To the Graduate Council:

I am submitting herewith a dissertation written by Maureen A. Nalle entitled "Health Education in Child Day Care: Needs Assessment and Current Practice." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the Doctor of Philosophy, with a major in Health Education.

Billy C. Wallace, Chairperson

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Associate Vice Chancellor
and Dean of The Graduate School

HEALTH EDUCATION IN CHILD DAY CARE:

NEEDS ASSESSMENT AND

CURRENT PRACTICE

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Maureen Ann Nalle

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Dedication

This manuscript is dedicated to my husband, Denny, and to my children, Jennifer, Sarah, and Patrick, for their love, understanding, and perseverance through all the phases of this endeavor.

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ABSTRACT

Increased utilization of out-of-home child care in the United States has been accompanied by growing evidence of the health and safety implications for children, providers, and the community. Lack of standards to ensure a healthy and safe environment, an increased rate of infectious disease, and the incidence of childhood injury are major areas of concern. Child care settings have not been a traditional site for health education and health promotion, but the emergence of significant health and safety issues presents opportunities and challenges for health educators.

The purpose of this study was to conduct an assessment of the health and safety concerns, health education needs, and current health education practices of child day care centers. The 15-item Child Care Health Education Assessment (CCHEA) was developed, reviewed by a national panel of experts, and pretested with child care directors in the study area. The instrument was found to be valid and reliable for assessment of health education needs with this target population. The CCHEA was distributed by mail to the directors of 453 child care centers. A 23% response rate (N=103) was obtained.

Although health and safety concerns were reported infrequently, infectious disease, behavior and discipline and chronic health problems were identified as the primary concerns in most centers. Health education for staff, children, and parents was rated as very important by the majority of directors, and a significant number of centers were providing health education for each target group. The highest level of health education activity was focused on children, with 93% of centers reporting this as an integral component of their early childhood curriculum.

Directors identified a number of priority health education topics for their center, including: behavior and discipline, growth and development, and infectious disease for both parents and staff; safety, fitness and exercise, and self-esteem for children. Directors also indicated the need for professional support and additional resources to enhance their current health education efforts.

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CHAPTER I

INTRODUCTION

The health and safety implications of group child care have been recognized for many years. As early as 1923, Gesell called attention to inadequate child care quality, poor sanitary conditions, and lack of provisions to protect "child hygiene" in day nurseries. He observed that "nowhere does the curve of child care fall so low as in numerous nurseries, baby farms, and incompetent homes..." (p. 10). From the public health perspective, the landscape of child care in the United States has not improved dramatically in the intervening seventy years, despite significant economic growth and major advances in technology and preventive medicine.

The current state of child care in America is abysmal (Zigler & Gilman, 1993). National studies of the effects of regular out-of -home care reveal that many children are cared for in settings that are neither healthy nor safe (Hayes, Palmer, & Zaslow, 1990). The quality of care in most centers is poor to mediocre, with one of every eight centers delivering a level of care which actually threatens the health and safety of young children (Cost, Quality, and Child Outcomes Study, 1995). Much of the current research in child care reflects a paradox which relates the healthy development of children to the quality of care, yet the United States lacks a clear public policy on what constitutes a quality program and who is responsible for ensuring it (Hayes et al., Howes & Droege, 1994).)

As a significant and growing proportion of young children are cared for in various types of child care facilities, evidence of the associated health and safety risks has created national concern among parents, providers, and health professionals (Goodman et al., 1994). Increased rates of infectious disease and injury and an overall lack of standards to protect the health and safety of children in this environment have been identified as major concerns. There is also indisputable evidence of the link between child day care and public health risks for staff, family, and the community (Kotch & Bryant, 1990; Aronson, 1991; Thacker, Addis, Goodman, Holloway, & Spencer, 1992).

The emergence of these issues demonstrates numerous opportunities for health protection and health promotion in child care programs. Beyond assuring a basic standard of health and safety, there is a need for health screening of children, improved nutrition and dental care, disease and injury prevention, and comprehensive health education. Although child care centers have not been a traditional site for health promotion and health education, they represent an increasingly accessible and appropriate target population for interventions which promote health and reduce risks for children, parents, and day care providers (American Public Health Association & American Academy of Pediatrics 1992; Aronson, 1994; Randolph, 1994).

Statement of the Problem

The health education practices of child day care centers have not been studied extensively. However, recent studies identify significant deficiencies in the areas of prevention of communicable disease, safety regulations, staff health training and practices, and health curriculum content which may be amenable to preventive intervention and enhanced health education efforts. Given that current standards and regulations have failed to ensure a healthy day care environment, there is widespread acknowledgment of the need to define health and safety risks and develop effective health education and health promotion strategies to protect children, parents, and providers in these settings (Aronson, 1994; Randolph, 1994).

Purpose of the Study

The purpose of this study was to assess the health education needs of child day care centers in East Tennessee. To conduct this study, it was necessary to develop and pretest an instrument for data collection related to the health and safety concerns, health education needs, and health education practices of these centers.

Justification for the Study

While numerous health and safety risks associated with child day care have been identified in the literature, there is little evidence of comprehensive health promotion and health education in this setting, and few studies of the health education needs in child care programs

have been conducted (Nelson & Hendricks, 1988; Crowley, 1990). The goals of health promotion in child care encompass aspects of environmental health and safety, preventive services, the health practices of children and staff, and health education for child care providers, their children, and families (Taras, Trahms, Mangu, & Wong, 1994). Achievement of these goals has been constrained by the lack of research related to health education and health promotion efforts in day care, and limited data related to the efficacy, practicality, and cost-effectiveness of these initiatives (Berkelman, Guinan, & Thacker, 1989; Thacker et al., 1992). Because young children, their parents, and the staff of child care centers represent an important target population, research to determine the extent of current practice and identify gaps that presently exist is urgently needed as a foundation from which to develop, implement, and evaluate health education strategies in the child care environment (Randolph, 1994).

Research Questions

The questions posed for investigation in this study were:

1. What are the major health and safety concerns of child care directors?
2. What are the health education needs of staff, children, and parents in child care programs?
3. What are the current health education practices in child day care?
4. Is the Child Care Health Education Assessment (CCHEA) a valid, reliable, and useful instrument for the purpose of this study?

Assumptions

The following assumptions were an integral part of this study:

1. There is a need for comprehensive health education programs in child day care.
2. A valid and reliable instrument for assessment of health education needs is a prerequisite to defining effective interventions for this target population.
3. Directors' assessments of health education needs and practices would be accurate.
4. The sample would be representative of child day care centers in Tennessee.

Delimitations

The delimitations of this study were:

1. The sample consisted only of child day care agencies licensed by the Tennessee Department of Human Services.
2. The sample included only day care centers, defined as serving thirteen or more children.
3. Family and group day care homes and after school programs were excluded.
4. Program directors were selected only from day care centers whose population included children between the ages of three to five years.

Limitations

The following factors were recognized as limitations in this study:

1. The current health education practices of the child care centers could not be observed or controlled.
2. There was no control over program directors' perceptions related to health and safety concerns or health education practices.
3. Participation of each center was at the discretion of the director.

Definition of Terms

1. Child Day Care Center: Child care agency which serves thirteen or more children and provides out-of-home care on a regular basis for no more than twelve hours per day.
2. Licensed center: As defined within Tennessee Department of Human Services licensing requirements, and identified through current listing of licensed providers in the defined geographical areas.
3. East Tennessee: Two licensing districts defined by Tennessee Department of Human Services, encompassing District I (8 counties) and District 2 (17 counties). Western boundaries are Monroe, Loudon, Roane, Morgan, and Scott counties; far upper east boundary is Johnson county.

4. Program director: The individual who is administratively responsible for daily operation of the child care center and the on-going surveillance of program, staff, and child care services.
5. Health education needs: an estimation of the health education interventions required to meet the health and safety needs of the child day care population, including children, parents, and staff, as identified in the Child Care Health Education Assessment.

Data Collection

Data collection was accomplished by administering the Child Care Health Education Assessment (CCHEA) developed for this study. The instrument was designed to assess health and safety concerns in child care settings, current health education practices, and the health education needs of children, parents, and child care staff. The survey was distributed by mail-out to directors of child day care centers in East Tennessee.

Organization of the Study

The purpose of this study was to identify the major health and safety concerns, health education practices, and health education needs of child care centers in East Tennessee. Research questions related to these areas and to study instrumentation have been presented. Chapter I also identifies the assumptions, delimitations, limitations and definitions which were included in this study. The remainder of the study is organized as follows: Chapter II presents literature and research related to health and safety issues in child care settings, the health education needs of children, parents, and day care staff, and research related in content and methodology. The methodology and procedures used in the study are explained in Chapter III. Chapter IV contains an analysis and evaluation of the collected data. A summary, review of findings, conclusions, and recommendations are presented in Chapter V. Chapter VI is a retrospective look at the study.

CHAPTER II

REVIEW OF THE LITERATURE

A historical overview of child welfare provisions, public health activities, and social legislation in the United States reflects a tendency to neglect the early years of childhood or entrust them to the home. From the standpoint of public hygiene and education, the gap between infancy and the preschool years was described in the past as "the no man's land" of social and public health endeavors (Gesell, 1923). However, in recent years, the care and education of young children--once a matter of little concern outside the family--has emerged as an issue of great social debate and public policy (Committee for Economic Development, 1993).

