

KNOWLEDGE, ATTITUDE AND PRACTICE OF CAREGIVERS TOWARDS THE PREVENTION AND HOME-BASED MANAGEMENT OF DIARRHOEAL DISEASE AMONG CHILDREN AGED BETWEEN 0-5 YEARS IN VIETNAM

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ABSTRACT

Purpose: To determine the role of caregivers' knowledge, attitude and practices in preventing and managing diarrhoeal disease among young children (0 to 5 years) in Vietnam.

Methods: Random sampling was used to select and interview 86 primary caregivers in Vietnam rural and urban settings. Both qualitative and quantitative data were collected.

Results: Participant preventive behaviour scores were so low that all were classified as poor or below, with 18.8% showing extremely poor preventive behaviours, 68.2% very poor and 13% poor. The majority of participants also scored in the extremely poor range on safe drinking water practice (8.2%) and sanitation practice (74.3%). Notably, there were statistically significant between-group differences based on moderating factors, including wealth and educational background.

Conclusion: The results suggested several primary intervention strategies for nurses, healthcare providers, primary caregivers, parents, school leaders and other stakeholders, including routine assessment of children's nutrition, especially in relation to healthy food and safe drinking water access; assessing family environments to identify diarrhoeal disease risk factors, including socio-cultural factors and primary caregiver or parenting influences; and collaborating with school leaders to identify contributing factors, such as food environments, school policies and student demographics. These targeted prevention and interventions strategies respond to the specific needs of Vietnam's communities, families and children.

Keywords: Attitude, Caregiver, Diarrhoeal, Knowledge, Practice, Vietnam.

INTRODUCTION

The prevalence of diarrhoeal disease in children causes significant societal adversity. For example, the condition affects school absenteeism, high dropout rates, psychological problems associated with self-esteem, children's quality of life, parental workplace absenteeism resulting from the need to attend to their sick children and high healthcare costs. In this interventional study, the central aim was to advocate for the prevention of diarrhoeal disease by implementing nutrition education. According to Amare, Dereje, Kassie, Tessema and Mullu,[1] nutrition education combines environment-based support strategies and facilitates voluntary adoption of nutrition- and food-related behaviours conducive to health and well-being in target populations.[2] The setting and focus of this investigation were based on a number of factors. For instance, Burnett et al. [3] documented that in Vietnam, low levels of nutritional education have been associated with healthcare services' limited success in curbing diarrhoeal disease. Contributing factors included the challenge of reaching and engaging parents in interventions, as well as the costly nature of the developing country's healthcare system.

Problem Statement

The prevalence of childhood diarrhoeal disease in Vietnam has been attributed to lifestyle. Carter, Bryce and Newby [4] observed high cost and limited availability of healthy foods, coupled with poor eating habits. In addition, Choube, Bahal, Srivastava and Sharma [5] reported that most children under age five, especially those from rural communities, lack health insurance, which limits their access to preventive and primary care. Similar studies have reported that health education that targets behavioural changes, such as access to healthy foods, improved nutrition and clean water in the home, social and school environments, have not yet been fully adopted among low-income families and communities. According to Das, Patel, Agarwal, Singh and Singh,[6] this adverse trend implies that health disparities characterise Vietnam's healthcare system and account for the prevalence of diarrhoeal disease among children.

Furthermore, Vietnam has a shortage of primary care providers and most low-income earners are unable to pay for services out-of-pocket, so access to healthcare remains limited. External factors that exacerbate this situation include unstable families and a lack of adequate recreational programs for children. According to Saha et al.,[7] these factors negatively affect efforts to address diarrhoeal disease among children. Finally, Dessalegn, Kumie and Tefera [8] asserted that Vietnamese agencies providing social and health services that target children have not yet developed unified data collection systems, resulting in variations in diarrhoeal disease incidence reporting, especially in children age five and under, and leaving social and health service providers with inadequate data to identify who needs service. Consequently, a significant number of children from the general population do not receive adequate attention.

In summary, the prevalence of diarrhoeal disease among Vietnamese urban and rural children age five and under is attributed to low income (which is associated with poor nutrition), unequal access to care, lack of adequate recreational programs and facilities for physical activity, the dominance of sedentary lifestyles and lack of a unified childhood diarrhoeal disease data collection system. Hence, the need to implement early interventions cannot be overemphasised, but the data required to develop effective interventions is scarce. The need for advanced information on which to base intervention strategies motivated the current study's examination of caregiver's knowledge, practices and attitude toward early childhood diarrhoeal disease in Vietnam.

