PREDICTING FACTORS OF CARE-GIVING BEHAVIORS FOR THE HIV-EXPOSED INFANTS

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF NURSING SCIENCE
(PEDIATRIC NURSING)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2004

ISBN 974-04-4750-3

Thesis

entitled

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was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Nursing Science (Pediatric Nursing)
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ACKNOWLEDGEMENTS

I would like to thank Assoc. Prof. Jariya Wittaya-sooporn, my major advisor, and Dr. Autcharereya Patoomwan, my co-advisor, for the helpful guidance, and their support with respect to solving problem, and valuable comments as well.

Grateful acknowledgement is extended to the experts for their assistance in validation of the instruments. Very special thanks are also due to all staff members of the Infectious Diseases Clinic, Faculty of Medicine, Ramathibodi Hospital, Bumrasnaradura Hospital and Phramongkutkhlao General Hospital for their assistance and facilitation throughout my study. A special debt is due to all the mothers with HIV infection, for their willingness to participate in this study. I also extend my special thanks to Sudaporn Payakareung for her special guidance and invaluable comments with respect to statistical analysis of the data.

I would like to thank all the staff of the Master Unit and all my friends in the master degree program, especially in Pediatric Nursing Academic Year 2542, for their guidance, assistance, and support. Special thanks are given to the staff of the Pediatric Nursing Department, especially those in the Infectious Disease Ward (Ped. 1) for their warm assistance and support.

Finally, I am very grateful to my family for continuous love, warmth, support, and encouragement, which gave me the ability to succeed.

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ABSTRACT

The purposes of this descriptive research were to study the predictive power on care-giving behaviors for HIV-exposed infants, by caregiver's capabilities, the basic conditioning factors of the caregivers (caregiver-child relationship, caregiver's education, and family income).

The research framework was Orem's general theory of nursing. Purposive sampling consisted of 88 caregivers who were clients of the infectious disease clinics of Ramathibodi, Bumrasnaradura, and Pramongkutklao hospitals, from February to June, 2002. Data, collected by questionnaire, consisted of background information, caregiver's capabilities, and care-giving behaviors. Data were analyzed by SPSS/FW using descriptive statistics and hierarchical multiple regression analysis.

The results of the study indicated very good levels of care-giving behaviors, with a mean score of 126.83 from 159. The caregiver capabilities' mean score was 207.65 from 290. Care-giving behaviors were positively correlated with caregiver capabilities ($r = .228$, $p < .05$). Hierarchical multiple regression analysis revealed that the basic conditioning factors of the caregivers accounted for 20.6% of variance in care-giving behaviors. After entering caregiver capabilities into the model, it accounted for 23.3% of the variance in care-giving behaviors. However, the variables that could predict care-giving behaviors were caregiver's education ($t = 3.906$, $p < .001$) and family income ($t = 2.114$, $p < .05$). Moreover, there were some interest care-giving behaviors that could affect the risk of mother-to-child transmission and the progress of severe infection.

The finding suggested that nurses should be concerned with patient and family especially the caregivers who were low educated and low income. Moreover, they should keep in mind medication, awareness when abnormal symptoms occur, and precautions against infection.

KEY WORDS: CARE-GIVING BEHAVIORS/ HIV-EXPOSED INFANTS/ HIV-INFECTED MOTHER/ CAREGIVER'S CAPABILITIES

115 pp. ISBN 974-04-4750-3

ปัจจัยทำนายพฤติกรรมการดูแลเด็กที่เกิดจากมารดาติดเชื้อ เอชไอวี/เอดส์ (PREDICTING FACTORS OF CARE-GIVING BEHAVIORS FOR THE HIV-EXPOSED INFANTS)

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บทคัดย่อ

การวิจัยเชิงบรรยายครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาปัจจัยทำนายพฤติกรรมการดูแลของผู้ดูแลเด็กที่เกิดจากมารดาติดเชื้อเอชไอวี/เอดส์ โดยศึกษาในผู้ดูแลเด็ก ซึ่งพาเด็กเข้ารับการตรวจรักษาในโรงพยาบาลรามาธิบดี โรงพยาบาลบำราศนราดูร และโรงพยาบาลพระมงกุฎเกล้า กรอบแนวคิดของการวิจัยที่ใช้เป็นแนวทางการศึกษาคือการดูแลบุคคลในความรับผิดชอบในทฤษฎีการดูแลตนเองของโอเร็ม คัดเลือกกลุ่มตัวอย่างแบบเฉพาะเจาะจงตามเกณฑ์ที่กำหนด จำนวน 88 ราย ระหว่างเดือนกุมภาพันธ์ ถึงเดือนมิถุนายน 2544 เก็บข้อมูลโดยให้ผู้ดูแลเด็กตอบแบบสอบถาม ซึ่งประกอบด้วยข้อมูลพื้นฐานของผู้ดูแลและของเด็ก แบบวัดความสามารถ และแบบวัดพฤติกรรมของผู้ดูแล วิเคราะห์ข้อมูลโดยใช้สถิติบรรยายและการวิเคราะห์ถดถอยแบบเชิงชั้น

ผลการศึกษาพบว่าผู้ดูแลเด็กส่วนใหญ่เป็นมารดามีพฤติกรรมการดูแลเด็กอยู่ในระดับดีมาก คะแนนเฉลี่ย126.83 ความสามารถของผู้ดูแลอยู่ในระดับปานกลาง คะแนนเฉลี่ย207.65 พฤติกรรมการดูแลมีความสัมพันธ์กับความสามารถของผู้ดูแลอย่างมีนัยสำคัญทางสถิติ การวิเ คราะห์ถดถอยพหุคูณแบบเชิงชั้นพบว่าปัจจัยพื้นฐานได้แก่ การศึกษา และรายได้ของผู้ดูแลเด็กสามารถอธิบายความแปรปรวนของพฤติกรรมการดูแลเด็กได้ 20.6% อย่างไรก็ตามเมื่อนำความสามารถของผู้ดูแลเข้ามาวิเคราะห์ร่วมด้วยพบว่า ความสามารถของผู้ดูแลสามารถอธิบายความแปรปรวนของพฤติกรรมการดูแลเด็กได้ ร้อยละ 23.3 ตัวแปรที่สามารถทำนายพฤติกรรมการดูแลเด็กได้ คือ การศึกษา และรายได้ของครอบครัว นอกจากนี้พบว่าผู้ดูแลยังผู้ดูแลยังมีพฤติกรรมบางอย่างที่มีผลต่อการติดเชื้อจากมารดาสู่ทารก และ การติดเชื้อที่รุนแรง

จากผลการศึกษาครั้งนี้พยาบาลควรดูแลเอาใจใส่ผู้ป่วยและครอบครัว โดยเฉพาะผู้ดูแลที่มีการศึกษาน้อยและรายได้ต่ำ นอกจากนั้น ผู้ดูแลควรคำนึงถึงเรื่องการให้ยา การให้ความสนใจกับอาการผิดปกติที่เกิดขึ้นและป้องกันการติดเชื้อ

115 หน้า ISBN 974-04-4750-3

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CHAPTER I
INTRODUCTION

Background and Rationale

Acquired Immune Deficiency Syndrome (AIDS), an immune suppressive disease caused by the Human Immunodeficiency Virus (HIV), is the main worldwide health and social problem at the present time. It has emerged as a crucial health problem because it is a severe situation for which there is no current method of therapy and it has spread rapidly into the general population of women and their newborn. HIV infection has increased rapidly in women, with most being in their childbearing years (Boyd-Franklin, et al., 1995: 5; Smeltzer & Whipple, 1991: 249). The seroprevalence of HIV infection in pregnancy nationwide is 1.7 per 1,000 pregnant women. As a result, approximately 7,000 infants are exposed prenatally each year (AAP, 2000: 149), and most children with HIV are infected through vertical transmission (Armstrong, et al., 1993; Fiscus, 1996: 1483).

In Thailand, approximately 1.5% of women in antenatal care are infected with HIV, resulting in approximately 15,000 births to HIV-infected women each year (Ungshusak, et al., 1998; Siriwasin, et al, 1998 cited in Bhadrakom, et al., 2000: 509-516). With the absence of antiretroviral use or other interventions, the reported transmission rates of mother-to-child transmission range from 21 to 45% (Thisyakorn, 1996: 100-104). After the introduction of a non-breast feeding prevention program, the risk of infection rate for vertical transmission decreased to 21-28% (Chisanu Pancharean & Usa Thisyakorn, 2001: 252-258; Brown & Sititrai, 1995: 3). As of December, 31, 2001, the case load was 8,351 and 408 new cases of perinatally-infected children with AIDS were reported to the Division of AIDS, Department of Communicable Disease Control, Thailand (2001), which is 4.49% of the 185,907 caseload (1984-end 2001). Fortunately, the transmission rate for infants has decreased because of the treatment of pregnant women and infants with zidovudine (ZDV) (Connor et al., 1994: 1173-1180; Wilfert, 1996: 438-411; Fiscus, 1996: 1483;

Keithley, et al., 2000: 53). So, there are numbers of children, whose mothers have HIV/AIDS, who have grown up to school age.

HIV has been reconceptualized as a chronic but fatal illness (Revicki, & Murray, 1995: 1730). However, HIV effects cell-mediated and antibody-mediated immunity, causing progressive symptom manifestations and decline in health over time (Ader, 1992 cited by Miles et al., 2001: 42). The course of HIV is unpredictable, with asymptomatic periods interspersed with opportunistic infections (Enger et al., 1996: 1329). The majority of children with infection demonstrate clinical symptoms before the age of two.

Signs and symptoms that occur in the child's first year of life vary. They are neither specific nor sensitive. Diagnostic criteria and case definitions are; diarrhea persisting for more than 15 days, oral candidiasis beyond the neonatal period, generalized lymphadenopathy, failure to thrive, recurrent parotitis more than 1 month, herpes zoster, recurrent pneumonia more than two occasions (Johnson & Johnstone, 1993: 202; Mok, 1993: 206), abnormal infections and thrombocytopenia (Usa Thisyakorn et al., 1995 cited in Chisanu Phanchareorn & Usa Thisyakorn, 2545: 43). These children tend to be severely ill, failure to thrive, and have progressive encephalopathy, *Pneumocystis carinii* pneumonia, or other opportunistic infections, such as Candida esophagitis, life threatening bacterial infection, and disseminated Cytomegalovirus infection. Frequently they die before reaching their sixth birthday (Oleske, 1994: 83).

If HIV infection in children is not detected, and consequently not treated, they will progress to chronic disease, the end stage being acquired immunodeficiency syndrome (AIDS). Approximately 1 in 5 of infected children will develop AIDS or die within the first year of life. After this age, disease progression is slower but, by six years of age, 30 to 40% of infected children will have died and most of the remaining children will have had HIV-related illnesses, most dying before they reach adulthood (Blanche et al, 1997: 442-450).

The majority of infants born to HIV-infected mothers are not infected. Most HIV-exposed infants are born at full term with normal birth-weight and have a normal physical examination finding at birth, with few impacts from HIV. Consequently, HIV-exposed infants, regardless of HIV infection, need the same care as normal

infants. Especially, when they are exposed HIV, they risk delayed growth and development (Scafidi & Field, 1996: 895).

Management of the HIV-exposed infant is complex and includes continuation of zidovudine prophylaxis during the first 6 weeks after birth, initiation of TMP/SMP (trimethoprim & sulfamethoxazole) prophylaxis for *Pneumocystis carinii* by 6 weeks of age in all infants born to HIV-infected women, monitoring of hematologic parameters, specific laboratory testing to determine HIV infection status, DNA polymerase chain reaction [PCR] or viral culture, and variations in immunization recommendations. Prompt identification of infected infants permits early initiation of progressive antiretroviral therapy with the potential to prevent the rapid progression of illness seen in some HIV-infected infants. Moreover, their mothers should be counseled against breast-feeding their infants because of the additional risk of transmission of HIV (Thavee Chotpitayasunondh, 2545: 352). If the infant is later diagnosed as HIV-infected, the mother is then faced with the likelihood of the infant having encephalopathy, developmental delay, recurrent illness, and eventual death (Johnson & Lobo, 2001: 41).

Mothers of HIV-exposed children deal with multiple life stressors, including their HIV infection (Faithful, 1997: 144; Mellins & Ehrhardt, 1994: S54; Semple et al., 1997: 213). The presence of maternal HIV infection may directly and indirectly compromise the mother's ability to respond to her baby. Direct effects of the virus include maternal ill health, increased likelihood of opportunistic infections, debilitation, and neurological impairment (Faithful, 1997: 144; Mellins & Ehrhardt, 1994: s54; Semple et al., 1997: s55). In the early phase of HIV, symptoms are diverse and may affect almost all body systems (Enger, et al., 1996: 1329). Symptoms and health problems include unintended weight loss, fatigue, oral candidiasis, persistent fever, and diarrhea (Enger, et al., 1996). As the disease progresses, opportunistic infections are particularly common, and can be fatal (Fowler et al., 1997). In addition, women experience gynecological symptoms, which occur early and persist throughout the course of disease (Fowler et al., 1997). Individuals with HIV also experience cognitive impairment, even when asymptomatic (Bornstein et al., 1993). These problems may be exacerbated by complicated treatments with multiple negative side

effects. As a result of these health problems, women with HIV may experience decreased functional abilities (Stanton, et al., 1994: 1050-1056).

The indirect effects of viral infection include the chronic and physical stresses of stigma, profound uncertainty whether the virus may be transmitted to the fetus (Santacroc, 2000: 63-75), and the need for social support. The indirect effects of viral infection can also have a profound influence on the quality of interaction between mother and child (Andrews et al., 1993: 193-198; Black, et al., 1994: 595-616; Spiegel & Mayer, 1991: 153-167). HIV-positive mothers may frequently respond psychologically to their diagnosis with emotions of guilt, grief, and feelings of low self-esteem and depression (Andrews, 1995: 39). Guilt can lead to profound depression. Depressed mothers may interact with their infants in ways that disrupt their children's emotional and/or cognitive development. HIV-positive mothers fear HIV transmission to their infants, and especially fear touching their infants. Anxiety or fear is a potential factor affecting maternal attachment. This is thought to disrupt the development of secure attachment between mother and infant (Martins & Gaffan, 2000), resulting in ineffective and inappropriate post-delivery maternal roles, and inappropriate and abnormal care-giving behaviors.

Finally, the HIV-exposed infants become orphaned by parental death caused by HIV infection; especially children below the age of five years. The most significant effect is that these children are not able to live by themselves and become public and social responsibilities.

Children born to HIV-infected mothers often do not live with a biological parent because of child abuse and/or neglect, or illness or death of the mother (Caldwell et al., & the Pediatric Spectrum of Disease Clinical Consortium, 1992: 603). Data from the Pediatric Spectrum of Disease project (cited by AAP, 2000) revealed that 45% of children born to HIV-infected women resided with a primary caregiver who was not the biological parent. HIV-exposed children will probably require someone to care for them beyond the lifespan of their infected mothers. They will continue to require intensive medical and emotional attention for their HIV exposure, no matter who is providing it for them. Thus, the primary caregiver will be affected by these situations in the same way as their mothers (Piyarat Nil-aiyaka, 2537: 210-242). These problems are physical, psychosocial, socioeconomic, and emotional

(Chutima Reung-pho, 2541: 224; Pairin Kanthana, 2543; Septimus, 1989: 49-54; Brown & Powell-Cope, 1993: 179-191; Brown & Powell-Cope, 1991: 338-345; Cohen et al., 1995: 248-254; Lewis et al., 1996: 221-230). These problems may cause the same ineffective and more inappropriate, care-giving behaviors as with their parents.

Many studies have been conducted into HIV exposure among foreign children, which may not represent or well describe HIV exposure in Thai children and their families, because of the differences in social, cultural, and traditional customs. Psychologists believe that behaviors can change due to time, environment, social context, and culture (Jariyawat Kompayak, J., et al., 2535: 1). According to Orem (1995: 214), self-care agency or dependent-care agency of the individual varies with factors influencing educability, life experiences, cultural influences and resources in daily living. For this reason, those studies have limitations when used to describe Thai children and their mothers. Previous studies about HIV/AIDS in children in Thailand aimed to describe the relationships of behaviors of HIV-infected mothers in the first year of age with stress and coping (Patchara Soonthararachun, 1998), and behaviors of HIV-infected mothers of toddlers with social support (Patcharin Kittithongsophon, 2541). One study, which used the concept of dependent-care agent in Orem's Nursing Theory, aimed to elucidate the relationships between maternal care-giving behaviors of HIV/AIDS children with basic conditioning factors (Suthisa Lamchang & Prongnapa Ackarachinorase, 2541).

Another study compared the quality of life of infants of mothers with and without HIV infection (Sopa Sutachayanon, 2541). The study found that there was no significant difference in the overall level of receiving basic needs, except the sleeping hours of infants of mothers with HIV-positive infection was significantly less than infants of mothers without HIV infection, and there was no significant difference in health status between infants of mothers with and without HIV infection, except that the body weight and body hygiene of infants of mother with HIV infection were lower than infants of mothers without HIV infection. Furthermore, there was no significant difference in the quality of life, determined by level of receiving basic needs and health status, in infants of mothers with and without HIV infection.

In this study, the researcher wanted to investigate predictive factors for care-giving behaviors for the HIV-exposed infant, to develop more effective nursing care in the future and to provide better care-giving for the HIV-exposed infant.

Theoretical Framework

Orem stated that self-care is the practice of activities that individuals initiate and perform on their behalf in maintaining life, health, and well-being. Dependent-care is an activity that describes self-care, but responsible infants and children performed it to maintain their lives. Self-care agency or dependent-care agency refers to the human capabilities of individuals to perform actions to take care of themselves and others. A therapeutic self-care demand refers to the self-care actions to be performed for some duration, to meet known self-care requisites by using valid methods and related sets of operations or actions (Orem, 1991: 171, 123, 145). An imbalance between the power to produce care or capability for self-care, or dependent-care and therapeutic self-care demand, is referred to as a self-care deficit or dependent-care deficit (Orem, 1995: 10). The term "self-care deficits" refers to the relationship between the self-care or dependent-care agency and therapeutic self-care demand of individuals, in which capabilities for self-care, because of existing limitations, are not equal to meeting some or all of the components of their therapeutic self-care demands (Orem, 1995: 240). In infants and children who have limitations in age, the ill, or the disabled, mothers are the dependent-care agent who mediate their self-care deficit. Therefore, maternal care-giving behaviors are dependent-care agency in response to self-care demand and the effect of the response on the therapeutic self-care demand of HIV-exposed infants. If the mothers possess effective dependent-care, the children's severity of progression to HIV/AIDS decreases and well-being will be possible, not only for the children but also their caregivers and families.

Formulating a therapeutic self-care demand requires investigating and understanding what self-care requisites exist and judging what can and should be done to meet them. The three types of self-care requisites are identified and discussed as follows (Orem, 1995: 108, 111, 191-200):

1. **Universal self-care requisites** are suggested for the maintenance of a sufficient intake of air, water, and food; the maintenance of a balance between activity

and rest; balance between solitude and social interaction; provision of care associated with the elimination process and excretion, prevention of hazards to human life, human functioning and well-being; and promotion of human functioning and development within social groups, in accordance with human potential, known human limitations, and the human desire to be normal.

2. **Developmental self-care requisites** are relevant to the initial formation of human structural, functional, and behavioral features of individuals and their dynamic movement towards increasingly higher, more complex and more intricate levels of organization and functioning. At some stages of the life-cycle (intrauterine life, infancy, and childhood), developmental requisites can only be met by dependent-care agency. Developmental requisites articulate two goals: 1) providing conditions and promoting behaviors that will prevent the occurrence of deleterious effects on development, and 2) providing conditions and experience to mitigate or overcome existent deleterious effects on development.

3. **Health-deviation self-care requisites** are seeking and securing appropriate medical assistance, being aware of and attending to the effects and results of pathological conditions and states, including effects on development, and effectively carrying out medically prescribed diagnosis. Therapeutic, and rehabilitative measures; being aware of attending to or regulating the discomforting or deleterious effects of medical care, including the effects on development, modifying the self-concept in accepting one-self; and learning to live with the effects of pathological conditions and states, and the effects of medical diagnostics and treatment.

Normally, adults voluntarily care for themselves. Young children are still dependent on their mothers because they are in an early stage of physical, psychological, and psychosocial development. Chronic illness is a condition requiring long-term care and treatment. The HIV-exposed infant, who is in the same condition as a chronic illness, needs long-term care from the mother or care-giver. They also need the same care as normal infants, especially promoting growth and development. Their well-being depends on the capacity of the care-givers to respond to and meet therapeutic self-care demands. The demands of the HIV-exposed infant, which are within the caregivers' responsibility, are composed of: 1) protection from mother-to-

child transmission (MTCT); 2) protection from opportunistic infections, and preventing the spread of the virus, 3) care for the sick, or when symptoms occur or change, 4) nurture and promote health and well-being with tender-love and care, and prevent accidents, and 5) seek information and sources or resources that are useful for HIV-exposed care.

These five dimensions of care-giving behaviors are part of therapeutic self-care demands. These behaviors help the children to have an almost normal life and physical and psychological development. Adequate and appropriate behaviors could help complications and difficulty in cure and care, and help to maintain normal daily activity, growth, and development. Furthermore, inappropriate care and late detection of HIV-related signs and symptoms could lead to complications that are difficult to manage and may finally lead to AIDS. A strong and healthy child is at less risk of infection than a weak child. The final outcome is the successful control of the HIV virus. In chronic conditions, accepting behaviors help the care-givers to pay more attention to providing care for their children, managing child-care demands and improving the lives of both caregivers and the HIV-exposed infant.

In conformation with Orem's theory, dependent-care agency is a capable response to a person's requisites (Somchit Hanuchareurnkul, 2534: 22). The main limitation of dependent-care agency is that it may cause inadequate and inappropriate care-giving behaviors. Following Orem's theory, dependent-care agency structure has 3 levels: 1) capability for dependent-care agency, 2) power components of dependent-care agency comprised of 10 elements which can be compared as a medium between the acknowledgement and actions of a mother as specifically as a deliberate action, and 3) foundational capability and disposition.

The concept of capability for dependent-care agency is a close-up of care-giving behaviors, so that in this study, the researcher chose the power-components of dependent-care agency as factors that could predict the care-giving behaviors and namely "the caregiver's capabilities".

HIV-exposed infants, regardless of HIV-infection, need the same care as normal infants, especially to promote growth and development. The infant is totally dependent on the mother or caregivers to meet all physical and emotional needs. The mother's role in child-rearing is important in enhancing the growth and development

of the HIV-exposed infant. Following Orem's theory, dependent-care agency is the capability response to another person's requisites (Somchit Hanucharurnkul, 2534: 22). Orem (1995: 242) defined capabilities in child and infant care as characteristic of dependent-care agency, as "the complex capabilities of a person to know and respond to self-care demands, by infants and children in health problems and its adaptability to universal self-care requisites, to be consistent with the caring system for infants or children, that a person responds to daily life" and remain as capabilities to adjust and develop dependent-care agency. Thus, if mothers or caregivers have the capability to care for their infant, they can be encouraged to reach their maximum developmental potential.