Over the past several decades, major demographic and social trends in the United States have resulted in a dramatic increase in out-of-home care for children. Increased participation of women in the workforce, growing numbers of single-parent families, and increased poverty have contributed to the immense demand for alternative child care in this country (Zigler & Hall, 1988; Hayes et al., 1990; Thacker et al., 1992). Dawson and Cain (1990) estimated that 60% of children under the age of five had mothers in the workforce and 90% of families with preschool children used full or part time child care services.

The rapid expansion and utilization of child care services in this country has been accompanied by growing evidence of associated health and safety risks and fundamental concerns about the quality and outcomes of these arrangements (Hayes et al, 1990; Cost, Quality, & Child Outcomes Study, 1995). Despite increased interest in the quality, availability, and cost of child care services, health and safety issues have not been adequately addressed (Thacker et al., 1992). Research consistently demonstrates the health and safety implications of group child care for children, day care provides, family contacts, and the community. Increased susceptibility and communicability of disease, staff and child hygiene practices, child-to staff ratios, staff training, and physical setting have been identified as significant risk factors in this environment (Aronson, 1991; Kotch & Bryant, 1990; Thacker et al; 1992; Calder, 1994; Swanson,

1994). Evidence of the potential health consequences of child day care, coupled with increased accessibility of this target population has promoted greater awareness of the need for comprehensive health promotion and health education initiatives in early childhood programs.

National health and safety standards for child day care settings established by the American Public Health Association and American Academy of Pediatrics (APHA/AAP, 1992), and the National Association for the Education of Young Children (Kendrick, Kaufmann, & Messenger, 1995), contain comprehensive recommendations for health education of children, parents, and staff. Currently, however, there are no specific policies for implementation of these standards across states. As Aronson (1994) points out, guidelines and standards are not licensing requirements . Therefore, implementation of health education at any level is highly variable across child care settings, and actual practices are difficult to determine without a survey of child care centers to obtain this information.

While there is widespread support of health education in early childhood programs, there is currently a need for assessment, planning, and implementation of multi-level health education interventions to enhance the health and safety of children, providers, and parents in this setting Nelson & Hendricks, 1988; Crowley, 1990; Daniel, 1993; Aronson, 1994; Randolph, 1994). The review of the literature will address the following issues related to health education in child day care: the impact of child day care on children, staff, family, and community health and safety; 2) health education needs of children, staff and parents; and 3) research related to the methodology of this study.

Health and Safety Issues in Child Day Care

Infectious Disease

An elevated risk of infectious disease transmission in child day care is related to host and environmental factors in this setting (Thacker et al., 1992; Osterholm, 1994). According to Donowitz (1993), the most significant of these is the immunologic susceptibility of young children who are in close daily contact with each other. Age-related factors such as the mouthing behavior

of infants and toddlers, lack of toilet training, and poor hygiene practices among young children contribute to both person-to-person and airborne transmission of pathogens (Henley, 1993). Numerous studies (Kotch & Bryant, 1990; Thacker et al, 1992; Hardy & Fowler, 1993), have also identified center characteristics related to group size, separation of age groups, staff training and care giver health practices as significant risk factors for infectious disease.

The implications of infectious disease, the primary health concern in day care, of ten extend beyond the child care setting. Enteric and respiratory pathogens responsible for outbreaks within the center are readily transmitted to household members and the community (Davis, MacKenzie, & Addis, 1994). In the day care environment, isolation and control is hampered by the fact that many children are infectious before they are symptomatic and/or are chronic carriers, allowing for the undetected spread of disease to peers and adult workers at the center, as well as to parents and siblings (Donowitz, 1993). Osterholm (1994) cites four patterns of infectious disease within the child day care environment: 1) "equal opportunity diseases" which affect children, day care staff, and family members (respiratory and gastrointestinal infections); 2) diseases which are not apparent in children, but apparent in adult contacts (Hepatitis A); 3) diseases which affect children only (Haemophilus influenza type b, otitis media, varicella); and 4) infections which are not apparent children or adult contacts but have serious consequences for pregnant women (Cytomegalovirus).

Respiratory pathogens, both viral and bacterial, are commonly found in day care centers (Thacker et al., 1992). Transmission occurs by respiratory droplets, fomites, or direct contact with infected secretions; viruses may also survive for hours or days on environmental surfaces or toys (Smith, 1986; Hendley, 1993). Haskins & Kotch (1986) cite respiratory infections, ranging from the common cold to pneumonia, as the most frequent cause of acute, minor illness and absence among children in day care. In a 1988 study which compared the frequency of illness and infections among children in various types of child care arrangements, highly significant differences were noted for children in day care in both the incidence of respiratory infections and

associated days of illness (Wald, Dashefsky, Byers, Guerra, & Taylor, 1988). Nationwide, approximately 20% to 30% of respiratory illness in young children is attributable to day care attendance (Hurwitz, Gunn, Pinsky, & Schonberger, 1991). Further estimates by Kotch and Bryant (1990) indicate that children in day care experience 40%-50% more respiratory infections than children cared for at home, with associated medical costs of $90 million per year. Schwartz et al. (1994) note that because there are few organism-specific vaccines for respiratory illness, other preventive approaches and behavioral interventions are needed.

While respiratory infections in young children are generally associated with mild illness, there is evidence of significantly increased incidence of otitis media (ear infection) associated with upper respiratory infections in this age group. Studies show that children in day care are at two to three times greater risk for persistent otitis media; in fact, day care attendance is the second most important risk factor for chronic ear infections (Haskins & Kotch, 1986). Because of the high prevalence of recurrent otitis media among young children and its association with child care, Hardy and Fowler (1993) conducted a study to determine the extent to which child care was a risk factor for recurrent ear infections. Data on 5818 children less than six years of age were taken from the 1988 National Health Interview Survey of Child Health. Controlling for factors such as age, sex, and medical history, children in out-of-home care, particularly those younger than three years of age, still had a 50% higher risk of repeated ear infections than those cared for at home. In addition, larger group sizes and center care (as opposed to family day care) were more important than the amount of time spent in child care.

The demonstrated risk of persistent otitis media in child care settings has significant implications for pediatric morbidity. In terms of cost and long term effects, potential developmental consequences relate to conductive hearing loss and impaired intellectual , linguistic, and emotional development (Haskins & Kotch, 1986). Otitis media and its sequella also account for substantial medical costs; approximately 21% of children in day care are hospitalized for

treatment or surgery related to otitis media at an estimated cost of $2 billion per year (Wald et al, 1989; Kotch & Bryant, 1990; Schwartz et al, 1994).

Haemophilus influenzae type b (Hib) is a common respiratory pathogen and the major cause of bacterial meningitis in young children (Murphy, 1993). Several studies (Thacker et al., 1992; Schulte, Birkhead, Kondracki, & Morse, 1994; Osterholm ,1994) provide strong evidence that children in day care are at a significantly greater risk than children cared for at home, with higher incidence among children less than two years of age and those enrolled in large centers. Among children who contract Hib disease, Haskins and Kotch (1986) report that nearly 100% require hospitalization, at an average cost of $6000. Due to the increased risk of serious, invasive infection and substantial secondary spread to day care peers and household contacts, H. influenzae has serious public health implications (Murphy, 1993). In recent years the availability of an effective Hib vaccine has resulted in an opportunity for widespread public health protection through vaccination of day care children. In New York State and nationally, dramatic decreases in the incidence of Hib have already been reported, but many states do specifically require this vaccination for day care enrollment (Schulte et al.).

There is also considerable evidence of the relationship between gastrointestinal diseases and day care. Infectious agents (bacteria, parasites, and viruses) transmitted by the fecal-oral route have been associated with both sporadic illness and outbreaks in the day care setting (Thacker et al, 1992; Davis, MacKenzie, & Addis, 1994). Haskins and Kotch (1986), in a review of studies from several countries and a variety of settings, demonstrated a significantly higher attack rate for diarrheal diseases among children in day care, with infants and toddlers at greatest risk. Alexander, Zinzeleta, Mac Kenzie, Vernon, and Markowitz (1990) also found a significantly increased risk of gastrointestinal conditions among children in day care centers; children less than 3 years of age were 3.5 times more likely, and children age 3 to 5 years were twice as likely to experience an acute gastrointestinal illness than children cared for at home. In addition to the

risks for children, secondary attack rates of nearly 25% or greater for family contacts have been reported (Haskins & Kotch).

In the day care setting, a number of factors contribute to the increased incidence of gastrointestinal diseases. Among these are the number of children under two years of age and children who are not toilet trained. The hygiene practices of care providers in relation to diapering and handling of food, as well as the separation of these functions have also been implicated in the transmission of enteropathogens (Aronson, 1991; Thacker et al, 1992). Certain pathogens, such as rotavirus, are highly infective, spread rapidly, and live for hours on surfaces. Other highly contagious organisms may cause very mild or no symptoms, so that detection, prevention, and control are extremely difficult (Matson, 1994) .