Rationale

Diarrhoeal disease has been associated with more immediate health risks and comorbidities, as well as high mortality rates. Carter, Bryce, Perin and Newby [9] reported that these associated risks account for high rates of school absenteeism and drop out, resulting from hospital admissions.

Diarrhoeal disease is also associated with psychological problems, including depression, anxiety, lower quality of life, low self-esteem and social problems such as stigma and bullying.[10]

Finally, Vietnam's national expenditure on diarrhoeal disease remains high.[11] Intervening and sensitizing caregivers regarding ways to prevent and manage diarrhoeal disease may reduce overall healthcare expenditures.

Theoretical Framework

Orem's Self-Care Deficit nursing theory holds that, in most cases, patients are keen to exercise self-care. Specifically, it suggests that patients are more likely to recover holistically and quickly in situations where practitioners allow them to exercise self-care to the highest level of their ability.[12] Orem posited that, in situations where individuals fail to meet the respective self-care requisites, a self-care deficit tends to arise. This theory was used to determine the participants' needs (requisites), such as nutrition education and healthy foods, prior to advocating for a supportive and positive environment to facilitate informed decision-making. Overall, the theory suggests that registered nurses determine the perceived healthcare deficits surrounding patients and their families before defining support modalities. In this case, the identified deficit entailed inadequate education regarding healthy foods, while the defined support modality involved community-based nutrition education based on caregivers' insights regarding their knowledge, practices and attitudes toward diarrhoeal disease.

This project's engagement in nutrition education was also informed by results from previous studies. For instance, children from low-income families are more likely to be diagnosed with diarrhoeal disease compared to their high-income counterparts because of food choice imbalances.[13] Children from low-income family settings do not have healthy diets, which increases their risk of diarrhoeal disease.[14] Healthy food is expensive; therefore, low-income earners are more likely to adopt an unhealthy diet. Informed by these mixed outcomes, this study focused on nutrition education for primary caregivers as a means of assuring a healthy child population in Vietnam.

METHODS

A cross-sectional study was conducted at the household level in Vietnam's remote zones in May 2017. Administrative leaders were asked to provide permission. The target population included caregivers or primary care providers of legal age who had not left the country in the preceding three months and provided care to children aged 0 to 5 years who had experienced a diarrhoea episode within the previous three months. Participants were required to provide written informed consent to participate in the study, except that verbal consent was obtained from participants who could not read. Caregivers of children over age five, and households where either a parent or child was severely ill, were excluded from participating. Qualitative and quantitative data were collected through personal interviews in the Vietnamese language. Issues covered during the interview included the definition of diarrhoeal disease, along with causes, prevention, danger signs and transmission. Caregiver practices investigated included feeding, food preparation, safe drinking water, hygiene and sanitation. Both inferential and descriptive statistical analyses were conducted.

RESULTS

In total, 86 caregivers were interviewed. These participants were responsible for 159 children aged 0 to 5 years. Most of the respondents were female (96%); 91.1% were married; and 89.1% were the mothers of the children in question. The caregivers' mean age was 31.7 years; more than half (54.5%) had only primary school or no formal education, with higher percentages of lower education levels in participants from rural zones. Participants' average length of stay in Vietnam was 16.69 years. The average child's age was 24.05 months, with boys accounting for 51% and girls 49% of the children. A little over half of the children (55.1%) had been vaccinated against measles. In the month preceding the study, the majority of the children had experienced diarrhoea (56.4%). Of these, 98.1% had watery diarrhoea, with 44.6% also showing mucous and/or blood in the diarrhoea. Caregivers' knowledge of diarrhoeal disease is summarized in Table 1.

Table 1: Caregivers' level of knowledge about diarrhoea disease in children aged 0-5 years

Characteristics		Frequency	Percentage
Prevention			
	Poor	70	81.00
	Fair	11	12.79
	Good	5	5.81
	Total	86	100.00

Danger signs			
	Poor	63	73.26
	Fair	8	9.30
	Good	15	17.44
	Total	86	100.00
Transmission			
	Poor	72	83.72
	Fair	14	16.28
	Good	2	2.33
	Total	86	100.00
Cause			
	Poor	62	72.09
	Fair	6	6.98
	Good	18	20.93
	Total	86	100.00
Definition			
	Poor	59	68.60
	Fair	21	24.42
	Good	6	6.98
	Total	86	100.00