In developing these capabilities, consideration of the 10-power components is important, according to Orem, they are important guidelines in considering the fundamental capabilities and dispositions, and the 10-power components. Under Orem's theory, the fundamental capabilities and dispositions are necessary base for the 10-power components, and the 10-power components are necessary base for dependent-care agency (Gast et al., 1989:27). Thus, care-giving behaviors are related to the 10-power components and to fundamental capabilities and dispositions.

In the context of Orem's theory, the literature review and previous studies about HIV/AIDS and the HIV-exposed infant, the researcher divided 10-power components for HIV-exposed care into 5 aspects: 1) the ability to maintain attention and consciousness about the children, and consistently perform and integrate them with relevant aspects of personal family and community life; 2) the ability to control the use of available physical energy and posture sufficient for the initiation, continuation and completion of dependent-care operations; 3) the ability to take care of the children for goal orientation that accords with its characteristics and it's meaning for life, health, and well-being; 4) the ability to reason and make decisions about care of the child, and to operate the repertoire of cognitive, perceptual, communication, and adapted interpersonal skills to perform child-care operations, and; 5) the ability to create and maintain the relationship and the ability to seek and strive for success according to its' characteristics and its' meaning for life, health, and well-being.

Development of these caregiver capabilities, which seek to attain effective and appropriate care-giving behaviors, depends on certain basic conditioning factors, for example, age, family system, developmental system, living pattern, life experience, and health care service (Somchit Hanucharurnkul, 2534: 23). These factors can influence thinking, decision-making and performance, which affect the dependent-care behaviors of HIV-positive mothers responding to their infants' requisites. In this study, the basic conditioning factors selected were caregiver-child relationship, caregiver's education, and family income.

Caregiver-child relationship

Infants need care from their mothers because they are in the early stages of physical and psychosocial development. HIV-exposed infants, regardless of HIV-infection, also need the same care as normal infants. When the HIV-exposed infant was born, the HIV-infected mother might likely respond psychosocially to their diagnosis with emotions of guilt, grief, low self-esteem, and depression (Andrews, 1995: 39), causing high levels of stress and anxiety, and unstable emotions among the mothers. They may have trouble making decisions or solving problems when faced with their intensification, resulting in inappropriate caring behavior, such as over-protection of the child.

When a family member becomes ill, other family members must devise a different role pattern (Hill, 1965 cited by Williams et al., 1993: 111). When mothers cannot take care of their children, other family members must do so. HIV infection affects not only a child and his/her mother, but also other family members, so that if other family members perceive those effects, there may be ineffective and inappropriate care-giving behavior. Moreover HIV-infection is a chronic fatal illness. Other family members would be more affected than the mother because of fear of infection and the shame of an HIV-exposed infant being in the family, which signifies to others that there is another AIDS-infected or HIV-infected person in the family. Therefore, the care-giving behavior of other families who take care of the HIV-exposed infant may be ineffective and inappropriate, and more so than the care-giving behavior of the HIV-exposed mother.

It may be concluded that the relationship between the child and the care-giver can predict the care-giving behavior of caregivers of HIV-exposed infants.

Caregiver's education

The duration of education is a very important factor in the development of knowledge, skills and good attitudes towards self-care behavior (Orem, 1985: 175). A person with a higher level of education can understand health conditions and have greater ability to make decisions than those who are less educated (Pender, 1982: 162-163). Sakaorat Paungjan (2538) found that the level of a mother's education had a positive correlation with dependent-care agency in chronic illness children. Orathai Somnarin (2538) found that the level of a mother's education had a significant positive correlation with dependent-care agency of AIDS' caregivers. The study by Patcharin Kittithongsopon (2541) found that the level of a mother's education had a positive correlation with the care-giving behaviors of toddlers of HIV-infected mothers, while the study of Suthisa Lamchang and Prongnapa Akarachinores (2541) also found that the level of a mother's education had a positive correlation with the role of the caregiver of HIV-infected children.

It may be concluded that the caregivers' education is likely to predict the care-giving behaviors of caregivers of HIV-exposed infants.

Family income

Income is an important resource for initiating continuing self- (Orem, 1985: 122) and dependent-person care. Persons with high incomes will have better opportunities than people with low incomes in seeking facilities for healthy self-care practice (Pender, 1987: 161-162). The study of Ubol Asumpintrap reported that the dependent-care agency of the mothers of congenital heart disease children had a positive correlation with family income. The study of Patcharin Kittithongsopon (2541) found that family income had a positive correlation with the care-giving behaviors of toddlers of HIV-infected mothers, while the study by Suthisa Lamchang and Prongnapa Akarachinores (2541) also found that family income had a positive correlation with the role of caregiver of HIV-infected children.

It may be concluded that family income is likely to predict the care-giving behaviors of caregivers of HIV-exposed infants.

In summary, basic conditioning factors; caregiver-child relationship, caregiver's education, and family income; and caregiver's capabilities should relate to care-giving behaviors of HIV-exposed infant caregivers. These factors can also be used to predict the care-giving behaviors of the caregivers of the HIV-exposed infant.

The relationship among all variables is summarized in Figure 1.

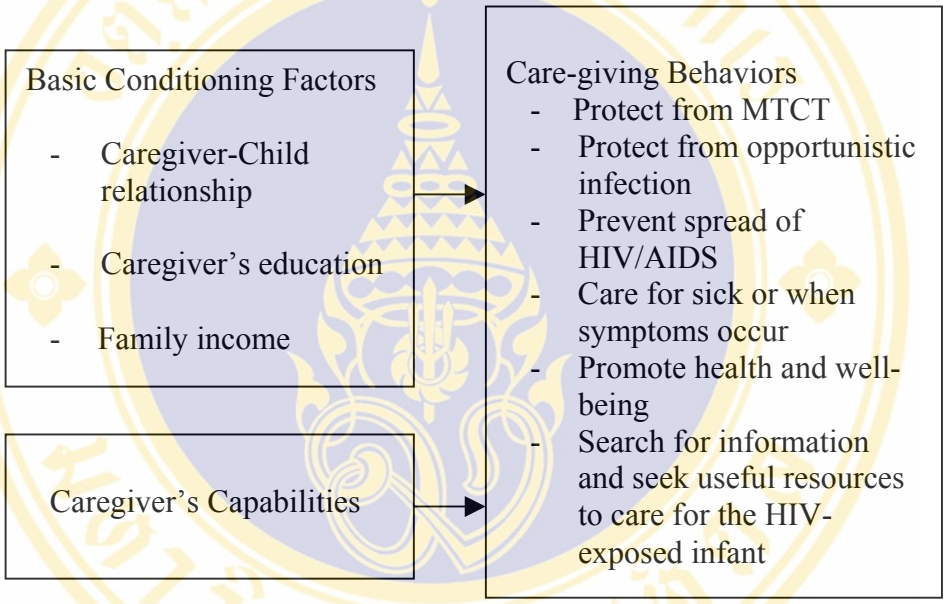

Figure I. The relation between selected basic conditioning factors of the caregiver, caregiver capabilities, and care-giving behaviors, in primary caregivers of the HIV-exposed infant.

Research Question

Can the care-giving behaviors for the HIV-exposed infant be predicted by the basic conditioning factors (caregiver-child relationship, caregiver's education, family income), and caregiver capabilities.

Objectives

1. To study the care-giving behaviors and caregiver capabilities for the HIV-exposed infant.

2. To study the predictive power for care-giving behaviors for the HIV-exposed infant by caregiver capabilities, basic conditioning factors of the caregiver (caregiver-child relationship, caregiver's education, and family income).

Hypothesis

The caregiver-child relationship, caregiver's education, family income and the caregiver capabilities can predict the care-giving behaviors of caregivers of HIV-exposed infants.

Scope of the Research

This study focused on the care-giving behaviors and the caregiver capabilities for HIV-exposed children in their first year. The samples were caregivers of HIV-exposed infants, selected from the infectious diseases clinics of the out-patient departments of Ramathibodi, Bamrasnaradura, and Pramongkutklao hospitals.

Expected Outcomes and Benefits

1. A guideline for nursing practice, to investigate problems of care-giving behaviors of the HIV-exposed infant, and to teach prevention and health promotion to the caregivers of the HIV-exposed infant.

2. A management guideline for nursing instructors, to teach nursing students to understand care-giving behaviors in caring for the HIV-exposed infant, including the basic conditioning factors of the caregiver that may impact upon the care-giving behaviors of the caregivers.

3. Suggestions for further research, to develop and promote care-giving behaviors in caring for the HIV-exposed infant.

Assumptions

The HIV-exposed infant in the first year of age was unable to perform self-care, so they needed dependent-care from their caregivers to respond to their therapeutic self-care demand for health and to live a normal life.

Definitions of Variables

1. Caregiver's capabilities: means the perception of the primary caregiver to know and cooperate in performing deliberate actions to meet the therapeutic self-care demands of the HIV-exposed infant.

The caregiver's capabilities were measured by the Dependent-care Agency of Caregivers Questionnaire, which was modified by the researcher from the questionnaire developed by Autchareeya Patoomwan, (2534) based on the Denyes/ Fildey Dependent-Care Agency Instrument (Haas, 1990) and the literature review. Higher scores indicated higher levels of caregiver capability.

2. Care-giving behaviors: means the practices of primary caregivers in providing care for the HIV-exposed infant, which include: 1) protect from MTCT; 2) protect from opportunistic infections and prevent the spread of the virus; 3) care for the sick or when the symptoms occur or change; 4) nurture and promote health and well-being with tender-love and care, and accident prevention; and 5) search for information and seek useful sources/resources for HIV-exposed care.

These behaviors were assessed using the Care-giving Behaviors Questionnaire for the HIV-exposed infant, which was modified by the researcher from the questionnaire developed by Suthisa Lamchang and Prongnapa Akarachinorase (2541) based on Orem's theory, and from the literature review. Higher scores indicated higher levels of caregiver capability.

3. Basic conditioning factors: the factors selected were as follows:

3.1 Caregiver-child Relationship: means the bond between the HIV-exposed infant and the caregiver, which can be divided into two groups, as follows:

3.1.1 mother-child relationship

3.1.2 non-mother-child relationship

3.2 Caregiver's education: means total years of formal education of the caregivers, counted from primary level to the highest level of education

3.3 Family income: means the income (in baht) of every person who lived in the caregiver's family and gave money to support the child

CHAPTER II
LITERATURE REVIEW

In this study, the review of the related literature covers the following topics:

1.Care-giving behaviors for the HIV-exposed infant

2.Caregiver capability for the HIV-exposed infant

3.Relationship between care-giving behaviors and caregiver capabilities for the HIV-exposed infant's care

4.Relationship between care-giving behaviors and basic conditioning factors of caregivers of HIV-exposed infants

Care-giving behaviors of caregivers of the HIV-exposed infant

The HIV-exposed infant born from an HIV-seropositive mother, regardless of HIV-infection, also needs the same care as normal infants.

According to Orem (1995: 121), identification and description of self-care requisites of individuals or populations provide the health care provider and the public with what is important and what is wanted with respect to regulation. The types of regulatory actions that should be performed are expressed by three types of self-care requisites (Orem, 1991); universal self-care requisites, developmental self-care requisites and, and health-deviation self-care requisites.

Universal self-care requisites are suggested for the maintenance of a sufficient intake of air, water, and food; the maintenance of a balance between activity and rest; balance between solitude and social interaction; provision of care associated with elimination processes and excretion, prevention of hazard to human life, human functioning, and human well-being; and promotion of human functioning and development within social groups, in accordance with human potential, known human limitations, and the human desire to be normal.

Developmental self-care requisites are relevant to initial information of human structural, functional, and behavioral features and their dynamic movement toward increasingly higher and more complex and intricate levels of organization and functioning. In some stages of the life-cycle (intrauterine life, infancy, and

childhood), developmental requisites can only be met by dependent-care agency. Developmental requisites express two goals: 1) providing conditions and promoting behaviors that will prevent the occurrence of deleterious effects on development, and 2) providing conditions and experience to mitigate or overcome existent deleterious effects on development.

Health-deviation self-care requisites are seeking and securing appropriate medical assistance; being aware of and attending to the effects and results of pathological conditions and states, including effects on development; and effectively carrying out medically-prescribed diagnosis. Therapeutic, and rehabilitative measures; being aware of and attending to or regulating the discomforting or deleterious effects of medical care, including effects of development, modifying the self-concept in accepting one-self; and learning to live with the effects of a pathological condition and state, and the effects of medical diagnostics and treatment.

Universal self-care requisites, developmental self-care requisites, and health-deviation self-care requisites are expressions of the type of regulatory actions that should be performed by the self-care or dependent-care agent (Orem, 1995: 121).

Orem (1985) stated that therapeutic self-care demand is the measures of care required at moments in time to meet existent requisites for regulatory action to maintain life and to maintain or promote health, and developmental and general well-being. The goal of care-giving behavior for the HIV-exposed infant is to meet their therapeutic self-care demand. The therapeutic self-care demand of the HIV-exposed infant is measured by the care required in the first year, to meet the existent requisites for regulatory action of the caregiver, that is, care-giving behavior. The ultimate goal of caring for these children is to maintain health by providing access to appropriate care and support services, to prevent them from acquiring perinatal and postnatal HIV infections or opportunistic infections. Due to the many different healthcare needs of the HIV-exposed infant, mother and/or caregiver who respond to those needs must take deliberate actions to enable the individual to survive in a variety of well-being or health states or to move from one state to another (Orem, 1995: 120). The researcher calculated and rearranged the care-giving behavior of caregivers for the HIV-exposed child into 5 dimensions, as follows:

Dimension 1: To protect from mother-to-child transmission (MTCT)

Transmission from woman to infant may occur *in utero*, during delivery, or from breastfeeding (Luzuriaga et al., 1995). Possible mechanisms of vertical transmission of blood from the mother to the fetus are during labor contractions, infection after membrane rupture, and/or fetal contact with secretions or blood from the maternal genital tract (International Perinatal HIV Group, 1999; Fowler et al., 2000: 23). There is also evidence that infection may occur from the newborn's oral exposure to HIV-tainted maternal genital secretions in the birth canal (Gaillard et al., 2000; Mandelbror et al., 1999). With the HIV-exposed newborn, the caregiver must also consider the neonate as potentially uninfected and, therefore, should minimize the infant's exposure to maternal blood and body fluids on the skin as well as to other contaminating microorganisms.

Ideally, treatment for the prevention of maternal-infant transmission should begin in the prenatal period. Both research and clinical experience have shown that ZDV crosses the placenta well and is safe when used after the 1st trimester of pregnancy (Meleski & Damato, 2003: 112). Evidence suggests that, when an infant has been exposed to HIV during labor and delivery, antiretroviral therapy given during or following exposure probably blocks infection in some cases. The use of ZDV as post-exposure prophylaxis is thought to protect from infection following occupational exposure to HIV. Also, in the PACTG 076 trial, only a small amount of the treatment effect in substantial chemoprophylaxis may affects the 6-week-old newborn. A New York State surveillance system for children born to HIV-infected mothers has reported that only 9% of 86 children whose mothers did not use ZDV prenatally, but who received ZDV chemoprophylaxis starting within 24 hours of birth, were infected, compared with 25% of those not receiving ZDV. Likewise, two clinical perinatal trials in Africa, in which infants received prophylactic antiretroviral therapy (either ZDV-3TC or nevirapine) during labor and delivery, and during the first week of life, demonstrated the effectiveness of neonatal antiretroviral prophylaxis. The national program for prevention of mother-to-child HIV transmission in Thailand (Department of Health, December 1999) (Chitwarakorn et al., 2000: 115) stated that all HIV-infected pregnant women who decided to continue their pregnancy would be offered zidovudine (ZDV), as follows:

- 300 mg. orally every 12 hours from 34 weeks' gestation until labor;
- 300 mg orally every 3 hours from onset of labor until delivery [a].

Babies born to HIV-infected mothers would be offered ZDV treatment (2mg/kg every 3 hours), as follows:

If the mother gets CDV for 4 weeks, the infant receives ZDV for 1 week

If the mother gets ZDV for < 4 weeks, the infant receives ZDV for 6 weeks [a]

Infants born to mothers with infection, who escape infection during gestation and delivery, may still become infected through breast-feeding. The rate of infants not infected at birth, but infected through breast-feeding, is estimated at 12 to 14%. Approximately 29% of breast-fed infants of women who seroconvert following delivery contract HIV.

HIV is commonly contained in the breast milk of HIV-infected women. The mechanism of HIV transmission through breast-feeding is most likely the frequent and prolonged exposure of infants' oral and gastrointestinal tracts to breast milk, but the actual unit of infection (i.e., cell-free or cell-associated) is unknown.

The practical strategy (Chitwarakorn et al., 2000: 16-18; Thavee Chotpitayasunondh, 2545: 352) comprises:

Infant feeding counseling:

- Explain risk of HIV transmission through breastfeeding
- Recommend formula feeding
- Provide free formula feeding to low income families

Babies born to HIV-infected mothers will receive infant formula to substitute for breast feeding until 12 months of age.

Successful interventions to stop perinatal transmission depend on the ability to diagnose the infected infant in the first few months of life. The signs and symptoms that occur in the 1st year of life are neither specific nor sensitive. The presence of maternal HIV antibody at birth, and its persistence to 18 months, limits the usefulness of antibody testing in young infants. In addition, some HIV-infected infants may be antibody-negative due to immune dysfunction, making the interpretation of results from antibody testing very difficult. A number of techniques have been designed to detect the virus or to assess the infant's immune response to HIV.

Prompt identification of infected infants permits early initiation of progressive antiretroviral therapy with the potential to prevent the rapid progression of illness seen in some HIV-infected infants, including monitoring of hematologic parameters, specific laboratory testing to determine HIV infection status; DNA polymerase chain reaction [PCR] or viral culture. Other diagnostic testing may include immunoglobulin A and immunoglobulin M, and p24 antigen assay (Coalition of Spanish Speaking Mental Health Organizations, 1990 cited by Bastin et al., 1992: 108). Evaluation of CD4 lymphocyte count is also frequently performed. Zidovudine therapy and *P. carinii* prophylaxis are instituted for infants with symptomatic HIV infection and may be offered to asymptomatic infants with CD4 counts below 500/mm^3 (Kline & Shearer, 1991: 817). Frequent screening for developmental delays, formal evaluations by developmental specialists, and referral for early intervention are provided, and variations in immunization recommendations are a practical strategy to promote antibody testing, which is conducted at regular intervals until 2 years of age. Babies born to HIV-infected mothers will be offered HIV antibody testing at 12 months of age. If the result is positive, the baby will be re-tested at 18 months of age. The mother or other caretaker should be taught about the significance of HIV testing and the potential signs of HIV-related illness in the infant. In addition, the frequency and content of pediatric follow-up should be emphasized.

Dimension 2: To prevent opportunistic infection and the spread of the virus. HIV infection causes immunosuppression and susceptibility to opportunistic infections, and may lead to the development of unusual neoplasms (Beily & Tolzis; Cherecky & Berger, 2001). With the HIV-exposed newborn, the caregiver must also consider the neonate as potentially uninfected and, therefore, should minimize the infant's exposure to maternal blood and body fluids on the skin as well as to other contaminating microorganisms. The infant should be protected from skin abrasions that could lead to infection. The opportunistic infections commonly in the HIV-exposed infant are *Pneumocystis carinii* pneumonia (PCP), and tuberculosis.

Strategies to prevent opportunistic infections include:

1.To prevent *Pneumocystis carinii* pneumonia (PCP) in all infants born to HIV-positive mothers, international recommendations are to provide cotrimoxazole

(TMP-SMZ) prophylaxis to all infants born to HIV-positive mothers until the HIV status is confirmed negative. In Thailand there are currently two strategies:

- Start primary TMP-SMZ prophylaxis (or dapsone in case of cotrimoxazole intolerance) at 4-6 weeks of age and continue until HIV infection is excluded, or at least until 6 months of age in asymptomatic healthy infants of unknown HIV-status. If the child is symptomatic or confirmed HIV-infected, prophylaxis should be continued until at least 12 months of age.
- Infants who have received antiretroviral prophylaxis: provide TMP-SMZ prophylaxis only to the infant developing HIV-related symptoms. (Department of Health, December 1999; Chitwarakorn et al.,, 2000: 115).

2. To prevent tuberculosis: check history of tuberculosis exposure. If household contact is suspected, all household members should be investigated. Appropriate preventive therapy or treatment should be offered after investigations for active TB.

3. The pediatric follow-up includes periodic medical, developmental, and psychosocial evaluations and interventions. The mother or other caretaker should be taught about the significance of HIV testing and the potential signs of HIV-related illness in the infant. In addition, the frequency and content of pediatric follow-up should be emphasized. Promoting development is comprised of:

Routine check up visits according to the EPI schedule:

- monitor growth
- monitor development
- intervene in case of unexpected events and complications

For HIV-infected children, future care will involve more intensive supportive care for the child and family, use of antiretroviral therapy, and appropriate opportunistic infection prophylaxis and treatment. Regular, or at least every three months, follow-up visits are recommended for HIV-related health checks during EPI visits, then every 3 months or, according to the clinical status of the child, even more frequently. If the infant is later diagnosed as HIV-infected, the mother is then faced with the likelihood of the infant having encephalopathy, developmental delay, recurrent illness, and eventual death (Johnson & Lobo, 2001: 41).

4. Provision of care associated with general and oral hygiene

Good hygiene practices: Children should wear clothes appropriate for the weather.

Body hygiene, dental health, good bowel habits and urination are necessary for cleanliness.

5. Promotion of hand washing

Since the majority of infants born to HIV-positive mothers have no obvious physical stigma at birth, most of these neonates can be cared for in the regular nursery. Physical care of the neonates, including skin, cord, and eye care, and administration of vitamin K, is accomplished in the same manner as with all newborns, using universal precautions.

The infant's skin should be cleansed with soap and water and then with alcohol before performing a heel stick or administering a vitamin K injection, to prevent possible contamination of the skin surface with body fluids that could be transmitted via the puncture site. Antimicrobial agents, such as triple dye and backtracking should be applied to the cord using sterile gloves.

Infants born exposed to HIV do not require isolation, unless specific indications such as enteritis, congenital syphilis, cytomegalovirus, or other viral infections are present. To minimize exposure to infection, the following guideline (Mendez, 1991: S15) should be adhered to:

1. Hands should be washed after handling of the child's non-bloody secretions or excretions.
2. Blood, blood-contaminated fluids, and blood spills are handled with gloves.
3. Uncapped, used needles and other sharp objects should be immediately put into closeable puncture-proof containers that eventually are disposed of as infectious waste.

6. Environment management

They should have a proper house, a suitable environment.

- Do not allow pets inside the house.
- Cleanliness of clothes and other things needed for daily life.

- Good hygiene practices: how to prevent horizontal spread of HIV-infection. Casual household contacts are safe.

7. Immunization

As in the case of the uninfected infant, immunizations are critical to the health of HIV-infected children. The recommended immunization schedule for these children is summarized in following table:

Immunization schedule for HIV-infected children

age	Antigens
2 mo	DPT, IPV, HBOC
4 mo	DPT, IPV, HBOC
6 mo	DPT, IPV, HBOC
12 mo	Tuberculin test (energy screen, if ill)
15 mo	MMR*, HBOC
18 mo	DPT, IPV †
24 mo	Pneumococcal vaccine
4 to 6 yr	DPT, IPV, MMR
14 to 16 yr	dT, measles vaccine††

DPT, diphtheria-pertussis-tetanus; dT, adult diphtheria and tetanus;
HBOC, *Haemophilus influenzae* b conjugate vaccine; IPV, inactivated polio vaccine;
MMR, measles-mumps-rubella.