The incidence of Hepatitis A virus (HAV) in child day care is an issue of considerable public health concern due to substantial transmission rates to staff, family, and the community at large (Haskins & Kotch, 1986; Thacker et al, 1992). Significant contributing factors in transmission of HAV relate to center size, hours of operation, and the number of children in diapers (Shapiro & Hadler, 1990). In the day care setting, HAV is readily transmitted through the fecal-oral route. Person-to-person contact between children and staff, contamination of food (via staff who diaper children and prepare food), and contact with fomites on contaminated surfaces are possible sources of transmission. Despite the availability of effective preventive measures, Hurwitz et al. (1994) estimate that 14-17% of all HAV cases in the U.S. are attributable primarily or solely to child day care centers. Adults infected with HAV have more serious illness, incurring a medical cost of approximately $1000 in addition to the loss of productive work time (Haskins & Kotch, 1986).

Recent studies also document a high rate of Cytomegalovirus (CMV) infection in day care. Person-to-person transmission from child to child, child to staff and child to mothers occurs through contact with body fluids, primarily urine and saliva of infected children (Dobbins et al., 1994). Adler (1992) notes that nearly one-half of children in day care and 75%-80% of children

under two years old shed the virus for months or years. This prolonged shedding and survival of the virus on surfaces for up to thirty minutes contribute to its horizontal transmission pattern and high prevalence in child care settings. According to Kotch and Bryant (1986), the principal risk associated with CMV is not to children, who experience no apparent health effects, but to women of childbearing age. Mothers and day care providers who become infected while pregnant are at substantial risk for congenital transmission of CMV, a major cause of severe, multiple births defects (Dobbins et al.).

Unlike CMV, the risk of Hepatitis B virus (HBV) in this setting is very low. Transmission through infected blood and saliva is possible, but uncommon (Shapiro & Hadler, 1990). In child care centers, aggressive behavior such as biting may be a risk factor, but only one such case has been reported (Townsend, 1993).

Contaminated blood or body fluids also present a theoretical risk for human immunodeficiency virus (HIV) in child care (Jones & Rogers, 1990). However, Allen (1993) suggests that transmission of HIV is highly unlikely in a child care center or preschool. While children in day care have been affected by the virus, transmission from one child to another has not been reported (Osterholm, 1994).

Studies related to specific illnesses convey little information regarding the overall rates of illness and hospitalization for children in day care. Johansen, Liebowitz, and Waite (1988) examined the impact of various types of child care arrangements on the incidence of illness as measured by the annual number of "bed days". Based on a nationally representative sample of 3841 preschool children, significantly higher numbers of bed days were reported for children in day care centers; smaller centers were found to have less negative effect. In general, the study demonstrated that children in day care are ill more, supporting evidence of the substantial effects of day care on children's health. Hospitalization rates are also increased among children who attend day care. In a study of 843 children less than three years of age, children were 4.5 times more likely to be hospitalized than those cared for at home, primarily for tympanoplasty. Mean

monthly costs of medical care for day care children were also greater ($32.94 per month as compared with $19.78). An additional finding was that illness in these children accounted for 40% of parental absenteeism from work (Bell, et al., 1989).

Occupational exposure to infectious disease is considered the primary health risk for day care personnel. In addition to CMV, exposure to rubella, fifth disease, and varicella are of special concern, particularly for the unprotected or pregnant worker (Gratz & Bolton, 1994). Routine activities associated with toileting, diapering, wiping noses, hugging, and lap sitting are potential contributing factors for transmission, according to Aronson (1991). Inadequate health policies and guidelines related to staffing ratios, group size and care giver responsibilities within the center may compromise workers as well as children (Yamauchi, 1993), but recommendations for infection control, education of staff, and hygienic care of children, the environment, and food are not sufficiently emphasized as protective measures in the day care setting (Donowitz, 1993).

The magnitude and prevalence of infectious disease and other illnesses in child care are associated with substantial "costs" beyond the generally short term health consequences (Thacker et al., 1992). In addition to the previously cited medical costs of such illnesses as meningitis, otitis media, and adult HAV, there are economic issues for families, providers, and society. It is estimated that one to four weeks of work is lost annually for parents due to child illness, primarily respiratory infections and diarrhea, whose incidence in day care has been well documented. Additional costs relate to death caused by meningitis (approximately 100 per year), and neonatal outcomes of congenital CMV infection. The economic impact of increased illness, hospitalization, and monthly medical costs, combined with these factors is estimated at $1.8 billion per year (Haskins & Kotch, 1986; Kotch & Bryant, 1990; Thacker et al., 1992).

Injuries

Infectious disease accounts for greater morbidity among children but injury is the leading cause of death and disability in children of all ages (Rivara & Sacks, 1994). Although there is abundant evidence of infectious disease associated with day care attendance, Snow, Telecki,

Cline, and Dunn (1992) indicate that data related to the magnitude of accidental injuries is just beginning to emerge. In general, studies suggest that regulated, licensed centers are safe for children from an injury perspective. Considering the number of hours in attendance at day care, children may actually be safer in this environment than at home (Kotch & Bryant, 1990; Briss, Sacks, Addis, Kresnow, & O'Neil, 1994). Nevertheless, significant risks, including deficiencies in compliance with health and safety standards and lack of guidelines to ensure the safety of children in day care have been reported (Aronson & Aiken, 1980; Runyan et al., 1991; O'Connor, Boyle, O'Connor, & Letelier, 1992).

Rivara and Sacks (1994) note that injury patterns in day care settings represent a microcosm of the childhood population, as many of the factors contributing to home injuries are also present in the day care environment: poisons, aspiration, falls, electrical shock, burns, playground equipment, and motor vehicles. They also report that the frequency and severity of injuries is similar, with the exception of burns, poisonings, and motor vehicle injuries, which are less frequent in day care.

In a retrospective study of injuries among preschool children ages two to five years, Chang, Lugg, and Nebedum (1989) reported a total of 423 injury events during a two-year period. The overall incidence of injuries was 19.7 injuries per 1000 child years of which 75% were minor. Categories of injuries included contusions (47.6%), lacerations (23%), abrasions (10.8%), inflammation (5%), and fractures (3.6%). One-half of these injuries occurred outside, and over 80% of the injuries occurred in a supervised situation. Playground equipment was involved in over 30% of the injuries. A notable observation in this study was that the majority of injuries were considered to be preventable by training and/or education of staff members or elimination of hazards in the environment.

A nationwide survey of licensed day care centers was conducted by Briss in 1994, with similar findings concerning the most common types of injuries. From a total of 556 reported injuries, nearly one-half occurred on the playground; 18% of these injuries and 53% of the

fractures and concussions were due to falls from climbing equipment on the playground (Briss et al., 1994). These findings were consistent with a previous study in which 58% of all day care injuries were attributed to falls from playground equipment; lack of a resilient playground surface was implicated in 48% of the serious injuries reported (Sacks et al., 1989). The incidence of falls among children in day care is of particular concern because they can result in head trauma and permanent disability (Rivara & Sacks, 1994).

Very few studies report actual observations of safety practices in child care settings, but research has revealed several areas of deficiency. Child care safety practices were examined by O'Connor, Boyle, O'Connor and Letelier (1988). A structured telephone interview was conducted with a geographically stratified, randomly selected sample of licensed day care facilities to determine the prevalence of safety hazards and current injury prevention practices. A list of all licensed child care facilities in the states was obtained, from which 10% of the facilities in each county and several alternate facilities were randomly selected.

An introductory letter was sent to 130 selected facilities describing the proposed telephone interview. The interview consisted of nine questions to determine safety hazards related to falls, burns, suffocation, and poisoning, the known leading causes of death in this age group. Eight additional questions assessed the accessibility of emergency phone numbers and the training, interests, and practices of the staff. Questions, responses, percentages of total, and 95% confidence interval were presented.

A number of significant hazards were reported in this study. In 68% of the centers, providers did not know the temperature of the hot water; in 26% of the centers, the temperature was set over 130 degrees, representing a burn hazard for young children. More than one-half of the providers reported they did not have impact-absorbing playground surfaces. Of those centers who had syrup of ipecac for poison treatment, 17% of the medications were expired. In spite of the hazardous conditions in some settings, most providers reported regular staff meetings at which safety issues were addressed.

The research conducted by Runyan, Gray, Kotch, and Kreuter (1991) demonstrates the application of safety criteria to child care program evaluation. This study consisted of three elements: 1) development of model criteria to assess state safety regulations; 2) content analysis of the regulations; and 3) a questionnaire documenting the regulatory process in the states. Reference criteria were drawn from nationally recognized public health, pediatric health professional, and early childhood guidelines. A combined list of 130 injury-related criteria were reviewed by experts who selected 36 specific areas for evaluation. These items reflected environmental features of child care facilities which influence injury rates.

Content analysis consisted of a comparison of state regulations with these 36 criteria, on a rating scale evaluating the extent to which state regulations met, exceeded, or fell below criteria, or were not mentioned or non-specific to the day care setting. The 15 item self-administered questionnaire was sent to the state agency responsible for regulation of child care facilities, and copies of state regulations were requested.

A total of 47 states responded. As in the previously cited study, numerous deficiencies in state guidelines were revealed. Overall, there were only five criteria which were met by at least 50% of the states reviewed; 15 of the 36 items were not mentioned by more than half of the states. Significant gaps were found in relation to playground safety--the most frequent site for injury in child care. No state had regulations concerning the maximum height of playground equipment, and 96% made no specification of playground surfacing material. A majority of states fell below criterion concerning elimination of objects/foods that might cause choking. Hot water temperature hazards were again noted; 38% of the states did not even mention it. While 82% of the states require some first aid training, only 18% have a requirement for at least one staff member to be certified in cardiopulmonary resuscitation.

