their own page in the booklet, the content of each page discusses a

certain disease and describes its meaning, symptoms, and precautionary actions. The information in the booklet helped the parents and their children grasp the knowledge about the different communicable diseases. The booklet also includes activities that put the respondents to test at the same time it also enhances their knowledge about communicable diseases. The summary of the lesson can be found on the last page of the booklet. The booklet is helpful to the parents and their children in terms of understanding the different communicable diseases and being self-aware of their surroundings as they learn more about the science of diseases.

3. In terms of Content, Appeal to the target audience, and Efficacy the acceptability of HealthWhiz as an information dissemination about communicable diseases was “very highly acceptable”. This demonstrates that the youth, along with their parents, remained engaged and knowledgeable about communicable diseases. Therefore, the HealthWhiz as an information dissemination is effective and can help children and their parents have more understanding about the different communicable childhood diseases (Bronchiolitis, Influenza, Measles, Pneumonia, Varicella). The content, appeal to the target audience, and efficacy is a huge factor when making or creating a product. This may lead to the higher numbers of participants attracted to the product, as they prefer the product that will give them satisfaction and more information.

### ***Recommendations***

Based on the findings and conclusions, the following recommendations were suggested:

1. For the parents, it is recommended to further learn more about communicable diseases by researching or reading more information regarding this, they may also use their gained knowledge and transfer it to their child. For the children, it is recommended to know more about communicable diseases by studying and reading about it, they can also seek guidance or ask questions about it from parents or teachers. For the community, it is recommended that they disseminate information by implementing health programs, they may also give out flyers or booklets regarding communicable diseases to be given out to household. For the Rural health, it is recommended that they educate parents and children by developing health education program. For the Provincial health office, it is recommended that they supervise parents and children to be continuously educated by monitoring and evaluating the implementation of health programs. For the Department of Education, it is recommended that they inform the students regularly about communicable and even non-communicable diseases by establishing school-based health programs and through modules. For the future researchers, it is recommended that they do further research by studying level of awareness regarding non-communicable diseases.

2. For the parents, it is recommended that they teach their child about communicable diseases or diseases in general in a method that picks their interest and is simple to understand. They can easily teach their children by looking for available materials online or in books. For the children, it is recommended that they should continue to seek help from their parents and practice answering questions about diseases other than infectious diseases. They may also try to express their concern to the parents. For the community, it is recommended that they develop products like HealthWhiz, which have both information and activities that can assist the children and parents while piquing their interest in learning



about various conditions. For the rural health, it is recommended that they provide free and main access to available resources for parents and or families regarding diseases that can assist them in being educated about communicable and other illnesses. They may also conduct research to determine the preferred method of learning for parents and children, making it easier for them to stay informed. For the provincial health office, it is recommended that they should set aside funds for health to purchase necessary learning materials and to provide free disease information to parents and children. They may also offer facilities to address parents' questions and worries about such diseases, as well as ensure that every household is kept up to speed on the latest diseases or disease-related materials so that they may readily adapt and comprehend such information. For the Department of Education, it is recommended that they develop learning materials that would pick the interest of youth and investigate further how they can keep children updated and informed about diseases. For the future researchers, it is recommended to find an alternative to using books and materials to teach their children and parents.

3. For the parents, it is recommended that they should properly examine the material contained in the HealthWhiz booklet by studying it and applying it as necessary. They could also seek for other publications, such as HealthWhiz, which appears to be easier to read and interesting to children. For the children, it is recommended that they read the HealthWhiz booklet and apply what they have learnt in their daily lives. They can also utilize the activities in the booklet to test their knowledge about communicable diseases. They could also look for other learning tools to help them be informed and mindful of such situations. For the community, it is recommended to continue to increase knowledge and awareness of communicable and non-communicable diseases, including those that impact children, by disseminating educational materials and producing publications that are simple to understand and may capture children's interest. They may also offer activities to keep parents up to date. For the Rural Health Office, it is recommended that they should help people keep educated by providing Health Information books or pamphlets available for study, such as HealthWhiz. They might also build disease awareness campaign materials that appeal to parents and children, allowing them to readily educate the public. For the Provincial Health Office, it is recommended to improve its current health programs by being more creative in terms of target audience appeal, efficacy, and clear and intelligible content. They may also arrange various activities to test parents' and children's comprehension of various infectious and non-communicable diseases. For the Department of Education, it is recommended that they provide supplementary learning materials to students, particularly children, by distributing health information books, pamphlets, and/or modules that might assist them in staying informed and knowledgeable about various diseases. They may also engage in fun and educational school health programs. For the future researchers, it is recommended that they should conduct additional research into the impact of various learning materials on children's and parents' levels of knowledge. Depending on the results, they may increase the number of participants in their study and improve HealthWhiz.

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