Note: Yearly influenza vaccine is indicated in all HIV-infected children.

*May give earlier in high prevalence areas for measles. Check with state or local health department for guidelines.

† May use oral polio vaccine [OPV] if the child has seroreverted and there are no immunodeficient persons in the household.

†† Check with local health department for guideline

Maternal hepatitis B serologic studies (HBsAg, HbsAb) should be obtained before or at delivery. If they are positive, the infant should receive passive immunization with hepatitis B immune globulin at birth, followed by hepatitis B

vaccine at 1 month and 6 months of age. HbsAg and HbsAb assays should be repeated at 9 to 12 months of age. If seronegative, the infant should receive a fourth dose of hepatitis B vaccine.

Dimension 3. Take care when health-deviation

Irritability of the HIV-exposed infant is often the first sign of fever. Rectal temperature-taking may stimulate diarrhea; thus axillary temperatures are taken. Antipyretics, fluid replacement, and tepid sponge baths are appropriate interventions for fever.

The mother or other caretaker should be instructed to watch for signs of symptomatic infection in the infant, such as oral thrush, increased irritability, poor feeding, fever, diarrhea, and coughing. It is important to note that infants and children with symptomatic HIV infection lose vaccine-associated antibody titers as HIV infection progresses. Therefore, immediate prophylaxis after exposure to measles, pertussis, diphtheria, or *Haemophilus influenzae* type b is recommended, even if the patient has been previously vaccinated. Prophylaxis should consist of human serum gammaglobulin (measles), erythromycin (pertussis), diphtheria toxoid and penicillin (diphtheria), and rifampin (*H. influenzae* type b). In addition, susceptible infants and children exposed to varicella should receive immediate pose-exposure treatment with varicella zoster immunoglobulin

The mother or other caretaker should be taught about the significance of HIV testing and the potential signs of HIV-related illness in the infant. In addition, the frequency and content of pediatric follow-up should be emphasized. Whenever possible, identify the HIV-infection status in the child as soon as possible with HIV-PCR. Earlier diagnosis allows more time for parents to plan for the future and gives the opportunity for early treatment of the infected child.

Dimension 4. Promote development and accident prevention

The ultimate goal of caring for these children is to maintain health by providing access to appropriate care and support services, to prevent them from acquiring perinatal and postnatal HIV infections, as well as opportunistic infections.

- Educating the mother or caretaker about normal infant growth and development milestones should be emphasized, so that developmental delay can be recognized early.

- Advice on appropriate activities according to age group, including going to school

- Maintenance of sufficient intake of food and water: Appropriate infant feeding: drink boiled water. Infants and young children need more calories and nutrition per body weight than adults because of rapid growth. Food for infants and young children are milk, supplementary foods and essential components of basic foods.

Newborns frequently have long sharp nails, and facial abrasions are common. Using mittens on the neonate or filing the nails with disposable emery boards may reduce this risk (Bastin et al, 1992: 108-109).

Dimension 5. Search for information and seek useful source or resources for HIV-exposed infant care

Provide family education, counseling and support, particularly on:

- Advice on appropriate activities according to age group, including going to school
- Identify what the family needs and provides or refer to appropriate support
- Provide moral support; promote family values, love and caring, counsel and intervene in case of domestic violence
- Involve the family in caring for the child

The most important issue is to keep the child and the family happy. Even in families with an HIV-infected child, an intact happy relationship is still possible with good supportive guidance by the care and support team.

Care-giving behaviors mean the practice of activities that consist of protecting, nurturing, and comforting actions (Bowlby, 1988; Bradly & Caldwell, 1955; Robinson et al., 1997 cited by Pridham et al., 2001: 158). Care-giving behaviors for the HIV-exposed infant is provided by responsible and mature persons, initiated and performed on behalf of socially dependent persons (i.e. the caregiver or mother), for some time, on a continuing basis, to maintain the dependent persons' lives (i.e. the HIV-exposed

infants), and contributes to their health and well-being (Orem, 1991: 361-362). Adequate and appropriate care-giving behaviors can help to maintain normal daily activities, and normal growth and development, like others. When these effective care-giving behaviors are successful, well-being will be possible, not only in children but also their caregivers and family.

Instruments in Measuring the Performance of Self-Care Agency

From the literature review about care-giving behaviors for HIV-seropositive children, the following studies were found:

Patcharin Kittithongsopon (2541) studied child-rearing behaviors for toddlers of HIV-infected mothers according to five dimensions of basic minimum needs and services for children (good health and nutrition; physical strength; promote intelligence, spiritual, emotional, and social; education need; cultural need) of the Ministry of Health. Patchara Suntararachun (2541) studied child-rearing behaviors for toddlers of HIV-infected mothers according to three dimensions of basic minimum needs and services for children (good health and nutrition; physical strength; promote intelligence, spiritual, emotional, and social) of the Ministry of Health. Sopa Sutachayanon (25411) studied a comparison of the quality of life (good health and nutrition; physical strength; promote intelligence, spiritual, emotional, and social; and the basic need in politics) between infants of mothers with and without HIV infection.

The instrument created under the conceptual framework of Orem's theory, by Suthisa Lamchang & Prongnapa Akarachinores (2541), investigated the caregiver's role in caring for HIV-infected children based on the three types of self-care requisites of therapeutic self-care demand (which included 28 items in universal and developmental caring behaviors, and 37 items in health-deviation caring behaviors) of HIV-infected children. The instrument measured the caregiver's role in caring for HIV-infected children with 111 cases who attended the Pediatric Out-Patient Department, and the Pediatric Infectious wards, Maharaj Nakhon Chiang Mai Hospital from January to October 1997. The reliability Cronbach's alpha coefficient was reported at .95 when the questionnaire was tried out with 20 subjects and .93 when the questionnaire was tried out with 111 subjects. The study found that the performance

of the caregivers in caring for HIV-infected children was moderately appropriate, and also moderate in caring for HIV-infected children in general and sick children.

Even though there were several research studies of maternal care-giving behaviors with HIV-seropositive children, it was not enough to explain the correlation among the care-giving behaviors and caregiver capability and basic conditioning factors in Orem's theory of self-care. Thus, in this study, the care-giving behavior of the HIV-exposed infant questionnaire was developed. The developed questionnaire consisted of 5 dimensions of behaviors under the framework of therapeutic self-care demand; 1) to protect from MTCT, 2) to protect from opportunistic infection and prevent the spread of the virus, 3) to care for the sick or when there was health deviation, 4) to nurture, promote health and well-being with tender love and care, and accidental prevention and promotion for growth and development, and 5) to search for information and seek useful resources for HIV-exposed infant care.

Caregiver Capabilities

According to Orem (1991: 175-176), dependent-care agency (DCA) is the complex, acquired ability of mature persons to know and meet some or all of the self-care requisites of persons socially dependent on them. DCA includes the ability to incorporate knowing and meeting health-deviation self-care requirements of infants and children and needed adjustments in universal and developmental-type self-care requisites into ongoing systems of infant care, and parenting activities.

Dependent-care agency was composed of a three-part structure of self-care agency (Taylor, 1989: 134) but the goal was to meet the demands of the persons to be helped or taken care of, not of oneself.

1. Capabilities for dependent-care operations

The most immediate abilities necessary to perform dependent-care operations, of which three have been delineated: (1) estimate operations - investigating conditions and factors in self and environment that are significant for dependent-care, (2) transitional operations - making judgments and decisions about what one can, should, and will do to meet dependent-care requirements, (3) productive operations - performing measures to meet dependent-care requirements.

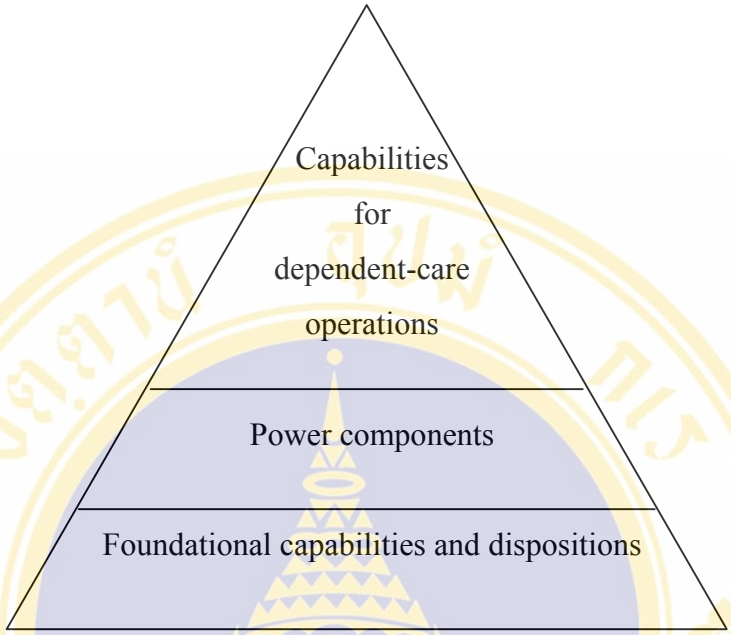

Figure 2 Substantive structure of dependent-care agency
(Adapted from Gast, et al., 1989: 27)

2. Ten power components

It was concluded that the human power enabling the performance of dependent-care operations would be of an immediate nature, intermediate between human functioning and human dispositions. These are referred to as deliberate and goal-oriented actions for the dependent, not general actions. The ten power components include (1) ability to maintain operation and exercise requiring vigilance with respect to dependent-care agency and internal and external conditions and factors significant for dependent-care, (2) controlled use of available physical energy that is sufficient for initiation and continuation of dependent-care operation, (3) ability to control the position of the body and its parts in the execution of the movements required for the commencement and completion of the dependent-care operation, (4) ability to analyze within a dependent-care frame of reference, (5) motivation (that is goal operations for dependent-care which are in accord with its characteristics and its meaning for life, health, and well-being), (6) ability to make decisions about taking

care of the dependent and to operationalize these decisions, (7) ability to acquire technical knowledge about dependent-care from authoritative sources, to retain it, and to operationalize it, (8) a repertoire of cognitive, perceptual, manipulative, communications, and interpersonal skills adapted to the performance of dependent-care operations, (9) ability to order discrete dependent-care actions or action systems into relationships with prior and subsequent actions toward the final achievement of regulatory goals of dependent-care, and (10) ability to consistently perform dependent-care operations, and integrate them with relevant aspects of personal, family, and community living.

3. Foundational capabilities and dispositions

These abilities are foundational and are required for any type of deliberate actions that consist of sets: (1) the set of selected basic capabilities, (2) the set of knowing and doing capabilities, (3) the set of dispositions affecting goals sought, (4) the set of significant orientation capabilities and dispositions. These sets include rational agency, operation learning, learned skills, dependent acceptance, dependent concern, willingness to meet the needs of the dependent, ability to manage self and personal affairs, etc.

This three-part structure of dependent care agency can be hierarchically arranged according to the degree to which the constituent factors are foundational to one another. In other words, foundational capabilities and dispositions are the foundation of the ten power components, and the ten power components are foundational for the capabilities for dependent-care operations (Gast, et al., 1989: 27).

Gast, et al. (1989: 37) noted that the distinction between self-care abilities and self-care actions was not always clear in some of the operationalizations reviewed. The experts on Orem's Nursing Models stated that the measurement of self-care action was not widespread because of its expansive conceptualizations. They are difficult to explain and comprehensively measure (Hanucharurnkul, 1986). Therefore, many researchers have tried to measure self-care agency, which can be divided into 2 research groups: (1) the group that measured the power components of self-care agency, including Denyes, and Hanson and Bickel, and (2) the group that measured power to perform self-care operations, including Kearney & Fleischer, and Evers, et al. (Gast, et al., 1989: 30-37).

The measurement of DCA, power components, or power to perform productive dependent-care operations, may not really determine dependent-care because different individuals' self-care requisites are different and depend on basic conditioning factors, especially the problems of the disease and different treatments. Therefore, persons who are equally able to take care of dependents may not equally meet the needs of dependents. Goal achievement of dependent-care may not be equal. To help the patient meet adequate and continued self-care according to Orem's concept, nurses should evaluate whether the patient or caregiver's abilities could meet the patient's therapeutic self-care demands, and whether they are adequate or limited.

The limited effort to measure parental dependent-care agency/ caregiver-capabilities belongs to Fildey (Fildey, 1986 cited by Haas, 1990: 57) and Schuman (cited by Haas, 1990: 63). Fildey developed the Denyes/ Fildey Dependent-care Agency Instrument (DFDCAI) from Denyes' Self-Care Agency Instrument (DSCAI), which was developed in 1980 to measure self-care agency in adolescence; Fildey changed the target from self-care to dependent-care. She measured the dependent-care agency of 30 parents attending development clinics with their infant discharged from a regional intensive care unit within the previous year. The study showed the sample's education, income, cultural orientation, health status, and number of children the parent had.

In 1987, Schuman (cited by Haas, 1990: 63) reported a study of the relationship between DCA, medically-indicated care needs, and the number of community nursing visits. The DFDCAI was used as the measure of dependent-care agency. The sample consisted of 41 parents of children < 6 years of age, and referred to home health agency. Schuman found that her study concurred with Fildey's, which found that parental DCA was rather high but not correlated with community nursing, visits. Furthermore, DCA was not correlated with parent's age, income, or the number of children the parent had.

The limitations of the two studies above were small sample size, and that they did not nominate demographic data as basic conditioning factors. Thus, there was no relationship between the variables.

Haas (1990) studied the relationships between the power components of DCA, selected basic conditioning factors (BCFS), and coping dispositions (as an instance of

foundational capabilities and dispositions according to Orem's general theory of nursing), in 230 parents of children with special health care needs, using DFDCAI. The study revealed that the number of children in the family, parental age, and events in family life, could predict the power components of DCA, but marital status and socio-economic status could not. Parental age was negatively correlated with the power components of DCA. This meant younger parents had higher level of power components pf DCA than older parents. Events in family life and power components of DCA were also inversely related. Furthermore, coping dispositions, together with all selected BCFs, could predict the power components of DCA of parents of children with special health care needs.

In Thailand, Fildey's instrument (DFDCAI) was translated and modified by Autchareeya Patoomwan (1991) to study basic conditioning factors, social support and dependent-care agency of caretakers of children with acute lymphoblastic leukemia (100 cases). After 3 experts validated the instrument, the Cronbach's alpha coefficient value for the test, with 10 caretakers whose characteristics were similar to the sample, was .92, while with 100 subjects it was .89. The study showed that the age of the caretakers, education period, caring period, and social support, were positively related to the dependent-care agency of the caretakers, and that social support, caring period, education period, and age could predict dependent-care agency with statistical significance. Social support was the best prediction factor and the dependent-care agency scores of the sample group were as high as those of Fildey and Haas.

Jariya Wittaya-sooporn (1996) modified some questions in the instrument translated and modified by Autchareeya Patoomwan from the DFDCAI, to make it appropriate for parents of chronically ill children. After 3 experts validated the instrument, the Cronbach's alpha coefficient of the test, with 10 parents whose characteristics were similar to the sample, was .92, while with 72 subjects it was .82. The parents perceived their DCA at a high level.

However, other studies about BCFs, DCA, and dependent-care (DC) did not use DFDCAI. Nilawan Taveekant (2528) studied the level of care-giving behaviors of parents of children with congenital heart disease, and the predictive variables for care-giving behaviors from selected BCFs, including age, duration of education, knowledge about congenital heart disease, and health beliefs, among 132 subjects. She found the

mean score for care-giving behaviors was moderate. The predictive variables for care-giving behaviors were duration of education, caregiver age, and knowledge about congenital heart disease. The findings were congruent with the study of Ruja Phuphibul (2533) of the roles of 40 parents of children with rheumatic heart disease, which found that the roles of parents were not correlated with age, occupation, income, duration of education, and number of children in the family, and were negatively correlated with the age of the ill child. Furthermore, Sirikanjana Aksiritrirat (2543) studied the relationship between mother's personal characteristics, knowledge about asthma, self-efficacy, social support, and dependent-care capability in caring for asthmatic children aged 0-6 years. A total of 101 subjects were studied, using an instrument she developed herself, and it was found that the dependent-care capability of mostly mothers was at a high level.

Denyes' instrument, before modification by Fildey, was construct-validated by factor analysis. The six factors identified by this analysis were: 1) ego strength and health decision-making capability, 2) relative valuing of health, 3) health knowledge and decision-making experience, 4) physical energy levels, 5) feeling, and 6) attention to health. Denyes presented a comparison of the six DSAI factors and ten power components, and the Nursing Development Conference Group (NDCG) suggested that there were only seven power components, with some foundational capabilities and dispositions (Gast, et al., 1989: 28-30).

No prior study was found using DFDCAI to measure care-giving behavior for the HIV/AIDS group. In this study, the researcher modified and developed the items to make them more specific and to cover the power components that relate to the operations performed for the HIV-exposed infant in the first year. The modified questionnaire was a visual analog scale, as will be described in Chapter III.

Relationship between care-giving behaviors and caregiver capabilities for the HIV-exposed infant

Orem (1991) guided the way in the study of the relationship between DC and DCA, by stating that these two concepts were positively correlated, i.e., the person who has DCA is able to perform effective DC.

Many researchers studied the relationship between DC or DCA, and result of care operations on the dependent or caregiver. The researcher verified the indirect relationship between parental dependent-care agency and parental dependent-care by conceiving that persons who had DCA and performed the activities of care-giving should affect the children or the caregivers themselves, such as the children's health status. Manee Kuprasit, in 2538, found that parents' care agency for children was correlated with the health status of children < 5 years old and could best predict as much as 22.63% of the health status of children significantly (p = .01). Warunee Rattanawan (2001) claimed that all aspects of maternal care-giving behaviors were negatively related to the severity of asthma in children aged 1-5 years, at a medium level , and could predict the severity of asthma significantly, at the .05 to .01 level, or family well-being. Chuanrudee Kaebud (2538) found that maternal dependent-care deficit in epileptic children was negatively correlated with total family well-being with statistical significance (p = .05), and could explain 6.63% of the variance in well-being).

There were some research studies of DCA and DC. In western countries; Kramer, et al. (1985) studied knowledge, attitudes and fears concerning fever and its treatment in 202 parents of febrile children aged 6 months to 6 years, who visited a private clinic in Montreal, Canada. They found that 58% of the parents considered that a body temperature below 38º C could be a fever, 43% perceived a body temperature below 40º C could be harmful to children, 21% treated their children when the body temperature was below 38º C, 15% believed that the temperature could rise up to 42º C, or higher, if left untreated, and 53% decided to wake a febrile child up during the night to administer antipyretic therapy. They concluded that undue fear and overly aggressive treatment of fever were epidemic among parents of infants and young children, even among the highly educated and well-to-do. This study was congruent with Ling's (1998), which was conducted in Malaysia, to determine the responses of parents of 58 patients admitted with febrile convulsion at the University of Malaya Medical Center toward febrile convulsions in the child and their understanding of home management of febrile convulsions. He found that the majority of parents (93%) were frightened or were in a panic state when witnessing

febrile convulsions in their children, so they had inappropriate care-giving behaviors for their febrile children. The study revealed that these parents had dependent-care agency deficit, due to lacking 3 aspects of DCA-knowledge, psychomotor, and accurate attitudes.

In Thailand, Aranya Thaitae (2539) studied the mother's health behaviors of antipyretic drug use in children < 5 years of age at the Children's Hospital and found that 69.5% of the mothers gave an antipyretic drug, and 77.2% sponged to their child before taking him/her to the hospital. In addition, the mothers, who had different care-giving behaviors before taking their children to hospital, had significantly different knowledge of administering antipyretic drugs ($p = .01$). Jariya Wittaya-sooporn studied a causal model of dependent-care giving burden in parents of chronically ill children, and found that the power component of DCA had a direct significantly positive effect on coping with care-giving ($p = .001$). Narumol Gajaseni (2003) studied the relationship among selected basic conditioning factors, child-care agency, and maternal care-giving behaviors upon febrile children aged 3 months to 6 years, and found that child-care agency was positively correlated with maternal care-giving behaviors ($r = .664$, $p < .01$), and that child-care agency could predict maternal care-giving behaviors with statistical significance, at a level of .05 (beta = .189, $t = 2.199$).

Relationship between care-giving behaviors and basic conditioning factors of the HIV-exposed infants

One of the propositions of Orem's theory (1995: 203) is that basic conditioning factors affect self-care and dependent-care. Basic conditioning factors include age, developmental state, environmental factors, family system factors, gender, healthcare system factors, health state, pattern of living, resource availability and adequacy, and sociocultural orientation. In this study, the researcher examined predictors of the care-giving behavior in caregivers of children whose mothers had HIV/AIDS. From the review of the literature, the selected predictors were dependent-care agency, and basic conditioning factors, .i.e, caregiver/ child relationship, caregiver's education, and family income.

Caregiver-Child Relationship

Relationships and feelings about relationships are an important focus, and maintenance of all human relationships constitutes much of women's work (Bunting, 2001: 137). However, all human relationships are constantly changing, and the change to a relationship demanded by a care-giving situation may be great and may involve major categories of work (Corbin & Strauss, 1991).

In this study, relationships were divided into 2 groups: mother-child relationship, and non-mother-child relationship. As a life-threatening chronic illness requires many life changes, HIV can have powerful effects on personal relationships, and caring for a person within the context of this disease with its social and medical connotations is a unique challenge.

Perinatal HIV infection is a two-generational disease that stresses the mother-child relationship. Andrews and colleagues (1993) reported on mother-child relationships in HIV-positive families. They combined record review, an interview, and questionnaires measuring social support and addiction severity in this study of 80 women. The woman's health, level of support, and issues of disclosure were covered. Over 50% of the subjects indicated that their parents (65%) and/or their spouse or partner (53%) was most supportive. Most of these women described a positive mother-child relationship; however the role of motherhood was also described as supportive and burdensome. Issues of fear and worry over the child's health, and anger from others, guilt, fatigue, and grief, affected their parenting.

An effective mother-child relationship influences the subsequent cognitive, emotional, and social development of the child (cited by Johnson & Lobo, 2001: 40).

Parents of exposed infants experience feelings of guilt for not protecting their children from contracting the virus, either prenatally or from other means. The study of Johnson & Lobo (2001) described and compared mother-child interactions, between HIV-positive and HIV-negative mothers, by using the Nursing Child Assessment Teaching Scale (NCATS). They found that mother-child interaction was less than optimal. Moreover, HIV-positive mothers who reported depression symptoms did not show a noticeable reduction in their interaction skills compared with non-depressed mothers. The finding indicated that there was no impact from maternal HIV infection in mothers with early-stage disease, or that the adaptive and coping abilities of the

HIV-positive mother and her child compensate for it. The two studies indicated that the mother-child relationship was conducted with good and purposeful care-giving behaviors.