Alkon et al. (1994) demonstrated that injuries sustained in child care centers are attributable to both child and environmental factors. In this study, minor injuries frequently involved self-induced accidents or interactions with other children, while moderate to severe injuries were

associated with the hazards in the physical environment and individual child behavior. Clearly, as the nature of the environment, the number of hazards, and individual characteristics contribute to the risk of injury, the combined effects of these factors must be considered in developing preventive measures (Alkon et al., Rivara & Sacks, 1994).

Research related to risk of injury has focused primarily on children, but there are also occupational safety considerations for day care providers. Back injuries, bites, and dermatitis have been identified as primary risks, in addition to such environmental hazards as art materials, disinfecting solutions, and noise (Calder, 1994). Routine care taking activities frequently involve lifting, bending, and carrying which are physically stressful and increase the risk of back injuries and musculoskeletal disorders (Owen, 1994). In addition to the known risks associated with infectious disease and ergonomic hazards, Swanson (1994) emphasizes the need for further research to define the prevalence and extent of other occupational risks and their impact on providers' health and safety.

Summary

This portion of the literature review presented conclusive evidence of the health and safety issues associated with child day care. The increased incidence of infectious diseases among children and secondary spread to family contacts and day care providers, the risk of injuries to children and staff, and the estimated costs of these health and safety risks represent a tremendous public health challenge. While the potential for health promotion in child care settings has been recognized (Aronson, 1994; Randolph, 1994), there is currently little evidence of comprehensive health education initiatives among this target population.

In the day care environment, risk assessment must be accompanied by specific strategies for the prevention of infection and injury, including education of targeted groups, as well as evaluation of the effectiveness and cost-benefits of these strategies (Goodman et al., 1994). Assessment of health education needs, an essential prerequisite to the development and implementation of effective health education strategies, was thus an important component of this

study. The literature concerning the health education needs of day care providers, parents, and children will be addressed in the following section.

Health Education Needs in Child Day Care

Taras et al. (1994) identify health education as an integral component of health promotion goals in child day care. Specific health education objectives include: 1) health protection and promotion activities; 2) staff education and training related to prevention of illness and injury; 3) recognition and management of childhood illness; 4) health education for children; and 5) health education of parents (American Public Health Association & American Academy of Pediatrics, 1992). Despite more widespread emphasis on health education in early childhood programs, the actual needs of this target population have not been studied extensively. There is support within the literature, however, for multi-level, comprehensive health education which targets the health behaviors of young children, and health and safety knowledge and practices of child care staff and parents.

Health Education of Young Children

Nelson and Hendricks (1988) note that children under the age of six have rarely been the target of formal health education efforts. Yet numerous at-risk behaviors which contribute to significant health and social problems have their roots in childhood (Cohen, 1992; McGinnis, 1992). Health statistics reveal that 40% of American children are obese, inactive, or demonstrate other risk factors associated with cardiovascular disease. Thirty-three percent of boys and girls ages 6-17 years cannot run a mile in ten minutes; many of this same group cannot perform a single push-up (Vidmar, 1992). Fifty percent of elementary students have tried smoking, 22% before the age of nine (Cohen, 1992). The fact that many of these behaviors are evident before a child enters kindergarten emphasizes the need for early intervention to provide a foundation for adult behaviors and lifestyles that promote health and decrease the risk of disease and disability (Parcel, Bruhn, & Murray, 1984; Nelson & Hendricks, 1988).

Healthy People 2000: National Health Promotion and Disease Prevention Objectives (1991) established comprehensive health education for children as a national priority; more than one-third of these objectives focus on what can be achieved or significantly influenced by fostering healthy habits and responsible behavior in schools (Butler, 1994). Until recently, definitions of comprehensive school health education were limited to K-12. In 1995 the National Professional School Health Education Organization clearly recognized the potential for early childhood health education in its definition of a planned, sequential pre-kindergarten through grade 12 curriculum (Allensworth, 1993). Similarly, the interrelationship between health status and educational outcomes has been emphasized by the National Educational Goals Panel (1991) in *Goals 2000*, the national educational initiative focused on school readiness and elimination of health threats which impede learning and development. The emphasis on quality, comprehensive school health programs reflects the belief that such efforts have the potential to maximize the educational, social and health outcomes of Americas's children and youth (American Academy of Pediatrics, 1987).

Health education and health promotion efforts for young children have been advocated for years in the literature (Gochman, 1975; 1982; Mullen, 1981; Aronson, 1981; AAP, 1987). Head Start, a government funded early childhood development program has incorporated health education into its curriculum since the early 1970s. Several health education programs, developed specifically for Head Start (*Healthy, That's Me,* 1971, *Head Start on Health*, 1975, and *Web of Life*, 1975) had limited success due to lack of guidelines, poor teacher preparation, and inconsistent implementation procedures (Hendricks, 1984). These programs did not include specific types of health and safety behavior for children or sequential learning activities to teach and reinforce these behaviors (Parcel et al., 1984). Several other preschool curricula have recently emerged; *I Am Amazing* (Breighner & Rohe, 1990), and *Here We Go, Watch Me Grow* (Hendricks & Smith, 1991) reflect the collaborative efforts of early childhood and health education professionals toward the integration of comprehensive health education into early childhood programs (Hendricks & Smith, 1995). The current lack of systematic planning and implementation

of health education at the preschool level suggests, however, that the potential for influencing the health practices of young children has not been realized.

Children's health beliefs and health behaviors. Bruhn and Parcel (1982) indicate that efforts toward developing health education and promotion strategies have been limited by lack of knowledge about how young children develop health behaviors and what motivates a child's personal responsibility for health. Not enough is currently known about the young child's view of health, the roots of children's health beliefs, and the influence of numerous other factors that determine or mediate the child's health beliefs and behaviors (Gochman, 1982). Recent studies in these areas have provided valuable clues related to childhood perceptions of health and illness, suggesting that early learning experiences provide a framework within which children develop a sense of personal responsibility and initiative for the adoption of healthful habits and behaviors (Gochman, 1970; 1971; Campbell, 1975; Natapoff, 1978; Mullen, 1981; Perrin & Gerrity, 1981; Lewis & Lewis, 1982). While research is limited, there is sufficient evidence to suggest that the greatest potential for influencing the formation of children's health relevant beliefs, attitudes, and behaviors lies in the early years of childhood (Gochman, 1975; 1982; Dielman, Leech, Becker, Rosenstock, Horvath, & Radius, 1980; Bruhn & Parcel, 1982).

An overview of the literature in this area by Kalnins and Love (1982) reveals two major theoretical approaches: the cognitive developmental view based on the work of Piaget, and expectancy theory concepts of health salience, perceived vulnerability, and potential health behaviors. These domains, while somewhat limited in scope, represent major lines of research concerning children's health concepts and provide a broad conceptual and theoretical basis from which to determine the need for early childhood health education (Gochman, 1985).

The systematic developmental progression of children's concepts of health and illness has been recognized from the very earliest study by Nagy (cited in Gochman, 1985), which revealed that children under five years of age had difficulty grasping the real origins of illness while older children were able to apply concrete concepts of germs, infection, and contagion to

illness causality. Rashkis (1965) also observed that the meanings of health and illness were dependent on early organizational processes and learning over time. In this study of children four through eight years of age, even the youngest children were able to verbalize familiarity with health as a positive feeling state, although they were somewhat limited in their understanding of the concept of health. Younger children tended to express health and illness in terms of opposites, reflecting an inability to integrate these concepts at an early age. Importantly, however, the children in this study were able to describe their personal responsibilities related to health maintenance and identified specific self-care activities which could foster their health. Rashkis noted that eating took precedence over all other activities in explanations of health maintenance for children of every age. Children's responses also reflected an understanding of limitations in their ability to keeping well; many indicated that staying healthy was dependent on their parent's role in protecting them from illness.

Brodie (1974) also found that children had some perception that their behavior influenced health--specifically in terms of getting better if they were sick. In general, healthy children were found to view illness differently than sick children, who often viewed illness as punishment for their behavior. The theme of illness as punishment has been revealed in studies by Simeonsson, Buckley, and Monson (1979), and Kister and Patterson (1980). The young child between three to seven or eight years is particularly prone to this view; as a child matures he is less likely to use punishment or "imminent justice" as a causal explanation for illness.

Significant age-related differences in children's views of health were also demonstrated by Natapoff (1978). Children in third, fourth, and seventh grade responded to questions about the meaning of health, how they felt when they were healthy, and how they determined if someone else was healthy. The qualitative and quantitative changes were developmentally determined. At each level, health and illness were viewed as separate concepts. Younger children did not identify absence of illness as part of health, again reflecting their difficulty in viewing health and illness as a continuum. Older children recognized that health existed apart from and in spite of illness,

indicating a more developed ability to consider and integrate abstract qualities in relation to health. For young children, being healthy enabled them to participate in daily activities with their friends. These children also saw health as a series of specific health practices such as eating good food, keeping clean, exercising, much like those described by the children in Rashkis' (1965) study.