Caregivers' Diarrhoea Preventive Behaviours

Study participants all scored in the poor range or lower for this measure, with 18.8% scoring in the extremely poor preventive behaviours range; 68.2% in the very poor; and 13% in the poor range. The majority of participants also scored in the extremely poor range for safe drinking water practice and sanitation practice, 81.2% and 74.3%, respectively. Specific variables that might predict caregiver practices in relation to diarrhoea disease prevention were also analysed. Notably, there were statistically significant differences between participants' scores based on moderating factors, including income and educational background. For example, higher income participants with some formal education exhibited higher scores on diarrhoea preventive behaviours. The number of children age five or under and the length of stay in Vietnam did not play statistically significant roles in shaping diarrhoea preventive behaviours. However, caregivers' age was found to play a moderating or predictive role, with a direct correlation observed between caregivers' age and caregivers' diarrhoea prevention practices.

DISCUSSION

The results suggest that empowering parents to play an equal role in designing and implementing interventions may increase family-centred preventive practices. Orem posits that individuals should exercise self-reliance and take responsibility for their own care and that of their family members. Further, her theory holds that people are distinct individuals, while nursing operates as a form of action requiring an interaction of two or more individuals. Successfully meeting the development and universal self-care needs of individuals is an important component of primary care prevention. Hence, knowledge of potential health problems is important because it enables individuals to practice self-care, which is learned in socio-cultural contexts. In this study, the theory's specifications were met in such a way that the children's and parents' needs (nutrition

education and the choice of healthy foods) were determined before advocating for a supportive and positive environment to inform decision-making (improved food choices).

This project reflected a novel design geared toward family-centred intervention for diarrhoeal disease. Using Orem's principles, the project incorporated a high level of collaboration with low-income parents, involving them in developing a program designed to cater to family interests and needs, while responding to their limitations and building on their strengths. Although barriers, such as low income and lack of health insurance, threatened to compromise the caregivers' progress in preventing diarrhoea among their children, consistent results across the target population suggest that nutrition education is a promising approach that warrants attention in future diarrhoeal disease initiatives and program development.

Nutrition education is seen as a transformative paradigm poised to bridge the gap between practice and science and working to eliminate health disparities while addressing research funding challenges. Nutrition education has been utilised successfully in faith-based, afterschool and community interventions targeting diarrhoea. The current study's results suggest that engaging low-income parents in designing, developing and evaluating family-centred diarrhoeal disease prevention programs may produce more fruitful outcomes. This project's empowerment framework forms an additional hybrid, with nutrition education posing a crucial departure from conventional approaches to engaging families in diarrhoeal disease prevention. The results further suggest that adopting an empowerment-oriented and parent-centred approach has advantages. For example, it facilitates parental engagement, encouraging them to "own" the health intervention program; it builds on pre-existing resources at the families' disposal, such as diarrhoeal disease incident reporting; and it assures sustainability via capacity building, such as training community representatives to emerge as parent leaders in the target communities.

Although the project findings are highly promising and innovative, they are limited in that they lack a control group. Future nutrition intervention projects seeking to prevent diarrhoeal disease could increase outcome validity and reliability by comparing the study-group results to those of a control-group, allowing causal inferences and conclusions for developing informed recommendations.

Recommendations for Practice

Routine assessment of children's nutrition

Where nurses have conducted routine assessment of children's physical growth, most of the current literature contends that the diarrhoeal disease prevalence rate has decreased.[15] According to Thomas, Getahun and Alemayehu,[16] assessments that target children's eating habits have contributed to diarrhoeal disease prevention and paved the way for analysing protective and risk factors that influence children's health. Workie, Sharifabdilahi and Addis [17] observed that healthcare providers and families are better placed to establish diarrhoeal disease risk factor baseline measures. Amare et al. [1] found that identifying the roles of eating habits and nutrition is key to preventing and managing diarrhoeal disease among children. The current study findings also suggest that early intervention aids in identifying children at risk for diarrhoeal disease. Other studies have investigated the importance of assessing children's feeding environment, food security, physical and developmental capabilities and physical growth in relation to the prevalence of diarrhoeal disease,[2] with results demonstrating that early assessments facilitate timely interventions, which, in turn, reduce diarrhoeal disease incidence. As reported by Burnett et al.,[3] interventions based on these results include providing timely support and advice to families about nutritional skills and knowledge, and promoting consistent messaging about healthy habits among stakeholders, including community organizations, childcare providers, primary caregivers or parents, doctors and teachers.[4] Based on the efficacy of assessments that target children's nutrition and community or family feeding environments, the practice is recommended for Vietnam's rural and urban settings to reduce diarrhoeal disease prevalence and incidence.