Overall, a range of emotions may negatively influence the AIDS patient-caregiver relationship. The range of emotions experienced by AIDS patients and caregivers is often negative in nature and includes feelings of depression, anxiety, and fear. Some caregivers of AIDS patients have depressed feelings of anticipatory grief and compassion about their loved one becoming infected, and anger about the behaviors they practiced, which led to HIV disease. They also reported experiencing emotional, social, physical, and financial burdens in relation to their roles as caregivers (Baker et al, 1996, Folkman et al, 1994, Matocha, 1992; Raveis & Siegel, 1991 cited by Baker, 1999: 205). Another interesting concern expressed by caregivers was the burden of keeping the HIV diagnosis a secret from others in their social and family circle who were known to be judgmental. Negative emotions may also impact upon other members of the household, family, and social circle (Baker, 1999: 205).

From the literature review, research into childrearing families living with HIV/AIDS is rather limited, especially comparisons of the care-giving behaviors between mother (biological parent) and other caregivers.

The study of family experiences when a child is HIV-positive by Cohen, et al (1995) dealt with reports by natural and foster parents caring for a child 3 years of age or younger with vertically-transmitted HIV disease. Issues common to both groups, and specific to the natural and foster parents, were explored. The issues discussed by natural mothers included guilt, their relationship with their infected child, and the effects of their HIV infection on the family. Issues discussed by foster mothers included their decision to foster an HIV-positive child, characteristics of their HIV-positive foster children, fears of transmission, and the effect of HIV-positive foster child(ren) on their natural family. Issues common to both sets of mothers included disclosure, support, preparation for the HIV-positive child's death, and life in general. The study also found that all four cases of natural mothers, and two of the HIV-negative foster mothers developed very special relationships with the children (Cohen, et al, 1995). The other two HIV-negative foster mothers had not developed such

special relationships. This is also congruent with the pattern of relationship that effect care-giving behavior.

Family members (spouses, adult children, and parents) have provided traditional sources of help to people with chronic and life-threatening illness. Although the caregivers (members of the family) are willing to provide support to the AIDS patient, they may also harbor fears of contracting the virus (Wardlaw, 1994: 373). Cohen & Nehring (1994) reported that the greatest expressed fears of foster parents of children with HIV infection were fear of infection or transmission, fear of the child dying while in the foster parent's care, and stigmatization or discrimination.

Therefore, the researcher assumed that the caregiver who was not the biological parent would be more ineffective and inappropriate than the biological parent. In conclusion, the caregiver/ child relationship can predict the care-giving behavior of caregivers of HIV-exposed infants.

Caregiver's education

Education is one of the factors concerned with personal behavior. Education allows human beings' growth in intelligence and knowledge. Orem (1985: 175) stated that education helps persons to develop skills and knowledge, and good attitudes for self-care and dependent-care. A person with a high educational level can better understand the health condition and have greater ability to make decision than those who are less educated (Pender, 1982: 162-163), and would perceive and understand the availability of learning and seeking resources to perform health behaviors better than a person with a low educational level (Whetstone, 1986: 967).

Sakaorat Paungjan (2538) found that the level of a mother's education had a positive correlation with dependent-care agency in chronic children. In addition, Orathai Somnarin (2538) found that the level of a mother's education had a significant positive correlation with dependent-care agency of the AIDS caregiver. The study of Patcharin Kittithongsopon (2541) found that the level of a mother's education had a positive correlation with the care-giving behaviors of toddlers of HIV-infected mothers. Furthermore, the study by Suthisa Lamchang and Prongnapa Akarachinores (2541) found that the level of a mother's education had a positive correlation with the role of caregiver for HIV-infected children.

Income of the caregiver's family

Income is an important factor for the capability of a person to seek health care. Orem (1985: 122) stated that income is an important resource for initiating self-care and it is maintained for the dependent person. High income families would have better opportunities to seek facilities and useful things for health, including selecting suitable health services, than low income families (Pender, 1982: 161-162). The study of Asumpintrap reported that dependent-care agency of mothers of children with congenital heart disease had a positive correlation with family income. The study of Kittithongsopon (2541) found that family income had a positive correlation with the care-giving behaviors of the toddlers of HIV-infected mothers, while the study by Lamchang and Akarachinores (2541) also found that family income had a positive correlation with the roles of caregiver of HIV-infected children.

From the review of the literature and related studies discussed above, it was found that dependent-care agency, or caregiver's capabilities, is an important factor related to care-giving behavior, to respond to therapeutic self-care demand, to maintain daily life and well-being. However, self-care operation or dependent-care operation capabilities (care-giving behavior) may be determined by basic conditioning factors such as caregiver-child relationship, caregiver's education, and family income. Thus, the researcher decided to study whether those factors were related to the care-giving behaviors of caregivers of HIV-exposed infants.

It was hoped that the results of this study would help nurses make recommendations to promote dependent-care operation capabilities (care-giving behavior) for the HIV-exposed infant, so as to allow them better to maintain their daily lives, health, and well-being.

CHAPTER III
MATERIALS AND METHODS

This descriptive research was designed to study the predictive factors of care-giving behaviors for HIV-exposed infants by the following predictors: caregiver-child relationship, caregiver education, family income, and caregiver capabilities.

Population and Sampling

The target population of this study was caregivers of HIV-exposed infants who visited the infection clinic of three hospitals, i.e., the outpatient departments of Ramathibodi Hospital, Bamrasnaradura Hospital, and Phramongkutkhlao Hospital. The samples were selected by purposive sampling from February to June 2002. The characteristics of the samples were as follows:

1. Primary caregiver with major concern for the child's life and knew about the mother's infection (HIV antibody-positive).
2. Able to understand and communicate in the Thai language.
3. Caregiver agreed to participate in the study.
4. The HIV-exposed infant in the first year of age.

The sample size was calculated using Thorndike's equation to reach an adequate power for regression analysis (Thorndike, 1978 cited by Prescott, 1987: 130-133). Number of subjects (n) = 50 + (10 x number of independent variables).

In this study, there were four independent variables: caregiver-child relationship, caregiver's education, family income, and caregiver capabilities. The calculation of sample size was as follow:

N = 50 + (10 x 4) = 90

Independent variables were in a continuous scale; the caregiver-child relationship was in the nominal scale. It was changed to dummy variables as follows:

Parents	1	0
Others	0	1

After the data was cleaned, the two cases were deleted because the inclusion criteria were not met. They were only person who brought the child to meet the

doctors but they were not the primary caregiver. Thus, the samples for this study were 88 caregivers.

Setting

The researcher collected data at the infectious diseases clinics of three hospitals, i.e., the outpatient departments of Ramathibodi, Bamrasnaradura, and Phramongkutkhlao Hospitals.

The characteristics of the setting:

Each hospital provided services that included measuring body weight, height, and temperature. Another service provided by Bamrasnaradura Hospital was measurement of head and chest circumference. No formal health education program was provided by either doctors or nurses. If a child needed special investigation, or the caregivers had any problems, the doctors and/or nurses would provide advice individually. The statistics indicated that approximately 8-12 cases/month of HIV-exposed infants received services at the outpatient departments of Ramathibodi and Phramongkutkhlao hospitals, and 30-40 cases/month of HIV-exposed infants who received services at the out-patient department of Bamrasnaradura Hospital.

Instrumentation

The instruments used in this study consisted of four parts: 1) Questionnaire for Background Information of Caregiver, 2) Questionnaire for Background Information of the HIV-exposed infant, 3) The Caregiver Capabilities Questionnaire, and 4) The Care-giving Behaviors Questionnaire for the HIV-exposed Infant. The questionnaires are described, as follows:

1. Questionnaire for background information of the caregiver

The background information data included: age of caregiver, caregiver-child relationship, caregiver status, years of education, number of people in the family of the caregiver, family income, financial status, problem associated with cost of medical care and other expenses, and the help received.

2. Questionnaire for background information of the HIV-exposed infant

The background information data included: age of the child, time when the mother knew about their child's HIV/AIDS status, the child's health status, and the drugs or treatment received.

3. The caregiver capabilities questionnaire

The researcher modified the questionnaire from Denyes/Fildey Dependent-Care Agency Instrument (DFDCAI) (Fildey, 1986 cited by Haas, 1990), emphasizing measurement of power components according to Orem's general theory of nursing (Orem, 1985).

The original instrument was Denyes' Self-Care Agency Instrument (DSCAI) which developed to measure self-care agency in adolescent. It was constructed – validated by factor analysis, and found six factors from ten power components. They were 1) ego strength and health decision-making capability, 2) relative valuing of health, 3) health knowledge and decision-making experience, 4) physical energy levels, 5) feeling, and 6) attention to health. The Nursing Development Conference Group (NDCG) compared the six factors from ten power components and suggested that there were only seven power components, with some foundational capabilities and dispositions (Gast, et al., 1989: 28-30).

In 1986, Fildey developed DFCAI to measure parental perceptions of DCA in 30 parents of infants discharged from a Regional Neonatal Intensive Care Unit (RNICU), attending a developmental assessment clinic, namely the Denyes/ Fildey Dependent-care Agency Instrument (DFDCAI). The instrument consists of 29 visual analog scale and 3-open ended question. Evidence for construct validity was obtained from examining correlations between the DFCAI and Pridham's Problem Solving Instrument (PPS). A Pearson correlation was computed between the mean scores of the PPS and DFCAI, but the result did not support the hypothesized relationship ($r = .3365$, $p = .069$). Fildey stated that this might be caused by similarity and small sample size (Haas, 1990: 57-60). Although Fildey (1986, cited by Haas, 1990) did not report on the internal consistency of DFDCAI, Haas (1990) was access to the original raw data and discovered that the Cronbach's alpha coefficient was .84, with the Cronbach's alpha coefficient of her own study .85.

Haas (1990) adopted the DFDCAI and examine construct validity by factor analysis. She found that 23 of 31 items of DFDCAI could be derived into 5 factors, but the rest (8 items) did not load on any factor. This factor analysis was dissimilar from that of DSCAI, which Denyes did by using her original sample of 161 adolescents from public high school. She found that 6 factors were identified and

correlated with only 7 of 10 power components of self-care agency according to Orem's concept, including (1) component 1: maintaining attention and requisite vigilance, (2) component 2: controlled use of the available physical energy, (3) component 4: reasoning within a self-care frame of reference, (4) component 5: motivation or goal orientation towards self-care, (5) component 6: decision making about self-care, (6) component 8: repertoire of skills for self-care, and (7) component 9: ordering discrete self-actions. Three power components that were not correlated with these 31 items were (1) component 3: control of the position of the body, (2) component 7: acquiring, retaining, and operationalizing technical knowledge about self-care, (3) component 10: integrating self-care operations with aspects of living, including perception of self-feeling and relative valuing of health (Gast, et al., 1989: 28-33).

In Thailand, Autchareeya Patoomwan (2534) was translated and modified the DFDCAI to study basic conditioning factors, social support and dependent-care agency of caretakers of children with acute lymphoblastic leukemia. The questionnaire consists of 29 visual analog scales and 3-open ended questions, and was validated by 3 experts. The Cronbach's alpha coefficient value for the test with caretakers whose characteristics were similar to the sample, was 0.92, and 0.89 for the 100 caretakers in the study. In 1996, Jariya Wittaya-sooporn modified the instrument from Thai version of Autchareeya's to make it appropriate for parent of chronically ill children. The 3 experts validated and the value of Cronbach's alpha coefficient was .92 when use with 10 caretakers, and when use with 72 caretakers the Cronbach's alpha coefficient was 0.82.

In this study, the Caregiver Capabilities for the HIV-exposed Infant Questionnaire was modified by the researcher and advisors in order to make it appropriate for the caregiver of the HIV-exposed infants. Five experts confirmed content validity of this questions: two nursing educators with a expertise in Orem's Nursing Theory, two nursing educators with expertise in nursing care for pediatric infections, and one infectious control nurse with clinical experience and education in clinical infection control (Appendix A).

In the modified questionnaire, some questions about knowledge in sex and sexual were deleted, changed to question about the transmission and knowledge about

the viral infection and opportunistic infections. The open-ended questions also deleted.

The Caregiver Capabilities for the HIV-exposed Infant Questionnaires consisted of 29 items in 5 aspects of power components as follows:

The first aspect was to maintain attention and realization about the children, and consistently perform and integrate them with relevant aspects of personal, family, and community living, comprised 8 items (7, 8, 9, 10, 12, 18, 19, and 20).

The second aspect was the ability to control the use of available physical energy and body posture sufficient for the initiation, continuation and completion of dependent-care operations, comprised 5 items (items 13 to 17).

The third aspect was the ability motivation to take care of the children with goal orientation in accord with the child's characteristics and meaning of life, health, and well-being. This aspect comprised 5 items (items 21 - 23 and 25-26).

The fourth aspect was the ability to reason and make decisions about the care of the child and to operationalize the decision, and a repertoire of cognitive, perceptual, manipulative, communication, and interpersonal skills adapted to the performance of child-care operations. This aspect comprised 8 items (items 1–6, 11, and 24).

The last aspect was the ability to create and maintain the relationship and the ability to seek and search for success in accordance to its characteristics and it's meaning for life, health, and well-being. This aspect comprised 3 items (items 27- 29)

The modified questionnaire was a ten-centimeters line visual analog scale, including 22 positive items (items 1-8, 10-13, 16, 18-24, and 27, 28) and 7 negative items (items 9, 14, 15, 17, 25, 26, and 29).

To score a positive item, the answer line was directly measured from the left end to the mark with a standard ruler in centimeters, and for the negative item, 10 minus the number from the left end to the mark with a standard ruler in centimeters. For this part, possible scores were between 0-290. The mean scores were computed. The scores for caregiver capabilities were evaluated by per cent, and were evaluated in 4 levels by modifying the criterion for evaluation of education (Department of Curriculum and Instruction Development, Ministry of Education, 1991a, 1991b) as follows:

The very good suitable level referred to a score more than 79% of the highest possible scores.

The good suitable level referred to a score between more than 69 to 79 % of the highest possible scores.

The moderately suitable level referred to a score between 59 to 69 % of the highest possible scores.

The low suitable referred to a score less than 59% of the highest possible scores.

A pilot study was conducted with twenty subjects who met the inclusion criteria and were willing to complete the questionnaire. The Cronbach's coefficient value was .87, and .86 for the main study with 88 caregivers

4. Care-giving Behaviors Questionnaire for the HIV-exposed Infant

The Care-giving Behaviors Questionnaire for the HIV-exposed Infant was developed by the researcher from the review of the literature about theories in HIV/AIDS children, caring for the HIV-exposed Infant, the dependent-care concept in the Self-care Theory of Orem's Nursing Theory, and from the Questionnaire of Maternal Behaviors in Caring for HIV/AIDS Children, developed by Suthisa Lamchang & Prongnapa Akarachinores (2541).

The modified questionnaire consisted of 5 domains of care-giving behaviors for the HIV-exposed infant: (1) To protect mother to child transmission (MTCT) comprised 5 items (items 1, 12, 14, 19, and 43).; (2) To protect opportunistic infections, and to prevent the spread of the virus comprised 21 items (items 11, 13, 15-18, 20-33, 41); (3) To care for the sick or when the symptoms happen or change comprised 8 items (34-40, 42); (4) To nurture and promote health and well-being with tender-love and care, and accident prevention comprised 9 items (2-10); and (5) To search for information and seek sources or resources that are useful for HIV-exposed caring comprised 10 items (44-53).

The questionnaire consisted of 53 items, including 49 positive items (items 2, 4-18, 20-22, 25-53) and 4 negative items (items 1, 19, 23, 24). It was rated on a 3-point Likert scale (1 = never practiced, 2 = sometimes practiced, and 3 = always practiced). Total possible scores ranged from 53-159. The scores were computed by mean scores. The scores for caregiver capabilities were evaluated by per cent.

Quality of the Instrument

Validity

Suthisa Lamchang & Prongnapa Akarachinores (2541) developed the interview instrument from the self-care concept in Orem's Nursing Theory. The instrument was divided into two parts: the performance of the caregivers in universal care, and the performance of the caregivers for HIV-infected children when they were ill. Universal care was composed of 28 items about food care, activity and rest, housing and ventilation, balance between living alone and social participation, well-being and hazard prevention, immunization and promotion of growth and development. In caring for HIV-infected children when they are ill, composed of 37 items about caring for fever, respiratory infection, gastrointestinal tract infection, oral thrush and oral ulcer, denying food, skin lesion or generalized ulcer, and otitis media.

The construct validity was examined by three experts in nursing care for the HIV-infected child, expertise in Orem's Nursing Theory, and expertise in statistics for research.

In this study, the Care-giving Behaviors Questionnaire for the HIV-exposed Infant was modified by the researcher and the advisors in order to make it suitable for anti HIV-infected mothers or caregivers who knew that the mothers of the HIV-exposed were anti HIV-seropositive. Five experts confirmed the content validity of the questionnaire: two nursing educators with expertise in Orem's Nursing Theory, two nursing educators with expertise in nursing care for pediatric infections, and one infectious control nurse with clinical experience and an education in clinical infection control (Appendix A).

Reliability

The Cronbach's alpha coefficient values of the interview instrument for the performance of caregivers in caring for HIV-infected children (Suthisa Lamchang & Prongnapa Akarachinores), when tested with 20 caregivers, whose characteristics were similar to the sample, the Cronbach's alpha coefficient was .95 and with 111caregivers was .93.

The Care-giving Behaviors for the HIV-exposed Infant Questionnaire in this study was tested using Cronbach's alpha coefficient. A pilot study was conducted with 20 caregivers who met the inclusion criteria and were willing to complete the

questionnaire. The result showed that the Cronbach's alpha coefficient was 0.84. For the main study with 88 caregivers, the value of Cronbach's alpha coefficient was 0.80.

Protection of Human Subjects

The Review Committee of Ramathibodi Nursing School reviewed this study. The data was collected after the approval form was granted by Faculty of Medicine, Ramathibodi Hospital, the directors of the infectious clinic of Pediatric Out-Patient Department Faculty of Medicine, Ramathibodi Hospital, Bamrasnaradura Hospital, and PraMongkutklao Hospital. Potential participants were informed about the purpose of the study, their rights to decline or withdraw from the study anytime. Their names were not attached to the data. A code number was used in the data analysis instead. There was no known risk by participants in this study. There was no cost for, nor was there any payment to participants in the study.

Data Collection Procedure

Data collection was carried out by the researcher after approval was granted by the Faculty of Graduate Studies, Mahidol University, the Committee on Human Subjects, Faculty of Medicine, Ramathibodi Hospital, and the directors of the infectious disease clinics of the pediatric out-patient departments of the Faculty of Medicine, Ramathibodi Hospital, and Bamrasnaradura and Phramongkutkhlao hospitals. The researcher was permitted to collect data between February to June 2002, at the following scheduled times:

Ramathibodi Hospital	Monday, 1:00- 3:00 pm.
Phramongkutkhlao Hospital	Tuesday, 08:00-12:00 am.
Bamrasnaradura Hospital	Friday, 07:00-12:00 am.

The questionnaire was used for data collection. The procedures of data collection were described as follows:

1. The researcher contacted the physician, the head nurse, and the staff nurses of the outpatient department of each hospital for permission and facilitation.

2. The researcher prepared a place for data collection, a private room, away from the bustling scene, to enable the caregivers to concentrate.

3. The respondents who met the inclusion criteria of the study based on their medical history were selected.

4. While the patients were waiting for the physician, the researcher explained the purpose of the study and assured the potential subjects of confidentiality, anonymity, and the freedom to withdraw from the study at any time. If the caregivers agreed to participate in the study, they were asked to sign a consent form (Appendix B) giving permission for enrolment into the study.

5. They were taken to a private room with their child after being provided with a queue number to see the pediatrician. The researcher assured them that they would not miss the opportunity to see the pediatrician.

6. The researcher explained how to answer the questionnaires in sequence: 1) Background Information, 2) Questionnaire for Background Information on the Children, 3) Caregiver Capabilities Questionnaire, and 4) Questionnaire for Care-giving Behaviors for the HIV-exposed Infant. It took approximately 20-30 minutes to complete the questionnaires. They were allowed to ask the researcher when they did not understand the questions.

7. While the respondents answered the questionnaires, the researcher helped them look after their child. If the children cried or had to see the physician, the researcher would allow the mothers to stop answering the questionnaire to soothe the child or see the pediatrician, and continue later.

If the caregiver couldn't read or write, the researcher will read and ask the caregiver to point the position on the line, then the researcher write the × at that position on the line.

8. Data were collected from approximately 5 subjects per day. Collection of data was one-by-one and firm respondents would participate only once.

9. After that, the researcher checked whether all items in the questionnaires had been completed.

10. After completing the questionnaires, the researcher allowed the respondents to ask any questions and gave them instructions on how to care for children.

11. The researcher prepared the questionnaires for data analysis.

Data Analysis

The "Statistical Package for the Social Sciences" (SPSS for Windows) Version 11.0 was used in data analysis. The data analysis procedures were as follows:

1. Background information was analyzed by using frequency, percentage mean, and standard deviation.

2. Scores for caregiver capability and care giving behavior for the HIV-exposed infant were analyzed using possible range, minimum, maximum, mean, standard deviation, skewness and kurtosis.

4. Each item of caregiver capabilities and care giving behaviors for the HIV-exposed child was analyzed using mean, frequency, and percentage (Appendix D).

5. The relationships between each pair of basic conditioning factors, caregiver capabilities, and care giving behaviors for the HIV-exposed infant, were analyzed using Pearson's product-moment correlation coefficients.

6. Hierarchical multiple regression analysis was applied to examine the power of prediction of care-giving behaviors for the HIV-exposed infant from basic conditioning factors and caregiver capabilities.

7. The significance level of alpha was set at 0.05.

CHAPTER IV
RESULTS

This descriptive research was conducted to study predictive factors for care-giving behaviors of HIV-exposed infants by caregiver's capabilities and basic conditioning factors, i.e., caregiver-child relationship, caregiver education, and family income.

The sample size from Throndike's recommendation (1978 cited by Prescott, 1987: 130-133) was 90 caregivers. After the data was collected, the two samples were deleted because the inclusion criteria for the primary caregivers were not met. They were only the person who brought the child to meet the doctor. Thus, the sample size for this study was 88 caregivers.

The results of the study are described in 5 parts, as follows:

1. Socio-demographic background information of the caregivers.
2. Socio-demographic and medical characteristics of the HIV-exposed infants.
3. The caregiver's capabilities and care-giving behaviors of the caregivers for the HIV-exposed infants.
4. The relationships among care-giving behaviors for the HIV-exposed infants, caregiver capabilities, and basic conditioning factors, i.e. caregiver-child relationship, caregiver education, and family income.
5. The predicting factors of the care-giving behaviors for the HIV-exposed infants.