The developmental sequence of health and illness concepts has been explored in other studies. Palmer and Lewis (1976) observed that children's views became more differentiated over time and illness causality more specific as the child matures. While school-aged children believed that illness can be caused by human behavior, the tendency to relate illness to human action decreased over time. The 1980 study of Bibace and Walsh (1980) described children at three stages of cognitive development: prelogical, concrete-logical, and formal logical explanations. Young children between two and six years were more likely to use phenomenism--external, concrete phenomena and "magic," or contagion--proximate objects or people, as causal explanations for illness. Between the ages of seven and ten, contamination by external harmful agents and internalization of illness were more common explanations. Only at the stage of formal operations (11 years) were children able to provide physiologic explanations for illness. Children's explanations reflected not only qualitative increases in level of understanding over time, but also the extent to which children believed they exerted control over the cause of illness. Perrin and Gerrity (1981) demonstrated similar findings. Young children experienced more difficulty in their definitions of illness causation; by eighth grade an understanding of illness causation, prevention, and treatment were evident.

Preschool children's representations of "everyday" aspects of health and illness were explored by Goldman, Whitney-Saltiel, Granger, and Rodin (1991). This study moved beyond the concept of illness causation to include additional dimensions of health concept organization according to the attributes of identity, consequence, time line, cause and cure found in adults. Findings related tp children's representations of illness were consistent with to those of Bibace and Walsh (1980) and Perrin and Gerrity (1981). While children were able to provide a causal

explanation of illness, none demonstrated understanding of the interactive process involved. The interactive nature of cure for illness was understood. In general, the dimensions of children's illness representations were not different than adults, but less mature and less informed.

A significant body of research related to health beliefs and behaviors in early childhood focused on expectancy theory: the degree to which children perceive themselves as vulnerable to health problems and the influence of perceived vulnerability on potential health behavior. The first study conducted by Gochman (1970) expanded the concept of perceived susceptibility or expectancy to a broader concept of perceived vulnerability to various health problems. In the sample of children ages seven to seventeen years, statistically significant correlations were demonstrated between the expectancy of one type of health problem and other health problems. A high expectancy of remaining healthy was not related to a low expectancy of encountering specific health problems in children under 10 year of age; this did not hold true for older children. The consistent nature of the child's expectancy was found to be related to his perceived vulnerability to health problems, regardless of sex or age, suggesting that children acquire a perceptual pattern of health problems at a very early age and this pattern remains stable over time. In a subsequent study (1971), the factors of perceived vulnerability, health salience and locus of control were postulated as interrelated determinants of potential health behavior. Gochman defined potential health behavior as "those naturally occurring beliefs that reflect the person's awareness of both preventive and adaptive behaviors beneficial to health." In the study population of children ages seven to 18 years, Gochman found that in children with high perceived internal control, a significant inverse relationship existed between perceived vulnerability and potential health behavior. In children with low internal control scores, a significant positive relationship was demonstrated. Gochman concluded that the child's perceived vulnerability to health problems and potential health behaviors resulted from the interaction between perceived vulnerability, health salience, and locus of control, but children's beliefs concerning control did not necessarily relate to their beliefs about control over health.

The results of two extensive studies were reported by Gochman in 1975. These studies used large cross sectional samples of children ranging in age from eight to 17 years to explore perceived vulnerability and health motivation. The results revealed that perceived vulnerability to health problems increased developmentally until about 14 years of age, then decreased. The characteristic of health motivation was also significantly related to age. Among children in grades 3-9, health motivation decreased significantly and linearly with age. A significant relationship was observed between perceived vulnerability to health problems and health motivation, but only in the youngest groups of children (third grade, 8 years) did this occur with linearity. As vulnerability scores increased, motivation decreased. An analysis of age-related changes in perceived vulnerability revealed no significant changes, strongly suggesting that levels of perceived vulnerability do not change in any desirable direction as the child grows older.

A 1980 study by Dielman et al. provided further support for many of Gochman's findings. In this study, younger children scored higher on specific health concerns and perceived general susceptibility, while older children scored higher on perceived parental concerns. Greater variability of scores was noted for younger children. The conclusions supported Gochman's findings that health beliefs are fairly consolidated by the age of nine or ten years.

Analysis of the research and literature related to children's health concepts clearly indicates that many aspects of children's health beliefs and health behaviors are subject to developmental influences. There is evidence that the process by which individuals acquire their perspectives on health and illness begins in early childhood and emerges over the years in a process which parallels the child's general cognitive development (Campbell, 1975: Perrin & Gerrity, 1981).

The research well substantiates that health-related expectancies remain fairly constant, indicating that children begin to acquire a pattern of expectancies at an early age (Gochman, 1971, 1975; Dielman et al., 1980). Gochman (1982) suggests that beliefs about vulnerability are less likely to change in later years than at much earlier ages. He proposes that health education

programs be planned, developed, and implemented for children as young as two or three. Such programs have the potential to reach the child before he has developed a well-organized system of health beliefs and behaviors. Health motivation, which is a fairly strong component of the young child's belief system, decreases markedly with maturation. To the degree that motivation energizes and directs health-related behaviors, the young child may be the most appropriate target for molding beliefs about vulnerability to health problems (Gochman, 1975).

While the literature suggests that young children have limited understanding of abstract concepts related to health and illness, children are capable of engaging in many behaviors that positively influence their health (Bruhn & Parcel, 1982). Several recent studies have clearly demonstrated this fact. Based on the assumption that initiation and maintenance of health related behaviors are developmentally influenced, Lasky and Eichelberger (1985) examined the health views and self-care activities of young children between the ages of four and six years. Children were asked to make decisions concerning activities that contributed to their health as well as provide a rationale for their choice. While children demonstrated different levels of decision making and independence over time, even at an early age they were able to understand and exercise self-care practices. Sixty-seven percent reported an understanding of health, and 65% were able to provide rationale for their self-care activities. The most sophisticated level of understanding was related to tooth brushing, about which 89% of the children were very clear on its purpose and immediate outcomes.

The studies of Flaherty (1986) and Logsdon (1991) also examined the child's concepts of health and health behaviors, but focused primarily on children enrolled in day care settings. Children were interviewed using a semi-structured guide in conjunction with photographs of relevant activities and behaviors appropriate to the young child's concrete thinking and dependence on perceptual cues. In both of these studies, children revealed the ability to provide relevant, descriptive, and consequential responses about health behaviors, and were cognizant of their role in health maintenance. For most children, explaining the concept of health was more

difficult than identification of specific health promoting behaviors and their benefits. As in previous studies (Rashkis, 1965; Natapoff, 1978) children demonstrated the ability to establish the relationship between health and the performance of desired activities. Eating was the primary health promotion activity cited; tooth brushing, visiting the doctor, exercise, and hygiene practices were also viewed as beneficial.

In a related study by Robinson (1987), preschool children expressed a strong belief in their ability to maintain their own health. Children's descriptions of personal activities and strategies for keeping healthy included traditional "rules" related to sleep and hygiene, as well as prescriptive behaviors focused on good nutrition. Autonomy, independence, play, and self-initiated activity were often associated with being healthy. The young child's view of health as a normal, expected state of being clearly suggests an opportunity for early intervention aimed at enhancing preschooler's knowledge about health behaviors.

As early childhood health education has only recently been emphasized, there are currently few studies to demonstrate its effectiveness. Parcel, Bruhn, and Murray (1984) developed, taught, and evaluated a preschool health education curriculum structured around age-appropriate content and activities. The purpose of this program was to enable children to assume more responsibility for their health. The Preschool Health Education Program (PHEP) curriculum was based on social learning theory and included health and safety behaviors which young children could perform on their own, and situations over which they could exert some control. The significant health and safety risks for children in this age group were addressed: nutrition, exercise, dental health, avoidance of safety hazards, care of minor illnesses, and basic first aid. Activities were also designed to encourage repetition, practice, modeling, and reinforcement through teacher and parent participation.

The PHEP curriculum was implemented with 105 four year old children in 13 child care centers. Mothers reported significant differences in several aspects of child behavior: selecting nutritious snacks, avoidance of safety hazards, and seat belt safety. The study also demonstrated

positive learning outcomes related to targeted health and safety behaviors as reported by classroom teachers. The curriculum itself was found to be effectively structured for this age group, acceptable for use by preschool staff, and easily implemented in a variety of settings. The theoretical basis and curriculum content of PHEP have been utilized in smaller studies of preschool children with beneficial results (Nalle, Johnson, & Cardenas, 1983; Pratt, Wilson, & Wright, 1987; Kingsbury & Hall, 1988). Further implementation and evaluation studies of this and other preschool health education curricula are needed to demonstrate their impact on the young child's health knowledge and behaviors.

Summary. According to Flaherty (1986), the primary goals of health education for young children are the reinforcement of positive health beliefs and behaviors and provision of information consistent with the child's cognitive level. The research suggests that the concept of illness prevention is particularly difficult for young children and health may be too abstract a concept to be assimilated until the later years of childhood. However, children are able to understand their role in prevention and health promotion at an early age. While limitations related to conceptualizations of health and illness must be considered, health education efforts which are designed to target the child's level of understanding can be an effective mechanism toward the development of appropriate health behaviors.