Assessing family environments that increase the risk for diarrhoeal disease in children

The main objective of previous studies in this area were to identify primary caregivers' or parents' socio-cultural factors and influences that may affect the rate of diarrhoeal disease in children. According to Choube et al.,[5] children's health behaviours strongly depend on the family environment, pointing to the importance of nurse engagement in targeting and assessing this environment, which appears to hold true for Vietnam. Das et al.,[6] reported similar findings, indicating that family environment assessment enables healthcare providers to understand families' physical activity environment, nutrition intake and eating behaviours. In another study,

Saha et al. [7] observed that in situations where primary caregivers or parents support opportunities for children to access healthy foods, live in hygienic environments and access safe drinking water, the family environments are likely to experience significant reductions in diarrhoeal disease incidence and prevalence. The implication for Vietnam's healthcare system is a clear need to assess family environments to identify possible socio-cultural factors and influences that might contribute to the prevalence of diarrhoeal disease in these settings. Dessalegn et al., [8] suggested that such assessments include when and what the children eat, whether or not the parents encourage children to eat various foods, whether parents use food to pacify children or engage in emotional eating and how often families eat in fast foods restaurants. Other assessments that have proved insightful inquire about the presence or absence safe drinking water and hygienic neighbourhoods.

Given the promising nature of these results, it is recommended that Vietnamese nurses collect information to understand the family environmental influences and empower the parents or primary caregivers to promote health among their children, rather than use the data to blame the caregivers. For families, environmental factor assessments may aid in reducing diarrhoeal disease prevalence by focusing on socio-cultural conditions such as poverty, barriers to accessing healthy foods and safe drinking water, hygienic environments (e.g., the nature of the neighbourhood), resource availability (e.g., income levels and their impact on access to safe drinking water) and the role of ethnic background in shaping the types of foods that families prefer.[9] The implication for Vietnam's healthcare system is that family environment assessment needs to focus on providing information and referrals for resources that might increase income, including government benefits (via healthcare subsidies), tax rebates and the child benefit.

Collaboration with school leaders

As mentioned earlier, contextual influences operate outside the family environment and are beyond the control of primary caregivers or parents. This underscores the need to collaborate with school leaders to assess elementary school settings for protective and risk factors that influence diarrhoeal disease incidence, including the nature of the physical and food environments, school policies and student demographics.[10] Ghasemi et al.[11] identified the role of early grade school assessments in shaping diarrhoeal disease prevalence among children and adolescents. Similar to the observations by Nigatu and Tadesse,[12] the study's results suggested that the decision to collaborate with school leaders is informed because it yields crucial data about the hygiene of the physical environment, the educational levels of primary caregivers or parents and the socio-economic status of different family systems. As reported by Padhy et al.,[13] the resultant information enables healthcare providers to collaborate with other stakeholders (e.g., school staff) to prioritise and tailor school-based primary intervention approaches in a manner that best responds to children's needs. In a related observation, Rabbi and Dey [14] documented that the decision to collaborate with school leaders' further aids addressing childhood diarrhoeal disease by ensuring that the stakeholders effectively utilise the available human and financial resources. Based on these insights regarding the critical need to assess the school environment in liaison with school leaders, it is recommended that Vietnam's healthcare authorities embrace this strategy. Particularly, collaborating with school leaders to target learners in socio-economically disadvantaged school settings because these students, as reported by Thomas et al.,[16] are at a high risk for diarrhoeal disease.

CONCLUSION

In summary, Vietnam's healthcare system has worked to curb diarrhoeal disease, but the condition remains prevalent, especially in settings marked by low income or poverty, compounded by unequal access to healthcare. Negative effects include workplace absenteeism among parents, high annual healthcare expenditures at the family, community and national levels, high mortality rates, related comorbidities, school absenteeism, high dropout rates and poor academic performance. Based on the evidence in this study and the previous literature, the authors recommend several steps that stakeholders, including Vietnam's nurses, healthcare providers, primary caregivers or parents and school leaders could embrace: (1) routinely assessing children's nutrition, especially in relation to healthy food and safe drinking water access; (2) assessing Vietnam's family environments to identify factors likely to increase the risk of diarrhoeal disease, including socio-cultural factors and primary caregiver or parenting influences; (3) collaborating with school leaders to assess conditions that contribute to diarrhoeal disease, including food environments, school policies and student demographics. These primary prevention strategies may be targeted and responsive to the specific needs of the country's communities, families and children.

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CONFLICTS OF INTERESTS

The authors have no conflicts of interests to declare.

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