1. Socio-demographic background information of the caregivers

Table 1 Frequency, percentage, mean, standard deviation, minimum, and maximum of the caregivers (n = 88)

Variables	Frequency	Percentage
Age (years)		
< 20	7	8.0
21 - 25	31	35.2
26 - 30	24	27.3
31 - 35	14	15.9
36 - 40	7	8.0
> 40	5	5.7
Mean = 28.5 S.D. = 7.8 Min = 17 Max = 69		
Marital status		
Married	74	84.1
Widowed	6	6.8
Divorced	1	1.1
Separated	7	8.0
Number of family members		
1 - 5	63	71.6
6 - 10	19	21.5
> 10	6	6.8
Mean = 4.88 S..D. = 2.69 Min. = 2 Max = 15		
Education		
No formal education (0 year)	4	4.5
Primary education (1 – 6 years)	28	31.8
Secondary education (7 – 12years)	44	50.0
College diploma (13 - 15years)	6	6.8
Degree and above (> 16years)	6	6.8
Mean = 8.86 S.D. = 3.95 Min = 0 Max = 16		

Table 1 (Cont.) Frequency, percentage, mean, standard deviation, minimum, and maximum of the caregivers (n = 88)

Variables	Frequency	Percentage
Family income (Baht)		
0 - 5,000	26	29.5
5001 - 10,000	33	37.5
10,001 - 15,000	14	15.9
15,001 - 20,000	7	8.8
> 20,000	8	9.1
Mean = 11,213.64 S.D. = 9887.89 Min = 0 Max. = 50,000		
Economic status		
Adequate	35	39.8
Adequate with saving	7	8.0
Adequate with saving and in debt	4	4.5
Inadequate	7	8.0
Inadequate and in debt	35	39.8
Medical bills		
On welfare	6	6.8
No welfare	82	93.2
Caregiver-child relationship		
Mother (Father)-child relationship	82	93.2
Non mother-child relationship	6	6.8

Table 1 shows that the ages of the caregivers ranged from 17-69 years (mean = 28.5, S.D. = 7.865). The majority of the caregivers (35.2%) were 21-25 years of age; only 8.8% were under 20 years old, and 5.7% were over 40 years old. About 84.1% were married and 93.2% were mothers (include father).

The largest group of caregivers (50%) had secondary education (duration of education: 7-12 years), whereas 4.5% had no formal education. The majority number of family members (71.6%) was 1 to 5 persons. Only 6.8% had more than 10 persons.

Family incomes ranged widely, no income to 50,000 Baht monthly. Most of the caregivers (37.5%) had family incomes of 5,001-10,000 Baht/month, and 29.5% of the caregivers had family income of 5,000 Baht and lower. The majority of the caregivers (39.8%) had inadequate family income and in debt, whereas 39.8% had adequate family incomes. The majority of the caregivers (93.3%) had no welfare. Only 6.7% had welfare from the office of the caregiver.

Table 2 Frequency and percentage of caregivers by the support they received

Support	Always (%)	Sometimes (%)	Never (%)
Money	31 (35.2)	35 (39.8)	22 (25)
Drug	30 (34.1)	32 (36.4)	26 (29.5)
Milk	75 (85.2)	9 (10.2)	4 (4.5)
Child-bearing	50 (56.8)	29 (33.0)	9 (10.2)

Table 2 shows that 39.8% of the caregivers sometimes received financial (money) support, 85.2% always received milk from the hospital, and 55.7% of the caregivers always received child bearing support. The percentages of drug support were very similar, at 29.5.0%, 36.4%, and 34.1%, for not received, sometimes received, and always received, respectively.

2. Socio-demographic and medical characteristics of the HIV-exposed infants

Table 3 Frequency, percentage, mean, standard deviation, minimum, and maximum of the HIV-exposed infants.

Variables				Frequency	Percentage
Age					
	<	1	month	13	14.8
>1	-	3	month.	15	17.0
>3	-	6	month.	21	23.9
>6	-	12	month.	41	44.3
Mean = 6.33	S.D. = 3.96		Min = 1	Max = 12	Median = 6.28
Anti-HIV positive: During pregnancy				**68**	**100 (75.0)**
Preg.	1-3		month	27	30.7
Preg.	4-6		month	28	31.9
Preg.	7-9		month	13	12.4
Anti-HIV positive: Before pregnancy				**20**	**100 (25.0)**
Mother's age	15 - 20		yrs	11	55.0
	21 - 30		yrs	8	40.0
	> 30		yrs	1	5.0
Mean = 21.30	S.D. = 4.33		Min = 15	Max = 31	
Child health			Healthy	82	93.2
			Sick	6	6.8
Treatment			Only follow-up	33	37.5
			With medical treatment	55	62.5
Number of drugs received					
none				33	37.5
1	drug			49	55.7
2	drugs			3	3.4
3	and more			3	3.4

Table 3 shows that the age of the largest group (44.3%) of the HIV-exposed infants was six to twelve months. The caregivers of the largest group of children (75%) knew that the children were HIV-exposed during their mothers' pregnancy, and 22.7% of the caregivers knew that the mothers of the HIV-exposed infants were HIV antibody-positive before pregnancy. Most of the HIV-exposed infants (93.2%) were healthy. About 37.5% of the children still had follow-up without medical treatment, but 62.5% of the children had follow-up with medical treatment, and 55.7% had received only one kind of drug.

3. Caregivers' capabilities for the HIV-exposed infant

Table 4. Possible range, minimum, maximum, mean, standard deviation, and skewness of the caregivers' capabilities for the HIV-exposed infants. (n=88)

Caregivers' capabilities	Possible Range	Minimum	Maximum	Mean	S.D.	Skewness
Total capabilities	0 - 290	143.20	287.4	207.65	33.08	.150
Asp.1 Attention	0 - 80	31.80	79.60	55.77	10.22	.166
Asp.2 Physical energy	0 - 50	18.50	50.00	36.74	8.08	-.081
Asp.3 Motivated	0 - 50	25.70	50.00	39.39	6.11	-.131
Asp.4 Reason	0 - 80	30.50	80.00	57.93	11.62	-.080
Asp.5 Relation	0 - 30	0.00	30.00	17.81	6.49	-.284

Table 4 shows the total scores, subscale scores and the levels of the caregivers' capabilities for the HIV-exposed infant.

The total scores of the caregivers' capabilities had a mean of 207.65.

The subscales scores of the caregivers' capabilities had a mean potentially high when compare with the highest possible scores.

Table 5. Frequency of the level of the caregivers' capabilities for the HIV-exposed infants (n=88)

Caregivers' capabilities	Low 0 – 59%	Moderate 59.1 – 69 %	Good 69.1 - 79%	Very good 79.1 - 100%
Total	14	25	27	22
Aspect 1. Attention	43	-	24	21
Aspect 2. Physical energy	21	18	16	33
Aspect 3. Motivation	4	17	21	46
Aspect 4. Reason	35	3	16	34
Aspect 5. Relation	42	15	15	16

Table 5 shows the level of caregivers' capabilities scores. The frequency of total scores of caregivers' capabilities were categorized in 4 levels base on the criterion for evaluation of education (Department of Curriculum and Instruction Development, Ministry of Education, 1991a, 1991b); low(0 – 59%) moderately (59.1 – 69 %), good (69.1 - 79%), and very good (79.1 - 100%).

The subscale scores in aspect 1 (the abilities to maintain attention and realization about the children, and consistently perform and integrate them with relevant aspects of personal, family, and community living), and aspect 5 (the ability to create and maintain the relationship and the ability to seek and search for success in accordance to its characteristics and it's meaning for life, health, and well-being) showed that the most of the caregivers got the capabilities in low level.

The subscale scores in aspect 2 (the ability to control the use of available physical energy and body posture sufficient for the initiation, continuation and completion of dependent-care operations), and aspect 3 (the ability motivation to take care of the children with goal orientation in accord with the child's characteristics and meaning of life, health, and well-being) showed the very good level of the capabilities.

In aspect 4 (the ability to reason and make decisions about the care of the child and to operational the decision, and a repertoire of cognitive, perceptual, manipulative, communication, and interpersonal skills adapted to the performance of child-care

operations), the most of the caregivers divided into 2 groups; low level (35), and very good level (34).

4. care-giving behaviors for the HIV-exposed infants

Table 6. Possible range, minimum, maximum, mean, standard deviation, and skewness of care-giving behaviors for the HIV-exposed infants (n=88)

Care-giving behaviors	Possible range	Minimum	Maximum	Mean	S.D.	Skewness
Total	53 - 159	105.00	146.00	126.83	9.57	-.373
Dom1 MTCT	5 - 15	12	15	14.42	.82	-1.45
Dom 2 Infection	21 - 63	44	61	53.15	4.50	-.310
Dom 3 Illness	8 - 24	8	23	16.33	3.38	-.301
Dom 4 Promote	9 - 27	18	27	23.78	2.49	-.631
Dom 5 Search	10 - 30	10	26	19.15	3.72	-.462

Table 6 shows the total score and subscale scores of the care-giving behaviors for the HIV-exposed infant. The mean of the total scores for care-giving behaviors were 126.83 from 159.

When the mean score of the subscale scores compared with the highest possible score, they were potentially high in every domain.

After total scores and subscale score were considered, the frequency of each item was considered. There were some care-giving behaviors that could affect the risk of mother-to-child transmission and the progress of severe infection.

Table7. Frequency of the interesting care-giving behaviors

The interesting behaviors	practice every day / every times	practice some day / sometimes	never practice
Item 9. Don't let the child pick up the toy or the falling food and put into the mouth	33	33	22
Item 19. Feeding the food from the caregiver's mouth	2	10	76
Item 23. Allowing the child to contact the sick person	45	42	1
Item 24. Allowing the child to play with animals	65	13	10
Item 36. Bring the child to the doctor immediately, when The child get fever, cough, and running nose	33	36	19
Item 39. Bring the child to the doctor immediately, when the child diarrhea more than two times a day	40	16	32
Item 42 Bring the child to the doctor immediately, when there were oral thrush	13	22	53

Table 7 shows the interesting behaviors that effected to MTCT and the progress of severe infections.

The behaviors in item 19 about feeding the food from the caregiver's mouth every time and sometimes were 2, and 10 caregivers. The quality data found that the nine caregivers were mothers and the other three caregivers were non-mother. These behaviors were not at risk for only the HIV virus, but also the others, etc, hepatitis virus A. In item 9, 23, and 24 shows the behaviors that parents should be aware and prevent the children from the increasing of the opportunistic infection. In item 36, 39, and 42 shows the behaviors that parents have to know and do when the symptoms occur, but the care givers response that they did sometimes and never practice in the high rate.

4. Predictors of care-giving behaviors for the HIV-exposed infant

The assumptions of the regression analysis were examined, including consideration of the residual scatter plot (Appendix E), which indicated that the assumptions of the regression analysis were met. Multi-collinearity, considered by correlations among the independent variables greater than .65, was not met (Burn & Grove, 1997: 487). Some independent variables had low correlations with one another (r = -.216). The Durbin-Watson value was near 2 (1.905) indicating that the regression error had no autocorrelation (Kalaya Wanichbancha, 2544: 332-344). The Pearson's product moment correlations between the variables are shown in Table 8.

However, some variables, such as caregiver-child relationship, caregiver's education, and family income, did not have normal distribution by histogram and Kolmogorov-Smirnov Test, whereas the sum score for caregiver's capabilities of the caregivers and the sum score of the care-giving behaviors of the caregivers had normal distributions. Inverse transformation was used on family income to correct the skewness of the distribution. The caregiver-child relationship was changed to dummy variables. The result is shown in Table 9.

Table 8 Pearson's product moment correlation between variables (n=88)

Variables	c / c relationship	Caregiver education	Family income	Caregiver capabilities	Care-giving behaviors
1. Caregiver/child relationship	1				
2. Caregiver education	.258** (.008)	1			
3. Family income	-.112 (.150)	-.213* (.024)	1		
4. Caregiver capabilities	.079 (.234)	.064 (.278)	.147 (.087)	1	
5. Care-giving behaviors	.203* (.030)	.389** (.000)	.113 (.150)	.228* (.017)	1

* p < .05 ** p < .001

Table 8 shows that the care-giving behaviors for the HIV-exposed infant were significantly positively correlated with both years of education (r = .389, p = 0.000), and caregiver capabilities (r = .288, p = .017). Care-giving behaviors for the HIV-exposed infant were significantly positively correlated with caregiver-child relationship (r = .203, p = .030). In addition, there was a low correlation between variables; family income was negatively correlated with caregiver education (r = -.213, p = 0.24).

Table 9 Hierarchical multiple regression analysis between predictors and the care-giving behaviors for the HIV-exposed infant (n=88)

Predictors	Step 1			Step 2		
	B	Beta	t	B	Beta	t
Caregiver/Child relationship	4.555	.123	1.208	4.074	.110	1.090
Caregiver education	.990	.403	3.906**	.956	.389	3.805**
Family income	23564.345	.212	2.114 *	20353.536	.183	1.820
Caregiver capabilities				4.769E_02	.167	1.696
Constants	110.634		25.466	101.912		15.211
R^2	.206			.233		
R^2 change	.206			.027		
Adj. R^2	.177			.195		
SEE	8.59311			8. 49753		
F	7.160			2.878		
Signif. F	.000			.094		

* p < .05 ** p < .01

According to Table 9, hierarchical regression analysis for the block of basic conditioning factors--caregiver-child relationship, caregiver's education, and family income-- were entered in step 1. The basic conditioning factors accounted for 20.6% of variance in care-giving behavior. The variable with a predictive power for care-giving behavior with statistical significance at the .001 level was caregiver's education

(t = 3.906), and with statistical significance at the .05 level was family income. However, the regression coefficient of caregiver-child relationship (t = 1.208, p = .230) were 1.23. The model showed that there was a statistical significance (p < .001) $F_{3, 83}$ = 7.160, p = .000).

When caregiver's capabilities were entered in step 2, it was found that they only accounted for 23.3% of care-giving behaviors. The variables with predictive power for care-giving behaviors with statistical significance were caregiver's education (t = 3.805, p < .01).

So, the model showed a statistically significant $F_{(3, 83)}$ = 7.160, (p=.001). As for basic conditioning factors, the regression coefficients for caregiver' education (p <.001) and family income (p < .05) were statistically significant. Years of education were the strongest predictor for care-giving behaviors for the HIV-exposed infant.

CHAPTER V
DISCUSSION

This research aimed to investigate the predictive power of caregiver-child relationship, caregiver's education, family income, and caregiver capabilities, for the care-giving behaviors for the HIV-exposed infant.

Care-giving behaviors of the caregiver for the HIV-exposed infant

The mean of total scores for care-giving behaviors was 126.83 (S.D. = 9.57, skewness = -.373), which indicated that the caregivers were likely to have a high score of care-giving behaviors when compared with the highest possible score (146). This was congruent with the study of Suthisa Lamchange & Prongnapa Akarachinores (2541) which found that caring for HIV-infected children was at a moderate level, while the study of Sopa Suthachayanon (2541) found that mothers with HIV-positive infection responded to the overall level of the infants' basic needs at a moderate level. Rossukhon Pichaipat (2543) found that mothers with HIV had a moderate level of ability to care for their babies. While Patcharin Kittithongsopon (2541) found that child rearing behaviors for toddlers of HIV-infected mothers in the overall level was good. Patchara Sunthararachun (2541) found that 77.8% of HIV-seropositive mothers had a good level of child rearing behavior. .

The subscale scores for care-giving behaviors in the **first domain** is to protect from MTCT, had a mean = 14.42 (S.D. = .82). The researcher established this behavior as the first priority because the HIV-exposed infant was born with complex management and many care needs. The mother or caregiver must know, understand, and make deliberate actions to meet the HIV-exposed infant's needs.

Of first importance in management is to catch up with the antiretroviral drug regimen. This item was not arranged in the health-deviation requisites, because the HIV-exposed infant was not the sick person. HIV infection causes immunosuppression and susceptibility to opportunistic infections, and may lead to development of unusual neoplasms. The effectiveness of neonatal antiretroviral prophylaxis is that the infant receives prophylactic antiretroviral(s) (either ZDV-3TC

or nevirapine) during labor and delivery, and during the first week of life (Fowler et al., 2000: 22).

In this study, about administration of medication, the caregivers answered as follows: to give the drug right on time as prescribed numbered 80 cases, sometimes 8, and never 3. From the qualitative data it was found that the caregiver had to delay or withhold the drug because it was not available. Some caregivers stated that they lived in extended families it was remarked "Why did the infant need to be given the drug, what the drug was, and how long it necessary to give it?". The most important was fear of disclosure about the disease. Some caregivers stated that sometimes an answer made the problem worse, so they said it was special vitamins to stop further questions.

The next question about behavior was to read the drug label before administration. Only 80 caregivers always read the label, 8 sometimes, and 2 never. This was the highest risk behavior. The caregivers stated that they could remember, it was only one for the baby and it was automatic behavior (meaning that they did not think about it). For this behavior, the caregivers were counseled, to enhance their awareness and modify the practice to prevent medication errors.

About pediatric follow-up and bringing the HIV-exposed infant to receive immunization, most caregivers practiced every time according to their appointment (79 for every time, 11 for sometimes). The study of Rossukhon Pichaipat (2543: 131) found from interviews that the mothers brought their HIV-exposed infants as appointed because the mothers who were HIV-seropositive wanted to ask about health, talk with persons who can maintain their secretes, and this helped them to release the tension and anxiety of their HIV infection condition. The qualitative data showed that the caregivers needed to relax, because they could not talk about their own secrets to anyone because of uncertainty about what might ensue. Some caregivers stated that sometimes they could not take leave from work, so they left for pediatric follow-up instead.

The next regimen to prevent MTCT is to reduce exposure to HIV while breast-feeding. The mechanism of transmission is most likely the frequent and prolonged exposure of the infant's oral and gastrointestinal tract to breast milk, but the actual unit of infection (i.e., cell-free or cell-associated) is unknown.

The mothers were explained the risk of HIV transmission through breast-feeding, given recommendations, and provided with free formula to feed their children. One hundred percent of the caregivers used bottle-feeding. From the study, only 75 caregivers always received supportive milk. The 9 caregivers and 4 caregivers said they sometimes and never received the milk because they lived so far away, and sometimes there was nobody to help with child-rearing. Some stated they never received it because they were in the "shopping around" stage (bringing the HIV-exposed infant to several hospitals for to treatment and to be assured the child was not infected), so did not know how or where to ask for it.

The behavior that must be avoided is feeding food from the caregiver's mouth. Nevertheless, 2 caregivers persisted in doing it and 10 caregivers sometimes did it. For this item the caregivers did not perceive a connection with MCTC because there was no information about any connection and it was an old style of child-rearing and sometimes used in urban areas nowadays.

The subscale scores for care-giving behaviors in the **second domain,** to protect from opportunistic infection and prevent the spread of the virus, had a mean = 53.15, (S.D. = 4.55).

In the answers about hand-washing, the caregivers' behaviors varied from did not practice to practice every time. Where hand-washing was not practiced 100%, because the caregivers stated that they had no time, the child was crying, she had to hurry, they used a spoon to feed into the mouth, and someone stated that they practiced in the first few weeks of the child's life, and after that, they gave up because the child was still healthy. The results are congruent with the studies by Patchara Sunthararachun (2541) and Sopa Suthachayanon (2541).

The behaviors that the caregivers still practiced, in the modes no practice and sometimes practice were related to cleanliness of the body, food, water, toys, environment, and avoiding close contact with the sick person and not allowing the child to play with animals.

About body cleanliness by bathing or rubbing with a cloth once or twice daily, most caregivers practiced every time (84), but still there were 3 caregivers who sometimes practiced, and one caregiver were never practice. The quality data found that the child was too young to take a bath. The practice of drying and cleaning the

skin around the ears after bathing, and cleaning the perineum immediately after urination and/or bathing were sometimes practiced (38 and 27, respectively) and practiced every time(50 and 60, respectively), but there was still one caregiver who did not practice drying and cleaning the skin around the perineum immediately after urination. For these two items, the caregivers stated that only bathing or rubbing with a cloth was enough, there was no need for special care of the perineum, and because they used "Pampers" they did not know exactly when the child voided.

The reason for the high frequency of sometimes changing the bed sheet as soon as the child urinated was that they used "Pampers" (55, 32, 1, for every time, sometimes, and no practice, respectively).

The practice about preparing clean food, water, toys, and environmental management were mostly at the good level (items 11, 20, 21, and 22).

The frequency of preventing the child from contact with sick persons and not allowing the child to play with animals were very close (45, 42, 1. and 65, 13, 10, respectively). This was attributable to family structure, habit, and social interaction, related to the concept of "krengjai" (thoughtful consideration of the feelings of others) (Bechtel & Apakupakul, 1999: 471). The idea is to maintain the relationship between the HIV-exposed infant and the other person(s), by playing with the sick person, and/or animal. This is one important concept to enhance the physical, psychological, and spiritual health and comfort of the HIV-exposed infant (Bunting, 2001: 137), and the relationships and feelings about them are an important focus.

In the **third domain**: the mean scores for caring for the sick, or when symptoms happen or change, were 16.33 (S.D. = 3.54).

About fever, the answers were almost every time and sometimes range, and for using a drug, 19 cases stated that their children never had fever. The largest group of children never had diarrhea (52 cases), or oral thrush (53 cases). The frequency of giving water after bottle-feeding and oral care were 52, 24, 12; and 32, 41, and 15; for every time, sometimes, and never, respectively. The largest group of caregivers (about 50%) stated that they had not yet observed thrush in the oral cavity.

About drugs, 77 children received drugs as prescribed every time, 8 and 3 children sometimes and never get it as prescribed, while 33 children did not receive

any medical treatment for HIV/AIDS. Some of the caregivers did not care about the drug.

Only 63 caregivers asked about the drug and its side effects, and 14 caregivers sometimes asked, while 11 caregivers answered that they never asked about the drug and its side effects, no matter what the drug was.

The **fourth domain**: to nurture, promote health and well-being with tender love and care, and accident prevention. The mean score for this domain was 26.72(S.D. = 2.6).

The item bottle-feeding was practiced by 100%, likely the result of counseling MCTC in the prevention program, and 85.2% of the caregivers (75 cases) received milk formula from the hospital; only 4 caregivers stated that they had not yet received it because one did not know how and when to get it, one was shopping around to seek a satisfactory healthcare provider, while two stated that it was not convenient to receive formula because they lived a long way from the hospital.

The item about food supplements was related to the HIV-exposed child's age. Four caregivers stated that supplementary foods were not given because the child's age was under 3 months. Some caregivers still gave supplementary foods before 3 months of age. This is congruent with the study by Rossukhon Pichaipat (2543: 129). These are behavior of old patterns of child rearing, but some caregivers did not know when and how to start it. For this problem, the caregivers were counseled to change to suitable practices immediately.

The items about holding, embracing, and playing with the HIV-exposed infant were mostly practice every day. Some caregivers stated that they did not do that because the baby was too small, but some caregivers were suffering from anxiety and depressed emotions. From the qualitative data, it was found that some feared MCTC and felt uncertainty. The caregivers who answered sometimes practice stated that there was no time because they must work either in the house (housewife) or the office (officer).

The frequency of catching up with the body weight and height of the HIV-exposed infant at follow-up, varied from 62, 24, and 2, for every time, sometimes, and never, respectively. The caregivers stated that they observed that the body of the child

was bigger and taller than before. The others reasons were that some caregivers had to calm the child down, from fear of nursing care or to prepare a mood for sleep.