Given the opportunity to connect health promotion concepts to personal experience and self-care activities, children can learn basic health skills which encourage lifetime patterns (Nelson & Hendricks, 1988; Aronson, 1991). Comprehensive, sequential health education is more effective in promoting healthy lifestyle behaviors than single-focused curriculums and should include emphasis on personal health, disease prevention, injury prevention and safety, nutrition, and family and consumer health topics (Hendricks & Smith, 1995). Through the integration of health education into routine curricular activities, the early childhood learning environment provides an ideal setting for new approaches to promoting health and preventing disease (Randolph, 1994).

Health Education of Parents and Day Care Providers

Health education efforts for young children must integrate the various channels of influence on health behavior and create supportive structures to enable individuals to adapt and maintain behaviors. The degree to which health promotion and health education efforts influence behavior change in the young child is therefore determined by the reinforcement and support of his primary socializing agents (Green, Kreuter, Deeds, & Partridge,1980; Nelson and Simmons, 1983). According to Mullen (1981), the primary sources of influence for the young child are his intimate environment, including family and friends, and the intermediate environment, including school and neighborhood; in this context the child learns meanings, values, and health behavior patterns. Integration of the parents and child care providers is therefore essential to health education success in early childhood programs.

Parents. While there are few studies related to parental involvement in early childhood health education, available research reflects both the degree of parental influence on health behavior and how parents contribute to or detract from the development of positive health behaviors in children (Bruhn and Parcel, 1982). The family is the major unit through which health behavior is generated, the primary system in which health behavior is modeled and health care is carried out. The family environment has also been viewed as the primary source of values, beliefs, and attitudes concerning health and illness (Pratt, 1976; Campbell, 1978; Mullen, 1981; Natapoff, 1981). Bruhn and Parcel suggested four dimensions of family function which influence children's health behavior: modeling, interaction, reinforcement, and opportunities and constraints. These influences have been demonstrated repeatedly in research studies.

The degree of maternal influence on children's health and illness behavior was examined by Mechanic (1964), who found that a child's perceptions of his own health and need for medical attention were somewhat related to maternal patterns of care-seeking and illness behavior. Clear trends in family preventive health behaviors related to immunizations and dental care were also demonstrated by Tyroler, Johnson, and Fulton (1965). In both types of preventive activity,

maximum similarity was seen between maternal and child status, suggesting that health patterns are primarily determined by the mother.

Pratt (1973; 1976) examined the influence of a variety of family variables on health behavior. In the earlier study, it was found that parental use of a developmental (vs. disciplinary) approach to child-rearing positively influenced children's health practices, specifically in the areas of dental care, cleanliness, and elimination practices. The degree of autonomy granted to the child, as well as the use of rewards to reinforce behavior were consistently related to children's positive health habits. The 1976 study had similar findings; fostering autonomy and individuality in family interaction were positively correlated with the health practices of all family members. In addition, parents' reported health training efforts were beneficial to children's health practices and the health status of the family.

Dielman et al. (1982) conducted an investigation to determine the relationship between parents' and children's health beliefs and behaviors. Numerous significant findings were reported. Parental characteristics other than health beliefs influenced children's health behaviors, but not their health beliefs. Parental age and education were found to be significant predictors of child health behaviors, health concerns, and perceptions of susceptibility to illness. Parental health behaviors were the main predictors of children's health behaviors, but not of children's health beliefs.

The most relevant research on children's health behaviors and parental influence was conducted by and Parcel (1982b) to gather baseline data before implementing a preschool health education project. Mothers of 202 children between the ages of two and four were interviewed regarding children's health and safety practices in their own home. For seven of the eleven behavioral categories, less than half the children practiced on their own; forty percent of the mothers reported that health behaviors such as brushing teeth, safety, nutrition, rest, and exercise were never taught in the home. No significant differences were seen in health and safety behaviors in relation to the child's age. Also, there was little evidence of the effects of maternal

modeling and reinforcement on children's health behavior even though mothers reported a high level of positive health behaviors.

The concept of "parent agency" in relation to children's health behavior was explored by Eichelberger, Kaufman, Rundahl, and Schwartz (1980), who noted that parents assume responsibility for health maintenance of children until the time that children are capable of self-responsibility. "Self-agency" increases over time as developmental tasks require the child to initiate and practice self-care activities. Lasky & Eichelberger (1985) further note that increased responsibility assumes the child is knowledgeable about behaviors needed to achieve health. In their study, decision-making and self-care were developmentally progressive. Preschool children demonstrated greater levels of independent self-initiated health activity in those areas which were most encouraged by parents, suggesting that parental communication and reinforcement are associated with self-care and health behavior.

The potential influence of parental role modeling and reinforcement must be recognized in health education efforts for young children. Interventions designed to promote the health of children will impact on the family; those which focus on improving parental behaviors will impact on the child (Bruhn & Parcel, 1982). Parents' health education needs must be addressed in order to facilitate this interactive process. Russell and Champion (1996) suggest that increasing parental knowledge related to health and safety, and providing access to preventive health information as opportunities to influence parental behavior which directly impacts on child health outcomes. Parent education in child care settings also promotes the health and well being of children by enhancing parents' capacity to respond appropriately to their children, promoting informed decision-making, and creating an optimal environment for their children (Yogman, 1978; Galinsky & Weissbourd, 1992).

In addition to interventions which focus specifically on the interaction between child and parent behaviors, health education should address specific parental concerns related to growth and development, infectious disease, nutrition, safety, and recognition and management of

childhood illness (Crowley, 1990; Aronson, 1991; Hofer, 1992).Through participation in activities which ensure children's health and safety, parents also acquire skills as role models, advocates, and health teachers for their family (Randolph, 1994).This is particularly important in relation to parental decision making in regard to the quality of care and health and safety issues in the day care environment. Child care choices are frequently based on cost, availability, the need to work, and convenience of location. Studies have shown that parents often lack the knowledge and objectivity to evaluate day care quality, tending to overlook significant health risks and safety hazards (Rassin, Beach, McCormick, Neibuhr, & Weller, 1991; Calder, 1994; Aronson, 1994). Increasing parental awareness of the influence of day care and the associated health and safety risks would promote more participation in health education endeavors and advocacy for health issues in day care centers (Randolph, 1994).

Care givers. While there have been few definitive studies of the impact of care givers on health outcomes in child day care, their health education needs have received greater emphasis in the literature than either children or parents. Because providers control the health and safety of the environment, untrained or poorly informed care givers represent a serious risk factor (Calder, 1994). Indeed, provider health and safety practices have been implicated as a significant contributing factor in the incidence of infectious disease and injury in the day care environment (Haskins & Kotch, 1986; Kotch & Bryant, 1990; Thacker et al., 1992). Yet day care providers rarely receive sufficient training to protect their own health or to ensure the healthy and safety of children for whom they provide care; many lack definitive guidelines or resources related to disease and injury prevention (Hofer, 1992; Peterson-Sweeney & Stevens, 1992; Daniel, 1993).

These issues have been extensively explored in relation to their effects on child health and safety, but the health risks associated with child day care workers have received little attention. While a complete picture of the occupational and safety risks is unavailable, several major areas of concern have been identified: infectious disease transmission, back injuries occupational stress, and inadequate training and/or facilities. Repeated exposure to illness, lack of

supportive policies for staff health, inadequate exclusion policies and practices, and high staff turnover represent additional conditions which influence health and safety in this setting (Aronson, 1991; Calder, 1994; Swanson et al., 1994).

Calder (1994) suggests that because risk factors for children and care givers are enmeshed, there is a significant need for health education interventions to increase awareness of risk factors and improve the health and safety of children and day care workers. Major areas for health education identified in the literature include: 1) transmission and control of infectious disease; 2) safety and injury prevention; 3) recognition and management of childhood illness; 4) first aid and cardiopulmonary resuscitation; 5) growth and development; 6) nutrition; and 7) routine health care needs and resources. In addition, health education intervention should incorporate the personal health and safety concerns of the Care givers (Aronson, 1991; Hofer, 1992; Daniel, 1993; Taras et al., 1994).

Several studies related to health education of care givers suggest its beneficial impact. Aronson and Aiken (1980) examined the impact of a 72 hour training program on health advocacy activities among child care staff. Pre-training evaluation included compliance with health and safety aspects of child care programs, health knowledge of providers, and roles related to health advocacy. Post-training results revealed significant gains in compliance with standards and marked changes in the nature and amount of care giver involvement in health and safety activities. Soto et al. (1994) reported that personnel exposed to hand washing training demonstrated continuous improvements in technique and duration; this also proved to lower the incidence of diarrhea in the day care center.

In 1989, a comprehensive training program which included infection control, environmental safety, and educational resource material was presented to child care providers. Post-training follow-up revealed significant reduction in respiratory illness rates as well as improvements in staff knowledge and compliance (Gillis, Holaday, Lewis, & Pantell, 1989). Peterson-Sweeney and Stevens (1992) developed and implemented the *Childhealth Education*

Program, a comprehensive overview of child health issues. Participants' self-reports indicated that this program was well received and had beneficial impact both on care giver knowledge and practice.

There is growing recognition of the importance of day care staff as direct providers of care, role models, health educators, and advocates for health and safety (Aronson, 1991; Hofer, 1992). Evidence of the impact of staff training on program compliance with health standards and care giver health practices, supports the need for health education to create a more conducive and supportive day care environment (Randolph, 1994).

Research Related in Content and Methodology

Health education in child day care is a relatively recent endeavor. There are consequently few studies from which to draw methodological comparisons. The studies described in this section represent recent efforts to identify the health education needs of the three target groups in child care settings--children, care providers, and parents.

Health Education Needs Assessment

Child Care Staff. While there is growing evidence of the association between provider behavior and health and safety outcomes in child care, there is little available data on provider knowledge, health training, and health education needs. Many states mandate preventive child health training or annual in-services, but required content and core skills for out-of-home care providers vary greatly, and in some states, these provisions are not a licensing requirement.

In 1989, a study was conducted to determine the health practices of day care providers and to assess health training and information needs (Chang, Hill-Scott, and Kassim-Lakka, 1989). A mail survey was distributed to 85 day care centers and 126 family day care homes. The questionnaire requested information related to: 1) characteristics of the health program; 2) provider comfort with management of child health conditions; 3) illness exclusion policies; 4) the need for health professional consultation; and 5) provider interest in health training. Chi-square of provider responses was performed to assess significant differences between providers in day

care centers and family day care homes. Results showed that child care providers in both settings had significant health training needs to meet minimal licensing requirements. Family day care homes had greater needs than centers, but both had deficiencies in relation to annual health records, first aid training for staff, and basic health practices.

Generally, provider interest in child health workshops was greatest in the areas of first aid, management of emergencies, and dealing with behavior problems. Less than 50% of providers were interested in nutrition/diet, health education, health policies, or caring for ill children. For both types of providers, less education was associated with less comfort in management of medical conditions. Ironically, provider interest was lowest in the two areas in which they expressed the most discomfort--care of children with chronic illness or physical handicaps.

Lack of education among providers was associated with less interest in health training, suggesting an inability to accurately assess their own learning needs. Also, while many health training needs were evident, provider interest was not necessarily related to perceived lack of knowledge or the actual needs of children in the center. Two important implications for health education were identified based on these findings. Because providers are unlikely to participate in workshops of low interest, they must be actively involved in identification of their own training needs. Also, the lack of interest in the areas of primary prevention and care of handicapped or chronically ill children suggests the possible need for a mandatory health training component for providers as a condition of day care licensure.

Support for mandatory training to assure minimum preventive health skills of child care providers was evident in the 1991 study of Bassoff and Willis. The purpose of this study, initiated by the California legislature and administered by the State Department of Education, was to test the feasibility of mandating statewide health training for all child care providers. One aspect of the study was to determine staff members' concerns, needs, and future interests regarding child health. Survey methodology was used to obtain data from a 10% random sample of child day care centers and a 25% random sample of family day care homes. A total of 995 questionnaires were

distributed to day care centers; 338 were returned, for a 34% response rate. Family day care homes received a total of 2300 questionnaires of which 645 (28%) were returned. Providers' health knowledge was also assessed: the 35-item questionnaire contained 30 multiple choice questions related to child health and safety, and 5 open-ended questions about the day care setting and child health training needs.

In the areas of health training such as CPR and first aid, infectious disease control, food handling, and sanitation, day care centers reported greater numbers of trained staff--86%, as compared with 40% in family day care homes. Providers in both settings were able to answer correctly only 30% or fewer of the questions related to child health and safety, with limited knowledge in the areas of immunizations, care of a child with seizures, health risks associated with infant care, medication administration, and the needs of handicapped children. Access to a health consultant was available to only 55 percent of centers and 40 percent of family day care homes. Providers in this study identified a strong interest in more health training; the five primary areas of interest were: CPR, first aid, infectious disease prevention, nutrition, and overall health and safety.

Children, Parents, and Staff. Several important descriptive studies focused on assessment of health education needs of children, parents, and staff in the child day care setting are presented in the literature. Nelson and Hendricks (1988) surveyed the directors of 100 licensed child day care centers in Alabama. A licensed center was defined as one which provided care to children for compensation on a regular basis in lieu of care by parent or relatives. A statewide random sample of 194 rural and urban centers were selected, based on an expected return rate of 50%. The mail survey protocol consisted of three separate mailings: initial survey with cover letter, a reminder postcard seven days later, and mailing of a second survey instrument to non-respondents ten days after the postcard. A 58% return rate of 112 surveys was reported.

The survey instrument consisted of 17 fixed and open-ended items developed by a panel of health education and early childhood professionals. The questionnaire addressed 1) program

director's perceived benefits and barriers to health education, 2) existing planned or incidental child care health instructional activities, 3) perceived health instructional needs, 4) administrative features which facilitate or impede health instruction in the program. Data were presented as percentages of responses in each category; no statistical analysis was performed.

Characteristics of each study group were similar in terms of age distribution and daily enrollment. The most frequently reported health problems were colds, flu, accidents, hygiene practices, and nutrition. The majority of programs studied offered in-service training opportunities for staff, however specifics of the training program were not described. The most important barriers to health education for both rural and urban centers were lack of educational resources, time, and money. More than 95% of the directors perceived health education as an important program component, and the majority believed their program allocated an appropriate amount of time to health instruction. Directors did indicate an interest in additional educational materials as well as in-service training. Perceived ability to provide health instruction was rated highest in the pedestrian safety, dental health, nutrition, and routine health care; health instruction related to illness, hygiene, alcohol and drugs were less well perceived.

Health education needs were identified in the areas of first aid, poisonings, falls, fire safety, nutrition, exercise and hygiene. Topic areas of health education routinely covered varied somewhat; hygiene, nutrition, health care, and exercise were more frequent in urban centers; rest/sleep. fire safety, dental health, and nutrition were more frequently cited in the rural programs. The results demonstrated that despite identified barriers, health instruction was perceived as an important aspect of the child care program. Health instruction was consistent with identified health problems in these centers and covered a range of important topics. From the perspective of the directors in this study, health instruction in child day care was considered important, effective, and in need of further technical support. The following recommendations were made for more effective adoption and diffusion of health education in child care settings: 1) increased professional

leadership; 2) public information and education; 3) technical assistance with staff training; and 4) research, evaluation, and surveillance of programs.

Crowley (1990) presented a descriptive study which examined the types of health services provided by 49 child day care programs. A self-administered questionnaire consisting of 343 items was mailed to directors of 93 sampled programs; a 54% return rate was obtained. The researcher-developed instrument was validated by expert review. Reliability was not statistically established, but the instrument was piloted by directors of day care programs outside the sample area. The content areas of the questionnaire included: center characteristics, ages enrolled, health services and education for children, health information for parents, and health-related training for staff.

The survey instrument listed 13 specific topic areas of health education for children, including nutrition, safety, hygiene, prevention of illness, and dental health. More than one-half of the directors (52%) reported that the majority of these topics were included; hygiene, feelings, safety and nutrition were the most frequently cited. Prevention of burns and poisonings were addressed less frequently, even though accidents are the leading cause of death in children.

Health education provided for parents (either workshops or written information) varied according to topic area. Information was provided most frequently in the areas of growth and development (65%), safety and accident prevention (93%), behavior/discipline (92%) and prevention, recognition, and management of illness (80%). Workshops and/or continuing education programs for staff were assessed in four categories: health and safety, child growth and development, illness management, and parental concerns. Most centers offered staff training on safety and accident prevention (87%), first aid (89%), and disease prevention practices (85%). More than one-half of the programs offered growth and development training for staff; cardiopulmonary resuscitation was offered by 63% of the programs.

Important health needs identified by directors in this survey were infectious disease recognition, management, and exclusion policies (31%), staff training (16%), and health education

for children (8%). In the majority of health education areas for parents, staff, and children, directors expressed interest in providing more training and instructional opportunities. The findings of this study were similar to those of Nelson and Hendricks (1988), in that many programs appear to provide some aspects of health education to children, parents, staff or all three groups. This conclusion is, however, based on self-reports of program directors, and cannot be validated in terms of extent or quality of the programs. In addition, neither study surveyed parents or staff related to their health education needs.

O'Mara and Chambers (1992) conducted a survey of child day care operators in Ontario. A self-administered questionnaire was mailed to the operators of 98 centers in a specified region to determine: common child health problems, perceived health information needs, education levels and experience of operators, operator's continuing education, and health department visits to the center. A high response rate of 90% was obtained through three follow-up efforts. The operators reported colds, diarrhea and vomiting, flu, and communicable diseases as the most frequent health problems. Among the categories of perceived need for health information, 76% identified infectious disease recognition and management, and 53% identified child abuse. Less frequently mentioned were parent-child relationships (46%), dental health (33%), safety (28%), nutrition (23%) and growth and development (21%). The questionnaire used in this study was reported as having good content validity; also, review of the responses indicated a high level of internal consistency among individual respondents. However, the sample was small, and again did not include parent or staff information related to health education needs.

Perhaps the most ambitious and comprehensive study of health education in child care was reported by the Alabama Department of Public Health (1992). The goals of the Alabama Project were: 1) to develop and implement a comprehensive health and safety curriculum for preschool children, parents, and care givers; 2) show increased parent and care giver knowledge regarding health and safety, and changed behavior as a result of this knowledge, and 3) demonstrate improved health status of children as indicated by immunization status, dental health,

nutrition, communicable disease, and injuries. This study was planned and implemented over a period of three years. In Phase I, the health status of children was evaluated by gathering baseline data on physical, dental, and developmental areas; child health status was monitored over the study period through periodic examinations and parent and care giver assessments. During Phases II and III, the health education curricula were developed and presented to children, parents, and care givers. Parent and care giver knowledge, skills, and practices were assessed through pre and post tests.