There were variations in the behaviors about not allowing the child to pick up dropped food or small things/toys (33, 33, and 22, for every time, sometimes, and never, respectively), and to provide toys to promote growth and development and physical strength (43, 24, and 21, for every time, sometimes, and never, respectively). These answers depended on the child's age. Some caregivers stated that the babies were too young to put something in their mouth (except her hands). About enhanced growth and development, the caregivers did not know how and when to start. Their understood was incorrect about the child's perception and the toys that they had to buy for the child. This was congruent with the study of Patcharin Kittithongsopon (2541: 89). Enhancement of growth and development can be started when the mother perceives that she is pregnant, and the promotion of physical strength did not require expensive toys. Some caregivers were not aware about this item because of the effect of HIV infection.

The **last domain**: to search for information and seek useful sources and resources to care for the HIV-exposed infant. The mean score for this domain was 19.19 (S.D. = 3.69).

The caregivers who sought information about the HIV-exposed or HIV infection every time numbered only 77 cases, while 8 caregivers sometimes did it, but 3 caregivers never did it. The frequency of the practice of asking about the drug was 63, 14, and 11 for every time, sometimes, and never, respectively. The qualitative data showed the caregivers' fear and anxiety, guilt and shame, especially among caregivers who were mothers in their second marriage and mothers who alone knew the diagnosis, felt shame about how they acquired the virus and were afraid to tell their husbands. Consequently, the frequency of sometimes and never searched for information and useful sources, was greater than every time. In this study, the researcher returned the book and pamphlets about disease and caring for the person with HIV/AIDS after the contact for the study, and chose only one or two who heeded the information provided, but they had to keep them in a closed bag, especially since some caregivers denied the existence of disease, for fear of disclosure and shame in front of their neighbors and/or other family members.

The caregivers often maintained a veil of secrecy around the child's illness to avoid the diagnosis being disclosed to others, because the results of such a decision to disclose would have many ramifications. Families frequently experienced abandonment and isolation if a perinatally-acquired HIV-disease diagnosis is "made public," because of the social stigma, discrimination, fear, and ignorance regarding the nature and transmission of HIV/AIDS (Funck-Brentano et al., 1997; Blasini et al., 1998; Hilliard et al., 1997 cited by Ledlie, 1999: 141).

The result of the study revealed that the HIV-infected mothers were confronted with placing an emphasis on those aspects of life that remained unchanged in the face of chronic conditions, and manage the tension between their preferred view of their lives as normal, and the problems that they faced in their day-to-day lives. They selected some pamphlets and carried them in a closed bag, reading them when there were no people around (qualitative data). This was congruent with the studies by Patcharin Kittithongsopon (2541); Patchara Sunthararachun (2541); Sopa Suthachayanon (2541); Suthisa Lamchange & Prongnapa Akarachinores (2541); and Rossukhon Pichaipat (2543).

The data revealed that this result agreed with Robinson's (Knafl & Deatrick cited by Rehm & Franck, 2000: 71-72) conception of an interpretive lens, which was called a "normalcy lens" which acknowledges the condition and its potential to threaten the lifestyle, adopts a normalcy lens for defining the child and the family, engages in parenting behaviors and family routines that are consistent with normalcy, and interacts with others based on a view of the child and family as normal. Mothers or caregivers have been shown often to emphasize those aspects of life that are unchanged by caring for a child with a chronic condition, and they redefine in a manner that allows them to perceive success in meeting family needs.

Caregiver capabilities

The result of the study (table 4) showed that the mean scores for caregiver capabilities of the caregivers were 207.65 (S.D. = 33.08). The scores of aspect 3 (ability to motivation or goal orientation to take care) of caregiver capabilities when compared with the highest possible score, was rather high (table 5). The score of the

caregivers in aspect 1(ability to maintain attention), and aspect 5(ability to seeking health information and support) were rather in the low level. The frequency of caregiver capabilities in these aspects were 43, and 42. The mean scores of aspects 1, and 5 were 55.77, and 17.81, respectively.

When the mean score for each subscale was considered, the highest mean score of aspect 1 (maintaining attention and awareness of the children, and consistently perform and integrate them with relevant aspects of personal, family, and community living) were items 7 and 18, and item 20 (knowledge about a clean and good environment and how to manage it; the confidence of giving the drug every day, and confidence in keeping clean for the child, respectively). The mean scores were 8.14, 8.06, and 8.64. The mean scores about knowledge of antiretroviral drugs (item 8) and an inverse correlation between child care and getting information about disease (item 9) were potentially low. The mean scores were 5.76 and 4.65. This means that when caregivers receive less information it will interfere more with their care-giving behavior. This correlated with aspect 5 (seeking health information and support; items 27, 28, and 29). Item 27; the caregivers had poor knowledge about the disease, and item 29; willing to ask for assistance, had mean scores at 5.52 and 5.04. Item 28 showed that the caregivers could ask health professionals for assistance had the mean of 7.26.

The results were in accord with the report by Burtz (Burtz et al., 1993. cited by Miles et al., 2001: 43), who found that low-income African-American women with HIV felt particularly stigmatized and, as a result, reported inadequate support and experienced barriers to seeking healthcare and other services.

The mean scores of aspect 2, controlled use of available physical energy and body posture that is sufficient for the initiation, continuation, and completion of dependent-care operations, were a potentially high. The item (16) keeping in touch with their own health had a high mean score (8.07). The mean scores of feeling of too fatigued to take care of their children (item 15), their own health interfered with care-giving (item 14), feeling a lack of physical strength to take care of their children (item 17), and the ability to concurrently do house keeping and care-giving for their children (item 13) were 6.28, 7.34, 7.07, and 7.99.

The mean scores of aspect 3; ability to motivation or goal orientation to take care of the children with their characteristics and meaning of life, health, and well-being were potentially high. The highest mean scores were the good feeling when doing things well (item 22 = 9.41), and pride of care-giving for the children (item 23 = 9.37). The lower mean score were the ability to control the child's moodiness (item 21 =7.13), feeling of confusion or unsureness about the child (item 25 = 6.64), and the feeling of being overtired (item 26 = 6.84).

The mean scores for the subscale scores of aspect 4; the ability to reason and make decisions about the care of the child and to operationalize the decision, and the repertoire of cognitive, perceptual, manipulative, communication, and interpersonal skills adapted to the performance of the child-care operation, were separated into 4 levels. The low mean score was item 1 (knowledge about promoting growth and development of the child; mean=5.60), and item 2 (knowledge about food for the HIV-exposed infant; mean= 5.06). The good mean scores were item 3 (knowledge about clean food; mean=7.88), item 6 (knowledge how to promote physical strength of the child; mean=7.12), and item 24 (good at problem-solving for care-giving; mean=7.33). The very good mean scores were item 4 (exercise is essential for good health; mean=8.34), item 5 (know about sleep in relation to the child's health; mean=8.66), and item 11 (capable of making good decisions about sending the child for treatment by a physician; mean=7.93).

Caregiver capabilities and care-giving behavior

The study results revealed that caregiver capabilities were significantly positively correlated with care-giving behaviors ($r = .228$, $p < .05$), although the correlation was not particularly strong. This showed that the better the caregiver capabilities of the HIV-exposed infant, the more appropriate were the care-giving behaviors. This is consistent with Orem (1985, 1991), who stated that dependent-care (care-giving behavior) and dependent-care agency were positively correlated, and Orem (1995; 242-243) also stated that dependent-care agency is usually developed in response to the needs of the persons to be helped or taken care of. This finding was in accord with the report by Jariya Wittaya-sooporn (2539), who studied a causal model

of dependent care-giving burden in parents of chronically ill children, which defined a variable of coping with care-giving as an action of care-giving of chronically ill children, and found that the power component of dependent-care agency had a significant direct positive effect on coping with care-giving (level = .001). The result supported the study by Narumol Gajaseni (2003), who found a positive relationship between child-care agency and maternal care-giving behaviors of febrile children aged 3 months to 6 years ($r = .664$, $p < .01$).

Hypothesis: The caregiver-child relationship, caregiver's education, family income and caregiver capabilities can be predictive of the care-giving behaviors for the HIV-exposed infant.

Hierarchical multiple regression analysis was utilized in this study to determine the factors predictive of the care-giving behaviors for the HIV-exposed infant, using analytical steps according to Orem's concept. The first step was grouping basic conditioning factors, and the second was caregiver capabilities. Before the Pearson product-moment correlation was analyzed (Table 8), the variable that had nominal scale was changed.

The assumption of regression was tested as follows: 1) There was normal distribution, 2) There was linearity of the relationship between the variables, 3) There was homoscedasticity, and 4) Multicollinearity of independent variables not higher than .65 (Burn & Grove, 1997: 487). After that, it was found that the variable without normal distribution was family income. Inverse transformation was used on family income to correct the skewness of the distribution. The analysis produced results that answered the hypothesis, as follows:

Basic conditioning factors (caregiver education and family income) were entered first. The results indicated that basic conditioning factors accounted for 20.6% of the variance in care-giving behaviors. The variable with a predictive power for care-giving behaviors with statistical significance ($p = .001$) was caregiver education ($t = 3.906$), while family income had a predictive power for care-giving behaviors with statistical significance ($p = .05$) ($t = 2.114$, $p = .037$). Caregiver capabilities were entered second, and the results showed that the combination of basic conditioning factors and caregiver capabilities accounted for 23.3% of variance in care-giving

behaviors. The remaining 76.7% could be explained by other factors, which were not included in this study. However, only one dependent variable could predict care-giving behaviors for the HIV-exposed infant, i.e. caregiver's education ($t = 3.805$, $p < .001$), whereas the rest of the studied variables could not.

The results of this study partially supported Orem's concept of caring for dependent individuals, with basic conditioning factors, i.e., the environment, predicting capability, and self-care demand or dependent-care. Therefore, basic factors are specific factors that can influence care-giving behaviors for the HIV-exposed infant.

Caregiver's education was the strongest predictor of care-giving behaviors, accounting for 20.6% of the variance in care-giving behaviors ($p < .001$).

The study results revealed that the caregiver's education was significantly positively correlated with care-giving behaviors ($r = .389$, $p<.001$). This showed that the more education the caregiver of the HIV-exposed infant had, the more appropriate were the care-giver's care-giving behaviors.

The finding of this study was congruent with many studies, including the study by Wanlapa Phiewton (2527), which found that mothers' duration of education was correlated with maternal compliance in obtaining immunization for their preschooler. Pensri Pichaisanit et al. (2541) found that parents with higher education levels performed better care-giving behaviors than parents with lower education levels. Siriyupa Sanunreangsuk (1993) found that the duration of maternal education was positively correlated with maternal care-giving behaviors for children < 5 years old with acute respiratory infection. Rungtip Weerakul (2539) found that the duration of maternal education was positively correlated with the maternal behaviors with thalassemic children. Chusri Tewsakul (2540) indicated that the preventive behaviors of the mothers of infants who received care in Wachira Phuket Hospital were positively correlated with maternal duration of education. Ubol Asumpinzub (2540) also stated that duration of education was positively correlated with maternal behaviors in caring for children with congenital heart disease. Furthermore, Patcharin Kittithongsopon (2541) confirmed that there was a positive relationship between duration of education and child-rearing behaviors for toddlers of HIV-infected mothers. Suthisa Lamchang & Prongnapa Akarachinores (2541) also found that

caregiver's education had a significantly positive correlation with caregivers' role in caring for the HIV-infected child.

Caregiver education had a significantly positive correlation with care-giving behaviors ($r = .389$, $p < .001$) when analyzed with Pearson's product moment correlation, and also predicted the care-giving behaviors with statistical significance ($t = 3.906$, $p < .001$) in step 1 of hierarchical multiple regression analysis. In addition, when considering partial correlation (the correlation between caregiver's education and the care-giving behaviors when controlling other variables), it was .394 in step 1, but decreased to .387 in step 2. Partial correlation indicated that caregiver's education had a positive correlation with care-giving behaviors. Therefore, caregiver's education could predict care-giving behaviors for the HIV-exposed infant. This may be explained as follows: with more caregiver's education, the caregiver of the HIV-exposed infant had more appropriate care-giving behaviors than those with shorter durations of education. From this study, it was found that 50% (44/88) had caregiver's education of 7-12 years. The finding was consistent with Orem's theory, i.e., education was important in the development of knowledge, skills and good attitudes toward the performance of self-care (Orem, 1985: 175), and the performance of dependent-care. This disagreed with Yupares Payaphrom (2539), who studied 86 HIV-infected mothers of infants 3-12 months of age who received health services and treatment at Chiang-rai Prachanukrao Hospital. It was found that knowledge and practice of preventing infection and infection control were at a moderate level, while knowledge of caring for the infant had a statistically positive correlation with the practice of care ($p = .001$). Rosukon Pichaipat (2545) found that the level of education of mothers with HIV had a positive correlation with their ability to care for themselves and their babies, but without statistical significance.

Family Income The study revealed that family income was not significantly correlated with care-giving behaviors ($r = .150$, $p > 0.05$). The subjects (37.5%) had family incomes of 5001-10,000 Baht/month and 26% had 0- 5,000 Baht/month. Of the subjects, 39.8% said their income was inadequate and they were in debt, while 39.8% of the subjects indicated their income as adequate. Only 6.8% of the caregivers got welfare from the government, but most of them received financial support (35.2%

always received, 39.8% sometimes received). Seventy-seven subjects (85.2%) always received milk support, and 56.8% always received help with childbearing. Furthermore, 36.4% and 29.5% said that they always and sometimes, respectively, received drug support; only 29.5% never received drug support. This may be explained as follows: family income is an important resource, which can support the search for healthcare services and well-being for the HIV-exposed infant, but the subjects received other supports from elsewhere. Suthisa Lamchang & Prongnapa Akarachinores (2541) also found that only family income had a significantly positive correlation with the caregivers' role in caring for the HIV-infected child.

Family income could predict care-giving behaviors. In the Pearson's product moment correlation, family income was not significantly positively correlated with care-giving behaviors ($r = .113$, $p = .150$), but in step 1 of hierarchical multiple regression analysis, family income was also correlated with care-giving behaviors ($t = 2.114$, $p = .037$), and the partial correlation was .226. In step 2, family income was not significantly positive correlated with care-giving behaviors, with $t = 1.820$, $p = .072$. Of the subjects, 39.8% said their income was inadequate and indebt. The finding indicated that caregivers with higher incomes would have better care-giving behaviors. The results of the study indicated that the largest group of caregivers (57.8%) was in a good level of care-giving behaviors. Meanwhile, 39.8% of the caregivers indicated adequate income. Only 8% indicated inadequate income but 39.8% were inadequate and indebt. Although 35.2% of the caregivers said that they always received financial support, 39.8% sometimes received it, and 25% never received it. The percentages of drug support were quite similar, at 34.1, 36.4, and 29.5%, for always, sometimes, and never received drug support. However, 56.8% of the caregivers always received childbearing support. Data on the information-seeking behaviors indicated that the caregivers asked only special health personnel (qualitative data). This agreed with Williams et al., (1997) who found that HIV-infected mothers frequently delayed seeking medical care and reported a limited social support network. The result agreed with Chusri Tewskul (2540: 42), who found that family income had a significantly positive correlation with the total scores for care-giving behavior of mothers, and also in respect of health promotion and prevention of disease. Patcharin Kittithongsopon (2541), and Suthisa Lamchang and Prongnapa Akarachinores (2541)

found that family income had a positive correlation with the role of caregivers of HIV-infected children.

Other variables that were found not to be predictors of care-giving behaviors for the HIV-exposed infant in this study were caregiver-child relationship and caregiver capabilities. These finding are discussed below:

Caregiver-child relationship could not predict care-giving behaviors for the HIV-exposed infant but was significantly correlated with care-giving behaviors ($r = .203$, $p < .05$). This indicated that the care-giving behaviors were not different. It could be explained by the homogenous characteristics of the subjects. The study found that 93.2% of the caregivers were parents, and that almost all other relations were extended family members, such as grandmothers or aunts. In some cases, the mothers lived at home at irregular intervals, and grandmothers or other relatives provided most of the care. The result of the study revealed that the HIV-infected mothers were confronted with emphasizing those aspects of life that remained unchanged in the face of chronic conditions, and manage the tension between their preferred view of their lives as normal and the real problems they faced in their day-to-day lives.

The data analysis found that this result agreed with Robinson's (Knafl and Deatrick cited by Rehm & Franck, 2000: 71-72) conception of an interpretive lens, which was called a "normalcy lens", of which the attributes included; acknowledge the condition and its potential to threaten lifestyle, adopt a normalcy lens for defining the child and the family, engage in parenting behaviors and family routines that are consistent with a normalcy lens, and interact with others based on the view of the child and family as normal. Mothers or caregivers have been shown often to emphasize those aspects of life that are unchanged by caring for a child with a chronic condition, and they redefine it in a manner that allows them to perceive success in meeting family needs.

Caregiver capabilities could not predict care-giving behaviors for the HIV-exposed infant. The results of the study revealed that caregiver capabilities of the HIV-exposed infant in this study were significantly positively correlated with care-giving

behaviors ($r = .228$, $p < .05$). In the second step of hierarchical regression, when caregiver capabilities were entered, the results showed that the combination of basic conditioning factors and caregiver capabilities accounted for 20.6% of variance in care-giving behaviors. This may be explained by the observation that the scores of caregiver capabilities were vary, but were not incongruent with the detailed care-giving behaviors. This could be explained by the style of answering the questions by the caregivers. From the samples, the largest groups were mothers, and the questions were about knowledge and attitudes, so, to present a good image, they answered in a socially desirable way, but did not really act that way. Furthermore, some questions were abstract, and some of the caregivers could not envisage them (31.8% of the care-givers had only primary education and 50.0% had secondary education).

The other limitation was that the questionnaire did not test validity. Some words were not specific to the study group, and thus the result was incongruent with Orem's theory.

From the results of the study, it may be concluded that basic conditioning factors accounted for 23.3% of the variance in care-giving behaviors of the caregivers of the HIV-exposed infant ($p < .001$). Dependent-care agency could account for only 1.6% of the variance in care-giving behaviors. Caregiver's education and family income could predict care-giving behaviors, with caregiver's education the best predictor. The result of the research only partly supported Orem's theory. This may be because other basic conditioning factors and structural factors of care-giving behaviors, which could influence care-giving behaviors, did not have statistical significance, and because some factors had not been studied in this research under the theoretical framework of Orem's dependent-care concept.

The interesting behaviors

The interesting behaviors were the care-giving behavior that effected to MTCT and the progress of severe infections. The importance prevention of mother to child transmission was reducing the rate of prolong exposed to the virus.

The selected behavior about feeding the food from the caregiver's mouth was the importance risk behavior. The quality data found that the nine caregivers were mothers and the other three caregivers were non-mother. These behaviors were not at

risk for only the HIV virus, but also the others, etc, hepatitis A virus, respiratory tract infections.

In item 9 (Don't let the child pick up the toy or the falling food and put into the mouth), 23 (Allowing the child to contact the sick person), and 24 (Allowing the child to play with animals) shows the behaviors that parents should be aware and prevent the children from the increasing of the opportunistic infection. In item 36(Bring the child to the doctor immediately, when the child get fever, cough, and running nose), 39(Bring the child to the doctor immediately, when the child diarrhea more than two times a day), and 42(Bring the child to the doctor immediately, when there were oral thrush) shows the behaviors that parents have to know and do when the symptoms occur, but the care givers response that they did sometimes and never practice in the high rate.

Research limitations

1. The questionnaires used had too many items, and some mothers who read slowly had to spend more than 30 minutes reading them. Hence, their attention to the content decreased, which affected their answers. The researcher must read and let the 4 caregivers point out the answers or write the x on the line of answers.

2. Generalization of the results to other groups of HIV-exposed infant is limited, due to the use of purposive sampling and the limited setting.

3. Family income had a normal distribution after transformation, because of the set limit.

CHAPTER VI
CONCLUSION

Conclusion of the study

This descriptive study aimed to ascertain the predictive power of child-caregiver relationship, caregiver's education, family income and caregiver's capabilities on care-giving for the HIV-exposed infant. Dependent-care agency from the Nursing Theory of Orem was used as the research framework of the study. A purposive sample for this study included 88 caregivers of HIV-exposed infants who attended pediatric infectious clinics in the out-patient departments of Ramathibodi, Bamrasnaradura, and Phramongkutkhlao hospitals from February to June 2001. The sample in this study was chosen by purposive sampling according to the inclusion criteria.

The tools used in this research were comprised of a set of questionnaires consisting of 4 parts, as follows: 1 & 2) Questionnaire for background information on the caregivers and the HIV-exposed infant; 3) the Caregiver Capabilities Questionnaire, developed by the researcher based on (a) the Dependent-Care Instrument of Denyes and Fildey that Autchareeya Pathoomwan (2534) used to study basic conditioning factors, social support and dependent-care agency of lymphoblastic leukemia children's mothers, (b) the literature reviews about HIV/AIDS, and (c) the concept of Orem's Theory, and 4) The Care-giving Behaviors for the HIV-exposed Infant Questionnaire, modified by the researcher from the review of the literature of theories concerning HIV/AIDS children, caring for the HIV-exposed infant, the dependent-care concept in the Self-care Theory of Orem's Nursing Theory, and from the Questionnaire on Maternal Behaviors in Caring for Children whose Mothers have HIV/AIDS, developed by Lamchang and Akarachinores (2541).

The content of all tools was validated by 5 experts. Reliability was tested with 20 caregivers of HIV-exposed infants with the same characteristics as the sample groups, using Cronbach's alpha coefficient, which were .87 (caregiver capabilities) and .84 (care-giving behavior), and .86(caregiver capabilities) and .80 (care-giving behavior) when used with 88 samples.

The data were collected and analyzed by the computer software Statistical Package for the Social Sciences (SPSS) for Windows. Background information, each item of caregiver's capabilities and each item of care-giving behaviors in the HIV-exposed infant were analyzed by frequency and percentage. Caregiver capabilities and the care-giving behaviors in the HIV-exposed infant were analyzed using minimum-maximum, mean, Standard Deviation, and skewness. The relationships among the basic conditioning factors--caregiver capabilities and care-giving behaviors--were analyzed using Pearson's product-moment correlation coefficient. Multiple regression analysis was also applied to examine the powers of prediction between predictors, and the care-giving behaviors for the HIV-exposed infant. The results can be summarized as follows:

1. As for the characteristics of the caregivers, 84.4% were married, 93.3% were mothers, aged 17-69 years (mean = 28.5), and 50% (n = 44) had secondary education that were 7-12 years of caregiver's education. The family incomes of most caregivers (39.8 %) were inadequate and in debt, and adequate, and 93.2% had no welfare, but they got many supports from elsewhere.

2. As for the characteristics of the children, nearly half (44.3%) were 6-12 months of age, 93.2% were healthy, and 55.7% received one kind of drug. The percentage of children who only had follow-up without medication was 37.5% (n = 33). About the diagnosis of HIV antibody-positive, 75% were diagnosed during pregnancy, whereas 25% were found HIV antibody-positive before their pregnancy.

3. Regarding caregiver capabilities, 27 caregivers had a total score at a good level, while the most caregivers showed the very good level of the capabilities in 2 aspects; aspect 2 (the ability to control the use of available physical energy and body posture sufficient for the initiation, continuation and completion of dependent-care operations), and aspect 3 (the ability motivation to take care of the children with goal orientation in accord with the child's characteristics and meaning of life, health, and well-being) showed the very good level of the capabilities.

4. The caregivers had a mean of total score at potentially high (mean=126.83). Based on the results of the study, there were some care-giving behaviors that could affect the risk of mother-to-child transmission and the progress of severe infection.

5. Pearson's product moment correlation analysis indicated that the care-giving behaviors for the HIV-exposed infant were significantly positively correlated with caregiver education (r = .389, p = 0.000), and caregiver's capabilities (r = .228, p = .017). In addition, there was a low correlation between the independent variables. Family income was negatively correlated with caregiver education (r =-.213, p =0.24).

6. Hierarchical multiple regression analysis revealed that the basic conditioning factors accounted for 20.6% of care-giving behaviors. The variables with statistically significant predictive power for care-giving behaviors were caregiver education (t = 3.906, p < .01), and family income (t = 2.114, p= .037). Caregiver education was the strongest predictor for care-giving behaviors for the HIV-exposed infant.

Therefore, the results of the present study partially supported the hypotheses.

Research limitations

1. The questionnaires used had too many items, and some mothers who read slowly had to spend more than 30 minutes reading them. Hence, their attention to the content decreased, which affected their answers. The researcher must read and let the 4 caregivers point out the answers or write the x on the line of answers.

2. Generalization of the results to other groups of HIV-exposed infants is limited, due to the use of purposive sampling and the limited setting.

3. The questionnaires had abstract ideas, and some caregivers read slowly, and the child was too active, which distracted them and made them lose attention. Furthermore, they feared disclosure of the disease to others because the title of the questionnaire had the words "HIV/AIDS".

Recommendations

The findings of this study contain several important implications for nursing practice, nursing education, and nursing research.

Implications for nursing practice

1. The result of the study revealed that caregiver's education was the strongest predictor for care-giving behaviors for the HIV-exposed infant. Family income was

the other variable significantly related to care-giving behavior. Therefore, nurses in the pediatric clinic should assess the family of the HIV-exposed infant and after that plan the participatory process with the family in caring for their children, by giving special care and awareness for the caregivers who were low educated and low income.

2. The qualitative data revealed that the largest group of caregivers was composed of mothers who kept HIV/AIDS confidential and secret. This group of mothers had the psychological effects, the psychological stressors of social stigma, and the knowledge that they had a disease with no known cure. The greatest effect was fear of disclosure and the uncertainty thereafter. Nurses can help them to make appropriate disclosures and decide for themselves who can safely be informed, to enhance their support and not feel embarrassed.

3. Counseling for HIV-infected mothers is very important. This strategy can provide clear information about HIV infection, both of the children and their mothers. All infants born to mothers with HIV infection test seropositive for HIV IgG antibody at birth, but this reflects the presence of maternal antibodies and HIV infection in the mother, not the baby. Perinatally-acquired HIV infection can be prevented by seropositive women's use of zidovudine during pregnancy, labor, and delivery, and its administration to their infants during the first 6 weeks of life. As a result, most HIV-exposed infants do not develop perinatally-acquired HIV infection. Viral assays can be used to establish the diagnosis of perinatally-acquired HIV infection in an infant within 6 months. When these assays are repeatedly negative in the 6 months, there is some degree of medical certainty that a seropositive infant does not have perinatally-acquired HIV infection (Centers for Disease Control and Prevention, 1998). A mother, however, may experience continued ambiguity about her baby's infection status until the child seroreverts and is formally discharged from HIV care at the age of about 18 months. Mothers should be re-informed to understand and be aware of the need to give medication to the child at the appropriate time each day, and awareness in exposure to infections. Clear information can empower the mother's suitable care-giving behaviors for the HIV-exposed infant.

Implications for nursing education

Nursing educators should provide information to nursing students to aid them understand the importance of the psychological effect of the baby's infection status, which reflects the mother's infection status, and that mothers feel they are the source of the threat to the child. Nursing student interactions with the HIV-infected mother can mediate the psychological distress of the family. Moreover, it can provide the high levels of trust characterized by parent-provider relationships when parental uncertainty is high, especially for the caregivers who were low income and low educated.

Implications for nursing research

Based on the limitation and the findings of the present study, several recommendations for future research are presented:

1. The results revealed that there remained other factors influencing care-giving behavior, so that further studies should focus on the care-giving behaviors of care-givers for the HIV-exposed infant, quality of life, and well-being of the family.

2. Future studies should be conducted with the significant others of HIV-infected mothers.

Further recommendation

Further psycho-sociologic studies of the seropositive mother, family, and HIV-exposed infant, are recommended.

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APPENDIX A

รายนามผู้ทรงคุณวุฒิ

รายนามผู้ทรงคุณวุฒิตรวจสอบความเที่ยงตรงของเนื้อหาของแบบสอบถามความสามารถในการดูแลเด็ก และพฤติกรรมการดูแลเด็กที่เกิดจากมารดาที่ได้รับเชื้อเอชไอวี/ เอดส์ ของผู้ดูแล

1. ผู้ช่วยศาสตราจารย์ ดร.สุนีย์ ละกำปั่น
   ภาควิชาพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

2. ผู้ช่วยศาสตราจารย์จุไร อภัยจิรรัตน์
   ภาควิชาการพยาบาลกุมารเวชศาสตร์ วิทยาลัยพยาบาลสภากาชาดไทย

3. รองศาสตราจารย์สุธิศา ล่ามช้าง
   ภาควิชาการพยาบาลกุมารเวชศาสตร์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

4. อาจารย์ ดร.อารีย์วรรณ อ่วมตานี
   ภาควิชาการพยาบาลมารดาและทารก คณะพยาบาลศาสตร์
   จุฬาลงกรณ์มหาวิทยาลัย

5. อาจารย์ศิริรัตน์ ตันสุทธางกูล
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยมหิดล

APPENDIX B

คณะแพทยศาสตร์ โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
ถนนพระราม 6 กทม. 10400
โทร. (662) 245-5704, 201-1296 โทรสาร (662) 246-2123
Faculty of Medicine, Ramathibodi Hospital, Mahidol University
Rama VI Road, Bangkok 10400, Thailand
Tel. (662) 245-5704, 201-1296 Fax (662) 246-2123

เอกสารรับรองโดยคณะกรรมการจริยธรรมการวิจัยในคน
คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี
มหาวิทยาลัยมหิดล

๖๒๕/๒๕๔๔ (D)

ชื่อโครงการ	ปัจจัยทำนายพฤติกรรมการดูแลของผู้ดูแลเด็กที่มารดาติดเชื้อเอชไอวี/เอดส์
เลขที่โครงการ/รหัส	ID ๐๑-๔๕-๐๒ ย
ชื่อหัวหน้าโครงการ	นางสาววัลภา น้อยรังษี
ที่ทำงาน	ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล
เอกสารรับรอง	เปลี่ยนชื่อโครงการ

ขอรับรองว่าโครงการดังกล่าวข้างต้นได้ผ่านการพิจารณาเห็นชอบโดยสอดคล้องกับแนวปฏิญญา เฮลซิงกิ จากคณะกรรมการจริยธรรมการวิจัยในคน คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี

ลงนาม _____

(ศาสตราจารย์นายแพทย์กฤษฎา รัตนโอฬาร)
ประธานกรรมการจริยธรรมการวิจัยในคน

ลงนาม _____

(ศาสตราจารย์นายแพทย์ประกิต วาทีสาธกกิจ)
คณบดีคณะแพทยศาสตร์โรงพยาบาลรามาธิบดี

วันที่รับรอง : ๒๐ มีนาคม ๒๕๔๕

ภาควิชากุมารเวชศาสตร์
คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี
รับที่ 5548
วันที่ 19 S.A. 2544
เวลา 10 30 น.

ทม 0802.03/125

รับครั้งที่ 1 13 S.A. 2544
รับครั้งที่ 2
รับครั้งที่ 3

บันทึกข้อความ

ส่วนราชการ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล โทร 441-0177 โทรสาร 441-0177
ที่ ทม 0802.01(สย)/ 3651 วันที่ 26 พฤศจิกายน 2544
เรื่อง ขอความอนุเคราะห์ให้นักศึกษาเก็บข้อมูล เพื่อประกอบการทำวิทยานิพนธ์

งานบริการวิชาการและวิจัย
คณะแพทยศาสตร์ ร.พ.รามาธิบดี
รับที่ 1138
วันที่ 13 S.A. 44
เวลา 15.45 น.

เรียน คณบดีคณะแพทยศาสตร์โรงพยาบาลรามาธิบดี

ด้วย นางสาววัลภา น้อยรังษี นักศึกษาบัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล หลักสูตรปริญญาโท สาขาวิชาการพยาบาลเด็ก คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี อยู่ในระหว่างเสนอโครงร่างวิทยานิพนธ์เรื่อง "ปัจจัยทำนายพฤติกรรมการดูแลเด็กของผู้ดูแล" อยู่ในความควบคุมของ ผศ.ดร.จริยา วิทยะศุภร ในการศึกษาวิจัย ครั้งนี้ นักศึกษามีความประสงค์จะเก็บข้อมูลจากผู้ดูแลเด็กเอช ไอ วี / เอดส์ ซึ่งมีอายุตั้งแต่ 0 -1 ปี ที่พาเด็กมาตรวจที่หน่วยผู้ป่วยนอก คลีนิคเด็กโรคติดเชื้อ ผู้ซึ่งมารับการรักษาที่แผนกตรวจผู้ป่วยนอกเด็กโรงพยาบาลรามาธิบดี โดยใช้แบบสอบถามข้อมูลทั่วไป แบบสอบถามความสามารถของผู้ดูแลเด็กเอช ไอ วี / เอดส์ แบบสอบถามพฤติกรรมการดูแลเด็กเอช ไอ วี / เอดส์ เป็นเครื่องมือในการวิจัย ตั้งแต่วันที่ 1 ธันวาคม 2544 ถึงวันที่ 20 มีนาคม 2545

บัณฑิตวิทยาลัย จึงใคร่ขอความกรุณาจากท่านโปรดอนุเคราะห์ให้นักศึกษาได้เก็บข้อมูลเพื่อประกอบการทำวิทยานิพนธ์ ตามที่เห็นสมควรด้วย จักเป็นพระคุณยิ่ง

(ผู้ช่วยศาสตราจารย์ประกายรัตน์ สุขุมาลชาติ)
รองคณบดีฝ่ายบัณฑิตศึกษาศาลายา
ปฏิบัติราชการแทน คณบดีบัณฑิตวิทยาลัย

ติดต่อประธานคณะกรรมการควบคุมวิทยานิพนธ์ ผศ.ดร.จริยา วิทยะศุภร
โทร. 201-2158

17 S.A. 2541

FM – REC – 07 – 01

แบบแจ้งผลการพิจารณาโครงการวิจัย
โรงพยาบาลบำราศนราดูร

เลขที่งานวิจัย ว. 52 / 2544 วันที่ 10 มกราคม 2545

เรื่อง ขอแจ้งผลการพิจารณางานวิจัยที่ขอทำในโรงพยาบาล

เรียน ผู้วิจัย

เนื่องด้วยโครงการวิจัยเรื่อง ปัจจัยทำนายพฤติกรรม การดูแลเด็ก[illegible] ของผู้ดูแล

ผู้วิจัยคือ นางสาว [illegible]

ผู้ประสานงานการทำวิจัย หรืออาจารย์ที่ปรึกษาคือ คุณจินตนา [illegible]

วันที่อนุมัติ 10 มกราคม 2545

หน่วยงานของท่านที่เกี่ยวข้องคือ –

วิธีการเก็บข้อมูล Questionnaire

กลุ่มตัวอย่างในการเก็บข้อมูล ผู้ดูแลเด็ก[illegible] อายุ 0-1 ปี

ระยะเวลาดำเนินการ มกราคม – มีนาคม 2545

จึงเรียนมาเพื่อโปรดทราบ และดำเนินการแจ้งให้หน่วยงานที่เกี่ยวข้องทราบด้วย จะเป็นพระคุณยิ่ง

(นาย[illegible])
เจ้าหน้าที่ศูนย์วิจัยทางการแพทย์
โรงพยาบาลบำราศนราดูร

สำเนาเรียน 1. ผู้วิจัย.
2. หัวหน้ากลุ่มงานพยาบาล
3. หัวหน้ากลุ่มงานกุมารเวชกรรม
4. คุณจินตนา [illegible]

บันทึกข้อความ

ส่วนราชการ หน่วยระบาดวิทยา รพ.รร.6 โทร. 93047

ที่ กห 0446.16/ **วันที่** 14 มี.ค.45

เรื่อง ขออนุญาตให้นิสิตเข้าเก็บข้อมูลเพื่อทำวิทยานิพนธ์

เรียน ผอ.รพ.รร.6 (ผ่าน รอง ผอ.รพ.รร.6(2))

อ้างถึง หนังสือ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล ที่ ทม 0802.01(ศย)/3649 ลง 26 พ.ย.44

1. ตามที่ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล ได้ขอความร่วมมือมายัง รพ.รร.6 ให้ นางสาววัลภา น้อยรังษี นักศึกษาบัณฑิตวิทยาลัย สาขาวิชาการพยาบาลเด็ก คณะแพทยศาสตร์ โรงพยาบาลรามาธิบดี ซึ่งกำลังดำเนินการวิจัยเพื่อเสนอเป็นวิทยานิพนธ์เรื่อง "ปัจจัยทำนายพฤติกรรมการดูแลของผู้ดูแลเด็กที่มารดาติดเชื้อเอชไอวี/เอดส์" เข้าทำการเก็บข้อมูลจากผู้ดูแลที่พาเด็กอายุตั้งแต่ แรกเกิด – 12 เดือน ที่เกิดจากมารดาได้รับวินิจฉัยว่าเป็น เอชไอวี/เอดส์ ซึ่งได้ผ่านการพิจารณาจากคณะอนุกรรมการพิจารณาโครงการวิจัย พบ. นั้น

2. หน่วยระบาดวิทยา รพ.ฯ พิจารณาแล้วเห็นสมควรดำเนินการดังนี้.-

2.1 สำเนาส่ง กองกุมารเวชกรรม รพ.ฯ เพื่อพิจารณาให้ความร่วมมือและดำเนินการในส่วนที่เกี่ยวข้อง

2.2 สำเนาแจ้ง นางสาววัลภา น้อยรังษี ทราบ และให้ปฏิบัติตามระเบียบการเก็บข้อมูลใน รพ.รร.6

2.3 นำเรียน ผอ.รพ.รร.6 และ รอง ผอ.รพ.รร.6 (1) เพื่อกรุณาทราบ

จึงเรียนมาเพื่อกรุณาพิจารณาอนุมัติในข้อ 2

พ.อ.หญิง
(เยาวนา ธนะพัฒน์)
หน.หน่วยระบาดวิทยา รพ.รร.6

- ทราบ
- อนุมัติในข้อ 2
-

รับคำสั่ง ผอ.รพ.รร.6

พ.อ.

รอง ผอ.รพ.รร.6 (2)

14 มี.ค.45

- ทราบ

พล.ต.

ผอ.รพ.รร.6

20/มี.ค./45

สำเนาถูกต้อง

เสนอ.....

พ.ท.หญิง

(กัลยกา พงษ์ศิริ)

ผู้ช่วย รพ.รร.6 ชรก.หน่วยระบาดวิทยาฯ

2/เม.ย./45

คำชี้แจงสำหรับผู้เข้าร่วมวิจัยและการพิทักษ์สิทธิ์ของผู้เข้าร่วมวิจัย

ดิฉันนางสาววัลภา น้อยรังษี นักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาลเด็ก ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์มหาวิทยาลัยมหิดล กำลังทำวิทยานิพนธ์เรื่องปัจจัยทำนาพฤติกรรมของผู้ดูแลในการดูแลเด็กที่เกิดจากมารดาที่ติดเชื้อเอชไอวี/ เอดส์ ท่านเป็นบุคคลที่สำคัญยิ่งในการให้ข้อมูลครั้งนี้ จึงใคร่ขอความร่วมมือในการตอบแบบสอบถาม ซึ่งจะใช้เวลาในการตอบประมาณ 20- 30 นาที โดยแบบสอบถามมี 14 หน้า แบ่งเป็น 4 ส่วนคือ ส่วนที่ 1) เป็นข้อมูลทั่วไปของผู้ดูแล ส่วนที่ 2) เป็นข้อมูลทั่วไปของเด็ก ส่วนที่ 3) แบบสอบถามความสามารถของผู้ดูแลในการดูแลเด็กที่เกิดจากมารดาที่ติดเชื้อเอชไอวี/ เอดส์ และส่วนที่ 4) แบบสอบถามพฤติกรรมของผู้ดูแลในการดูแลเด็กที่เกิดจากมารดาที่ติดเชื้อเอชไอวี/ เอดส์ ในการตอบแบบสอบถามนี้จะไม่มีถูกหรือผิด และไม่มีผลใดๆในการรักษาพยาบาลครั้งนี้ คำตอบที่ได้จากท่านผู้วิจัยจะเก็บไว้เป็นความลับ และจะไม่มีผลต่อท่านทั้งทางตรงและทางอ้อม ซึ่งท่านมีสิทธิ์ที่จะปฏิเสธการเข้าร่วมงานวิจัยเมื่อไรก็ได้

การศึกษาครั้งนี้จะเป็นประโยชน์อย่างยิ่งต่อส่วนรวม เพราะจะนำผลที่ได้ไปใช้ในการปรับปรุงแผนการพยาบาล การให้คำแนะนำแก่ผู้ดูแลเด็กที่เกิดจากมารดาที่ติดเชื้อเอชไอวี/ เอดส์และครอบครัว และเพื่อเป็นข้อมูลสำหรับนักศึกษาพยาบาลและผู้สนใจในอนาคตต่อไป

นางสาววัลภา น้อยรังษี

ผู้ทำการศึกษาวิจัย

สำหรับผู้เข้าร่วมการวิจัย

ข้าพเจ้าได้รับทราบรายละเอียดของการวิจัยดังที่ได้อธิบายไว้ข้างต้น มีความเข้าใจและยินดีเข้าร่วมโครงการศึกษาวิจัยครั้งนี้

ลงชื่อ.....ผู้ดูแลเด็ก

วันที่.....เดือน.....พ.ศ. 254.....

APPENDIX C

คู่มือการให้คะแนน แบบสอบถามผู้ดูแลเด็กที่เกิดจากมารดากลุ่ม เอชไอวี/เอดส์

ส่วนที่ 1. และส่วนที่ 2. บันทึกคำตอบตามที่ผู้เข้าร่วมโครงการตอบมา

ส่วนที่ 3. แบบวัดความสามารถในการดูแลบุคคลที่ต้องพึ่งพา

1. การให้คะแนนในข้อคำถามเชิงบวก ใช้ไม้บรรทัดมาตรฐานวางบนแนวเส้นที่กำหนดซึ่งทุกข้อคำถามมีความยาว 10 เซนติเมตร และอ่านความยาวตั้งแต่จุดสุดท้ายด้านซ้ายของเส้นถึงจุดที่กากบาทตัดกับเส้นตรง คะแนนในแต่ละข้อเท่ากับความยาวในหน่วยเซนติเมตรของระยะที่อ่านได้ดังกล่าว
2. การให้คะแนนในข้อคำถามเชิงลบ ใช้ไม้บรรทัดมาตรฐานวางบนแนวเส้นตรงที่กำหนด และอ่าน คะแนนโดยเริ่มจากจุดสุดท้ายด้านขวาของเส้น คะแนนของแต่ละข้อเท่ากับระยะของความยาวในหน่วยเซนติเมตรที่อ่านได้ดังกล่าว

ส่วนที่ 4. แบบสอบถามพฤติกรรมการดูแลเด็กที่เกิดจากมารดากลุ่ม เอช ไอ วี/เอดส์

1. การให้คะแนนพฤติกรรมที่ต้องปฏิบัติในทุกวัยในเชิงบวก และในเชิงลบให้คะแนนโดย

	ปฏิบัติทุกครั้ง	ปฏิบัติบางครั้ง	ไม่ได้ปฏิบัติ
ข้อคำถามเชิงบวกประกอบด้วยข้อคำถามที่			
2, 4 - 18, 20 -22, 25 – 53	3	2	1
ข้อคำถามเชิงลบประกอบด้วยข้อคำถามที่			
1, 19, 23, 24,	1	2	3

2. การให้คะแนนพฤติกรรมที่ต้องปฏิบัติให้เหมาะสมตามวัยของเด็ก พิจารณาตามข้อคำถามต่อไปนี้

	ปฏิบัติทุกครั้ง	ปฏิบัติบางครั้ง	ไม่ได้ปฏิบัติ
ข้อคำถามที่3.			
ท่านให้เด็กรับประทานอาหารเสริมอายุ < 3 เดือน	1	2	3
อายุ > 3 เดือน	3	2	1

APPENDIX D

แบบสอบถามผู้ดูแลเด็กที่เกิดจากมารดากลุ่มเอชไอวี/ เอดส์

วัน/ เดือน/ ปี..... เลขที่แบบสอบถาม.....

โรงพยาบาล.....

เด็กชาย / หญิง.....นามสกุล.....เลขประจำตัวผู้ป่วย.....

ส่วนที่ 1. ข้อมูลส่วนบุคคลของผู้ดูแล

คำชี้แจง : แบบสอบถามส่วนนี้มีวัตถุประสงค์เพื่อสอบถามข้อมูลส่วนตัวของท่าน เพื่อนำข้อมูลที่ได้มาประกอบการศึกษาวิจัยครั้งนี้ โดยขอให้ท่านตอบข้อมูลต่างๆ โดยการ หรือทำเครื่องหมาย ✔ ลงหน้าข้อความที่ตรงกับตัวท่านมากที่สุด หรือเติมคำลงในช่องว่าง

1. ปัจจุบันท่านอายุ.....ปี.....เดือน
2. ท่านเกี่ยวข้องเป็น.....ของเด็ก/บิดา/มารดา/อื่นๆโปรดระบุ...
3. สถานภาพสมรส .....โสด / คู่ และอยู่ด้วยกัน/.หม้าย./ หย่า/แยกกันอยู่
4. การศึกษาของท่าน.....ไม่ได้รับการศึกษา/ได้รับการศึกษา สูงสุดขั้น.....
5. รายได้เฉลี่ยของครอบครัว แต่ละเดือน ระบุ.....
6. ท่านได้รับความช่วยเหลือระดับใด และอย่างไร โปรดระบุ

	ความช่วยเหลือที่ได้รับ				
	ไม่ได้เลย	ได้รับน้อย	ปานกลาง	ได้รับมาก	ระบุวิธีการช่วยเหลือ
จากเครือญาติ	.....	.....	.....	.....	.....
เพื่อนสนิท	.....	.....	.....	.....	.....
องค์กรต่างๆ	.....	.....	.....	.....	.....
แพทย์/พยาบาล	.....	.....	.....	.....	.....

7. ลักษณะการเงินของครอบครัว.....เพียงพอ/เพียงพอ และเหลือเก็บ/ เพียงพอ เหลือเก็บ และมีหนี้สิน/ไม่เพียงพอ/ไม่เพียงพอ และมีหนี้สิน
8. เกี่ยวกับค่ารักษาพยาบาลของเด็ก..เบิกได้ทั้งหมด จาก...../เบิกได้บางส่วนจาก../ เบิกไม่ได้

ส่วนที่ 2. ข้อมูลส่วนบุคคลของเด็ก

คำชี้แจง : แบบสอบถามส่วนนี้เป็นคำถามเกี่ยวกับเด็ก ขอให้ท่านตอบข้อมูลต่างๆโดยทำเครื่องหมาย ✔ ลงหน้าข้อความที่ตรงกับเด็ก หรือเติมคำในช่องว่าง

1. ขณะนี้เด็กอายุ.....เดือน
2. เริ่มตรวจพบว่าเด็กติดเชื้อเอชไอวี/ เอดส์ เมื่อ.....อายุครรภ์มารดา..... .....เด็กอายุ.....
3. เด็กเริ่มมีอาการเจ็บป่วยเมื่ออายุ.....เดือน

4. การรักษาที่ได้รับในปัจจุบัน.....มาตรวจตามนัดโดยไม่ต้องใช้ยารักษา
.....รักษาต่อเนื่อง ระบุ.....

ส่วนที่ 3. แบบวัดความสามารถในการดูแลบุคคลที่ต้องพึ่งพา

กรุณาตอบคำถามในแต่ละข้อต่อไปนี้ว่า <u>ท่านมีศักยภาพตามการรับรู้มากน้อยเพียงใดในขณะนี้</u>โดยขีดเครื่องหมาย **X** ลงบนตัวเลขที่อธิบายได้ตรงกับการรับรู้ของท่านมากที่สุด ตัวเลขตั้งแต่ 0 ขึ้นไปแสดงถึงการรับรู้ที่เพิ่มขึ้นตามลำดับจนถึง 10 โดย 0 หมายถึง การรับรู้ว่ามีศักยภาพต่ำสุด และ 10 หมายถึง รับรู้ศักยภาพสูงสุด ในแต่ละข้อเหล่านี้ไม่มีคำตอบที่ถูกหรือผิด จะมีเพียงแต่คำตอบที่ตรงกับตัวท่านจริงๆเพียงคำตอบเดียวเท่านั้น

<u>ตัวอย่าง</u> ท่านมีความรู้เกี่ยวกับชนิดอาหารที่เหมาะสมกับเด็กมากน้อยเพียงใด ?

0 10

———————————X———————————

ไม่รู้เลย รู้ทุกสิ่ง

เครื่องหมาย **X** ที่จุดนี้แสดงว่า ผู้ตอบมีการรับรู้ว่าตนเองมีความรู้ในเรื่องเกี่ยวกับชนิดอาหารที่เหมาะสมกับเด็กค่อนข้างมาก แต่ไม่ถึงกับรู้มากที่สุด

1. ท่านมีความรู้เกี่ยวกับการส่งเสริมการเจริญเติบโตของเด็กเพียงใด(ไม่รู้เลย - รู้ทุกสิ่ง)
2. ท่านมีความรู้ด้านอาหารสำหรับเด็กที่ได้รับเชื้อเอชไอวี มากน้อยเพียงใด
(ไม่รู้เลย- รู้มากที่สุด)
3. ท่านมีความรู้เกี่ยวกับวิธีการดูแลความสะอาดของอาหารสำหรับเด็กมากน้อยเพียงใด
(ไม่รู้เลย - รู้มากที่สุด)
4. การออกกำลังกายมีความสำคัญต่อเด็กมากน้อยเพียงใด(ไม่สำคัญเลย - สำคัญมากที่สุด)
5. การที่เด็กได้พักผ่อนนอนหลับมีผลต่อภาวะสุขภาพของเด็กมากน้อยเพียงใด
(ไม่มีผลเลย - มีผลมากที่สุด)
6. ท่านมีความรู้มากน้อยเพียงใดเกี่ยวกับวิธีการดูแลเด็กให้มีร่างกายแข็งแรง
(ไม่รู้เลย- รู้มากที่สุด)
7. ท่านมีความรู้มากน้อยเพียงใดเกี่ยวกับการจัดสิ่งแวดล้อมภายในบ้านให้เรียบร้อย สะอาดและปลอดโปร่ง (ไม่รู้เลย - รู้มากที่สุด)
8. ท่านมีความรู้มากน้อยเพียงไรเกี่ยวกับการรักษาเด็กด้วยยาต้านเชื้อไวรัส
(ไม่รู้เลย - รู้มากที่สุด)
9. การที่ท่านไม่ได้รับข้อมูลเกี่ยวกับความเจ็บป่วยของเด็ก หรือได้รับข้อมูลเพียงเล็กน้อย ทำให้เป็นอุปสรรคใน การดูแลเด็กของท่านมากน้อยเพียงใด

(ม่เป็นอุปสรรคเลย- เป็นอุปสรรคมากที่สุด)

10. ท่านสามารถบอกถึงสาเหตุทีทำให้เด็กมีอาการรุนแรงขึ้น หรือที่ทำให้เด็กมีอาการเจ็บป่วยได้บ่อยแค่ไหน(บอกไม่ได้เลยสักครั้งเดียว - บอกได้ทุกครั้งที่เด็กมีอาการ)
11. เมื่อเด็กมีอาการเจ็บป่วยถึงขั้นต้องได้รับการรักษาท่านสามารถตัดสินใจพาเด็กไปพบแพทย์ได้ถูกต้องบ่อยแค่ไหน (ไม่เคยตัดสินใจถูกเลย - ตัดสินใจถูกทุกครั้ง)
12. ท่านสามารถบอกถึงความรู้สึก ดีใจ เสียใจ ของเด็กได้บ่อยแค่ไหน (บอกไม่ได้เลย - บอกได้ทุกครั้ง)
13. ท่านสามารถดูแลงานบ้านควบคู่ไปกับการดูแลเด็กได้อย่างราบรื่นบ่อยแค่ไหน (ทำไม่ได้เลย — ทำได้ตลอดเวลา)
14. ท่านมีปัญหาสุขภาพจนเป็นอุปสรรคในการดูแลเด็กบ่อยแค่ไหน (ไม่เป็นอุปสรรคเลย - เป็นอุปสรรคมากที่สุด)
15. ท่านรู้สึกเหนื่อยล้าในการดูแลเด็กของท่านบ่อยแค่ไหน (ไม่เคยรู้สึก — รู้สึกตลอดเวลา)
16. ท่านสนใจเอาใจใส่ดูแลสุขภาพของตัวท่านเองมากน้อยเพียงใด (ไม่สนใจเลย - สนใจตลอดเวลา)
17. ท่านมีอาการอ่อนแรงจนไม่สามารถทำกิจกรรมให้กับเด็กได้บ่อยเพียงใด (ไม่เคยมีอาการเลย - มีอาการเป็นประจำ)
18. ท่านมั่นใจมากน้อยเพียงใดว่าเด็กจะได้รับประทานยาทุกๆวัน (ไม่มั่นใจเลย - มั่นใจมากที่สุด)
19. ท่านมั่นใจมากน้อยเพียงใดเกี่ยวกับการรักษาความสะอาดปากฟันของเด็ก (ไม่มั่นใจเลย - มั่นใจมากที่สุด)
20. ท่านมั่นใจมากน้อยเพียงใดเกี่ยวกับการดูแลให้เด็กมีร่างกายสะอาด (ไม่มั่นใจเลย-มั่นใจมาก)
21. ท่านมีความมั่นใจในการจัดการกับภาวะอารมณ์เสียของเด็กได้มากน้อยเพียงใด (ไม่มั่นใจเลย - มั่นใจมากที่สุด)
22. ท่านมีความสุขมากน้อยเพียงใดที่ได้กระทำในสิ่งที่ดีให้แก่เด็ก (ไม่มีเลย- มีตลอดเวลา)
23. ท่านรู้สึกภาคภูมิใจมากน้อยเพียงใดที่ได้กระทำการดูแลให้แก่เด็ก (ไม่เคยภาคภูมิใจ - ภาคภูมิใจมากที่สุด)
24. ท่านสามารถแก้ไขปัญหาเฉพาะหน้าเกี่ยวกับการดูแลเด็กได้บ่อยแค่ไหน (ไม่เคยแก้ไขได้เลย - แก้ไขได้ทุกครั้ง)

25. ท่านเคยสับสน หรือไม่แน่ใจในความรู้สึกของตนเองที่มีต่อเด็กบ่อยแค่ไหน
(ไม่เคยสับสนเลย - สับสนตลอดเวลา)
26. ท่านรู้สึกเหน็ดเหนื่อย อ่อนล้า หรือท้อแท้ใจในการดูแลเด็กบ่อยแค่ไหน
(ไม่เคยรู้สึก - รู้สึกตลอดเวลา)
27. ท่านรู้ข้อมูลเกี่ยวกับโรคและการเจ็บป่วยของเด็กมากน้อยเพียงใด
(ไม่รู้เลย -รู้มากที่สุด)
28. เมื่อมีปัญหาในการดูแลเด็กท่านขอความช่วยเหลือจากบุคลากรทางการแพทย์บ่อยแค่ไหน (ไม่เคยขอได้เลย - ขอได้ทุกครั้งที่มีปัญหา)
29. การขอความช่วยเหลือจากผู้อื่นเป็นสิ่งที่ยากลำบากสำหรับท่านมากบ่อยเพียงใด
(ไม่ยากลำบากเลย - ยากลำบากมากที่สุด)

ส่วนที่ 4. แบบสอบถามพฤติกรรมในการดูแลเด็กที่เกิดจากมารดากลุ่ม เอชไอวี / เอดส์ของผู้ดูแล

คำชี้แจง : ต่อไปนี้เป็นข้อคำถามที่เกี่ยวกับการดูแลเด็ก ในการตอบแต่ละข้อไม่มีตำตอบถูกหรือผิด ให้ท่านตอบโดยทำเครื่องหมาย ✔ ลงในช่องคำตอบที่ตรงกับการปฏิบัติจริงข้อคำถามแต่ละข้อมีคำตอบให้เลือก 4 ตอบ แต่ละคำตอบมีความหมายดังนี้

ปฏิบัติทุกครั้งหรือทุกวัน	หมายถึง	ผู้ดูแลกระทำกิจกรรมทุกครั้งที่มีเหตุการณ์ หรือการกระทำเป็นประจำทุกๆวัน
ปฏิบัติบางครั้ง หรือบางวัน	หมายถึง	เมื่อมีเหตุการณ์ผู้ดูแลกระทำกิจกรรมนั้นเป็นบางครั้ง หรือ เป็นบางวัน
ไม่ได้ปฏิบัติ	หมายถึง	ผู้ดูแลไม่เคยทำกิจกรรมนั้นให้แก่เด็ก แม้ว่ามีเหตุการณ์

	ปฏิบัติทุกครั้งหรือทุกวัน	ปฏิบัติบางครั้งหรือบางวัน	ไม่ได้ปฏิบัติ
1. เด็กได้ดูดนมมารดา	-	-	88
2. เด็กได้ดูดนมผสม	88	-	-
3. ท่านให้เด็กรับประทานอาหารเสริมตามวัย (ระบุประเภทและมื้อ)	79	5	4
4. ท่านได้อุ้มเด็กบ่อยเพียงใด	79	8	1
5. ท่านได้โอบกอดบ่อยเพียงใด	79	7	2
6.ท่านได้หยอกล้อ หรือ เล่นบ่อยเพียงใด	78	10	-
7.ท่านติดตามน้ำหนัก ส่วนสูงของเด็กเป็นระยะๆ อย่างน้อยทุกครั้งที่มาตรวจตามนัดบ่อยเพียงใด	62	24	2
8.เด็กได้เล่นของเล่นที่ส่งเสริมความแข็งแรงของร่างกาย เช่นลูกบอล รถลาก รถเข็น ฯลฯบ่อยเพียงใด	43	24	21
9.ท่านดูแลไม่ให้เด็กหยิบของเล่น/เศษอาหารที่ตกลงพื้น เข้าปากบ่อยเพียงใด	33	33	22
10.ท่านดูแลไม่ให้เด็กเล่นของเล่นที่มีคมหรือของเล่นชิ้นเล็กๆบ่อยเพียงใด	41	26	21
11.ท่านทำความสะอาดของเล่น หรือบริเวณที่เด็กเล่นบ่อยเพียงใด	45	35	8
12.ท่านอ่านฉลากยาก่อนนำยามาให้เด็กกินทุกครั้งบ่อยเพียงใด	78	8	2
13.ท่านพาเด็กไปรับวัคซีนตามที่แพทย์นัดทุกครั้งบ่อยเพียงใด	84	3	1
14.ท่านพาเด็กไปพบแพทย์ตามนัดทุกครั้งแม้ว่าเด็กไม่มีอาการเจ็บป่วยบ่อยเพียงใด	77	11	-
15.ท่านล้างมือภายหลังขับถ่ายของท่านบ่อยเพียงใด	69	16	3
16.ท่านล้างมือภายหลังขับถ่ายของเด็กเพียงใด	64	18	6
17.ท่านล้างมือก่อนเตรียมนม หรือปรุงอาหาร	59	28	1
18.ท่านล้างมือก่อนป้อนนม หรืออาหารให้เด็กอย่างไร	45	39	4
19.ท่านเคี้ยวอาหารแล้วนำไปป้อนเด็กบ่อยเพียงใด	2	10	76
20.ท่านให้เด็กดื่ม น้ำต้มสุก บ่อยเพียงใด	80	7	1

	ปฏิบัติทุกครั้งหรือทุกวัน	ปฏิบัติบางครั้งหรือบางวัน	ไม่ได้ปฏิบัติ
21.ท่านกวาดเช็ดถูบ้าน และจัดภายในห้องที่เด็กอยู่ให้สะอาดบ่อยเพียงใด	69	19	-
22.ท่านจัดภายในบ้าน ให้มีอากาศถ่ายเทได้สะดวกบ่อยเพียงใด	68	20	-
23.เด็กได้เล่นใกล้ชิดผู้ที่มีอาการเจ็บป่วยต่างๆ เช่นเป็นหวัด มีไข้ ไอ เจ็บคอ บ่อยเพียงใด	45	42	1
24.เด็กได้เล่นกับสัตว์เลี้ยง เช่น แมว สุนัข กระต่ายบ่อยเพียงใด	65	13	10
25.ท่านตัดเล็บมือเล็บเท้าของเด็กให้สั้น สะอาดบ่อยเพียงใด	51	32	5
26.หากอากาศหนาวเย็นท่านจะดูแลให้เด็กใส่เสื้อผ้าที่อบอุ่นบ่อยเพียงใด	82	6	-
27.ท่านดูแลความสะอาดของช่องปาก เหงือก และฟันของเด็กอย่างน้อยวันละ 2 ครั้งบ่อยเพียงใด	37	41	10
28.ท่านดูแลให้เด็กได้อาบน้ำ หรือเช็ดตัวอย่างน้อยวันละ 1 ─ 2 ครั้งบ่อยเพียงใด	84	3	1
29.ท่านเปลี่ยนผ้าปูที่นอนให้ทุกครั้งที่เด็กปัสสาวะรดที่นอนบ่อยเพียงใด	55	32	1
30.ท่านเช็ดทำความสะอาดช่องหูภายหลังอาบน้ำให้เด็กบ่อยเพียงใด	50	38	-
31.ท่านเช็ดผิวหนังรอบอวัยวะขับถ่ายให้แห้ง และสะอาดภายหลังขับถ่ายทันทีบ่อยเพียงใด	60	27	1
32.ท่านแช่เสื้อผ้าที่เปรอะเปื้อนเลือดและสิ่งคัดหลั่งของเด็กด้วยน้ำยาคลอรอกซ์ อย่างน้อย 30 นาทีก่อนนำมาซัก	10	27	51
33.ขยะที่เปรอะเปื้อนเลือดและสิ่งคัดหลั่งจากเด็กท่านราดน้ำยาคลอรอกซ์ก่อนจะแยกทิ้ง	8	18	62
34.เมื่อเด็กมีไข้ ท่านให้ยาลดไข้แก่เด็กบ่อยเพียงใด	48	21	19
35.เมื่อเด็กมีไข้ท่านเช็ดตัวลดไข้ให้เด็กบ่อยเพียงใด	57	16	15
36.เมื่อเด็กเริ่มมีอาการไข้ ไอ มีน้ำมูกท่านพาเด็กไปพบแพทย์ทันที	33	36	19

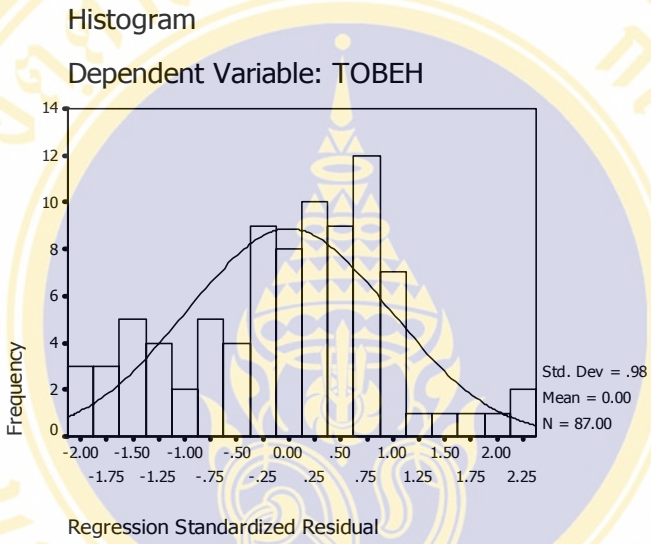
	ปฏิบัติทุกครั้งหรือทุกวัน	ปฏิบัติบางครั้งหรือบางวัน	ไม่ได้ปฏิบัติ
37.เกี่ยวกับอาการถ่ายเหลวติดต่อกัน มากกว่า 2 ครั้ง ท่านงดนมทันที	14	22	52
38.ท่านให้เด็กดื่มน้ำเกลือแร่บ่อยเพียงใด	20	22	46
39.ท่านพาเด็กไปพบแพทย์ทันทีบ่อยเพียงใด	40	16	32
40.ให้เด็กดูดน้ำหลังมื้อนม /อาหารทุกมื้อบ่อยเพียงใด	52	24	12
41.เช็ดทำความสะอาดช่องปากหลังอาหารทุกมื้อบ่อยเพียงใด	32	41	15
42.เมื่อมีฝ้าขาวในปากท่านพาเด็กไปพบแพทย์ทันทีบ่อยเพียงใด	13	22	53
43.ท่านหาข้อมูลเกี่ยวกับความเจ็บป่วยของเด็กบ่อยเพียงใด	77	8	3
44.ท่านหาโอกาสพูดคุยกับผู้ปกครองของเด็กที่เป็นโรคเดียวกันกับเด็กที่ท่านดูแลเพื่อเป็นการแลกเปลี่ยนประสบการณ์บ่อยเพียงใด	11	34	41
45.ท่านดูแลให้เด็กได้รับยาตามแผนการรักษาของแพทย์อย่างเคร่งครัด	77	8	3
46.ท่านสอบถามรายละเอียดเกี่ยวกับการให้ยาและข้อควรระวังในการให้ยาแก่เด็กบ่อยเพียงใด	63	14	11
ท่านมีโอกาสหาความรู้เกี่ยวกับโรค ความก้าวหน้าในการรักษาและการดูแลเด็ก จากสื่อต่างๆ บ่อยเพียงใด			
47. ดูจากรายการโทรทัศน์	34	43	11
48.ฟังรายการทางวิทยุ	3	34	51
49.อ่านจากหนังสือ	22	38	28
ท่านขอความช่วยเหลือหรือสอบถามเกี่ยวกับการดูแลเด็กของท่านจากบุคคลต่อไปนี้บ่อยเพียงใด			
50.แพทย์	38	35	15
51.พยาบาล	27	36	25
52.ญาติ	11	23	54
53.เพื่อน	7	9	72

APPENDIX E

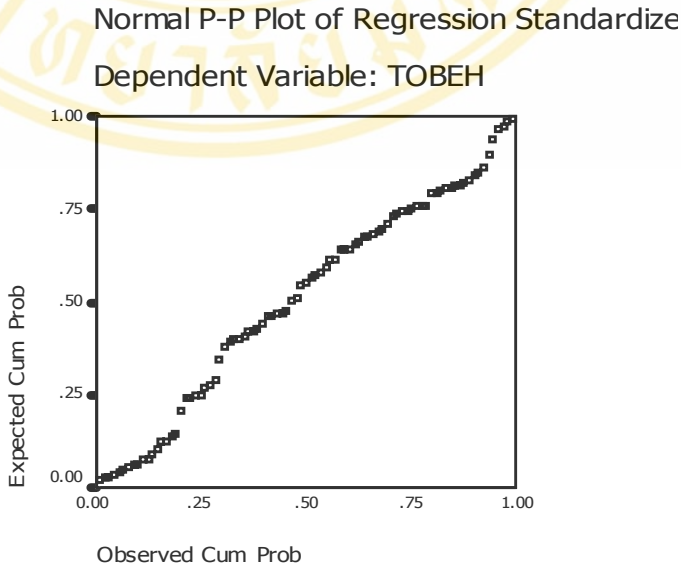
Test of Residual

Independent variables were caregiver-child relationship, caregiver's education, family income, and caregiver capability. Dependent variable was care-giving behavior.

1. Normality



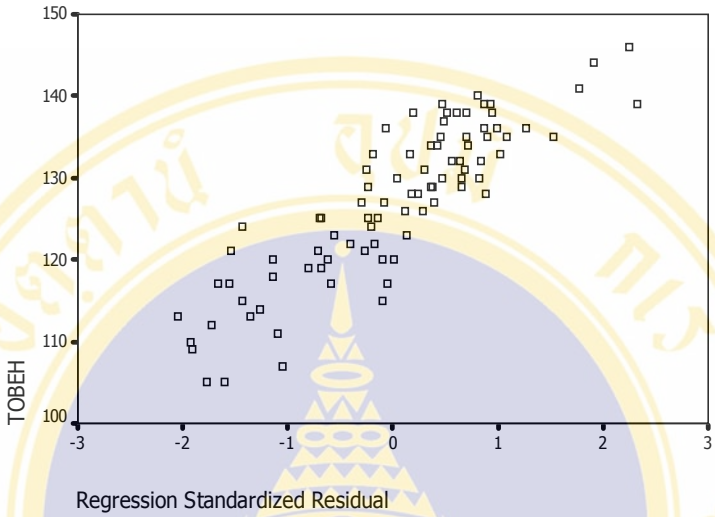
2. Linearity



3. Homoscedasticity

Scatterplot

Dependent Variable: TOBEH



4. Autocorrelation

Durbin-Watson = 1.856

5. Collinearity Statistics

	Tolerance	VIF
Caregiver-Child Relationship	.930	1.705
Caregiver Education	.899	1.122
Family Income	.951	1.051
Excluded Variables		
Caregiver Capability	.963	1.038

BIOGRAPHY

NAME	Wanlapa Noirungsee
DATE OF BIRTH	7 June 1961
PLACE OF BIRTH	Pranakorn-sri-Ayuthaya, Thailand
INSTITUTIONS ATTENDED	Mahidol University, 1980-1984: Bachelor of Nursing Science Mahidol University, 1999-2004: Master of Nursing Science (Pediatric Nursing)
POSITION & OFFICE	270 Ramathibodi Hospital, Bangkok, Thailand Position : Registered Nurse