As a baseline for development of the health education program, surveys were conducted with the directors, day care staff, and parents participating in 138 licensed day care centers. An overall response rate of 48% was obtained. Directors' surveys indicated five major areas of health concern, including colds and coughs, illness recognition, accidents, ear infections, and diarrhea. Most centers did not have a definitive source for health and safety education; many relied on a child's physician or the county health department for information. Over 80% of the directors reported either orientation or periodic in-service in health and safety for employees. The most preferred methods of health and safety education were professional talks (54%), pamphlets (46.3%), and newsletters (37.7%).

The child care staff survey revealed that the program director was their primary source of information on health and safety. Over 96% indicated an interest in periodic health and safety programs within the center; areas of most interest were spread of illness, CPR, first aid, recognition of illness, and child growth and development. While nearly 70% felt that parents should seek health and developmental information from child care professionals, the majority reported that this occurred only occasionally or rarely. Parents ranked CPR, first aid, spread of illness, nutrition, and growth and development as their top areas of health education interest, and indicated a preference for printed materials and videos to receive this information.

Another important aspect of this study was implementation and evaluation of health education for children, parents, and providers. The child care providers workshop covered eight

health and safety topics. Evaluation of pre and post test results revealed an impressive and statistically significant increase in health and safety knowledge both in specific item areas as well as overall performance. Mini-posters and newsletters which were developed for parents were also found to be an effective health education strategy in the pilot centers. *Here We Go...Watch Me Grow,* a comprehensive preschool health and safety curriculum was implemented in the pilot centers; while evaluation data is not yet available, the curriculum has been well received by child care providers.

The final aspect of the study, improved health status of children, was demonstrated in the decreased incidence of dental disease, greater numbers of children within normal height and weight limits, and improved child immunization rates from Year I to Year III. Centers also showed a 39% decrease in child absences due to colds, fevers, and viruses, as well as an overall 16% decrease in absences during months which previously had much higher rates. Based on the reported data, this comprehensive health education initiative has had significant benefits for children, parents, and providers in the Alabama day care community.

Summary

Implications for health education can be drawn from what is reported in the literature and what is omitted. Of major importance and concern is the definitive evidence related to the health and safety risks associated with the child day care environment, particularly infectious disease and injury. While these consequences are largely preventable through primary intervention and health education and training of staff, parents, and children (Novello, 1994; Goodman et al., 1994), there is currently a lack of health promotion and health education efforts to address these concerns.

A second conclusion which can be drawn from the literature is that many of the contributing factors related to disease and injury in child care settings, such as staffing, infection control practices, and environmental safety are addressed in regulations and standards designed

to ensure the health and safety of children and staff (AAP, 1992; Aronson, 1994; Giebink, Chang, Kotch, Murray, & Gonzalez, 1994). At this time, there are significant deficiencies in the regulation and enforcement of health and safety standards across states, and even within communities. State regulations generally establish only a minimal standard of legal operation, which does little to protect the health and well being of children and providers, let alone assure quality of care (Hayes et al.,1990; Howes & Droege, 1994). In the absence of effective regulatory processes, the need for health education interventions focused on prevention of illness and injury is evident.

Until recently, no set of health standards applicable to child care programs on a national level existed. In 1992, the American Public Health Association and the American Academy of Pediatrics jointly developed *National Health and Safety Guidelines for Child Care Programs* to provide consensus on approaches to decreasing injury and promoting prevention among children and providers in group care settings. These standards clearly delineate health education objectives for planning, implementation, and evaluation for this target population. Specific areas include staff health training, parent education, health education of young children, and the role of the health consultant. While these standards have not been widely implemented, they provide a necessary framework for assessment of health education needs and practices in child day care.

Effective health education intervention requires that programs be based on assessment of risk factors, identification of needs, involvement of the target population, and designed to fit the context of the setting (Green & Kreuter, 1991). Needs assessment also provides objective data to define significant health issues for the target population, set priorities for program implementation, and establish a baseline for program evaluation (Grunbaum, Gingiss, Orpinas, Batey, & Parcel, 1995). At this time, a comprehensive assessment of the health education needs of children, parents, and staff in the day care setting is a priority.

CHAPTER III

PROCEDURE OF THE STUDY

The purpose of this study was to conduct a health education needs assessment in child day care centers in East Tennessee. Information related to health and safety concerns, current health education practices, and the health education needs of children, parents, and staff was gathered from the directors of child care facilities. Instrument development, sampling methodology, and data analysis procedures used for this study are described in this section.

Instrumentation

Review of Existing Instruments

An extensive review of published research was conducted to identify an established instrument appropriate to the purpose of this study. The authors of two studies describing similar methodology were contacted with a request to review these instruments. The questionnaire developed by Crowley (1990) was very lengthy and included a focus on health services as well as health education. O'Mara and Chambers (1992) utilized an open-ended format which appeared more usable, but did not include an assessment of health education needs for children, parents, and staff. Reliability was not established for these instruments. While both studies surveyed child care directors, neither instrument was judged to be suitable for adaptation to this study population.

The availability of an established instrument was also explored with Dr. Charlotte Hendricks, an expert in early childhood health education. As no appropriate instrument for data collection was found, the construction of a new instrument was a prerequisite to conducting the health education needs assessment.

Development of the Child Care Health Education Assessment (CCHEA)

For the purpose of needs assessment with the child day care population, an instrument was need to gather information related to: 1) health and safety concerns of child care directors; 2) current health education practices, and 3) health education needs for each target

group in the child care setting--children, parents, and staff. These research questions provided the framework for instrument development.

Identification of health and safety concerns. An extensive review of the literature was conducted to identify the major health and safety issues affecting children, parents, and child care providers. The primary source of this information was pediatric health literature related to child care and research concerning the health and safety consequences of out-of-home care arrangements. From the sources reviewed, a list of health and safety issues was compiled to serve as a guideline for item development in this section of the instrument. The list was prioritized according to more serious (infectious disease and injury) and less serious (head lice) health and safety implications for children, staff/providers, and parents. Identification of directors' priority concerns from previous studies were also incorporated in the proposed content for these items.

Defining health education content. A preliminary draft of essential health education interventions also emerged from the literature. Additional information was obtained from previous studies of preschool health education and the health education needs of parents and staff in child care settings. The health education needs identified among these groups in former studies were fairly consistent, and therefore served as a guideline for inclusion of specific content areas. A sampling of appropriate content for each target group was developed from the domain of essential preventive measures and health education topics outlined in these sources.

This information was then collapsed with previously identified health and safety concerns for a comprehensive health education focus for children, parents, and staff. For conceptual consistency, an effort was made to link topics across all three target groups. For example, the topic of infectious disease prevention for providers and parents had an analogous topic, hand washing and personal hygiene for children. This health education content was likewise linked to a priority concern in the day care setting.

Review of existing standards. As a preliminary estimate of content validity, the items constructed for each component of the health education assessment were evaluated against

existing requirements, standards, and guidelines related to health education activities in early childhood programs. On the local level, child care agencies licensed by the Tennessee Department of Human Services have very minimal requirements for provider training, and few specifications of content related to health and safety. Child abuse prevention is a required topic for parents and staff; personal safety and child abuse are specified for children.

National health and safety standards for child day care settings established by the American Public Health Association and the American Academy of Pediatrics (1992), and the National Association for the Education of Young Children (Kendrick et al., 1995) contain specific recommendations for health education of children, parents, and staff. These standards of performance were used as criteria for inclusion of health education activities in the CCHEA and to provide a basis for evaluation of content areas and assessment of current health education status of child care centers.

Drafting the Instrument

The Child Care Health Education Assessment (CCHEA) which was developed requested information related to: a) center characteristics; b) most frequently encountered health and safety problems in the center; c) current practices related to health education of staff, parents, and children; d) director's perception of the need for health education topics for each target group, and e) health education resources needed in each center. The initial draft of the questionnaire contained a total of 18 items. The first section requested information related to center characteristics believed to influence health and safety outcomes. Specific items included number of children and age levels enrolled, number of staff and their educational qualifications, and staff-to-child ratios. In the next section, directors were asked to rate health and safety problems on a scale from 1 (LEAST OFTEN) to 4 (MOST OFTEN), according to the frequency in their center.

The main section of the questionnaire was divided into three areas which corresponded to health education practices and needs identification for each target group--staff, children, and parents. From a list of recommended health education topics, directors were asked to indicate if

this topic was currently included in their program and to rank the importance of each topic according to the needs of each target group. The importance of each topic was again ranked from 1(LEAST IMPORTANT) to 4 (MOST IMPORTANT). In the area of staff health education, the hours of training received per staff member in the past year was also requested.

The final section of the survey contained questions related to health education resources currently being used including health professionals, health and safety standards, books, and areas in which health educators could provide program assistance, and directors' perceptions of factors which may help or hinder health education efforts in their child care center. A simple checklist of items was used to obtain information in each of these categories. Two open-ended response items were included for a description of current health education requirements in each center and additional comments or suggestions of the director related to health education.

The first draft of the instrument was reviewed by an expert in early childhood health education, two child care professionals, three nursing professionals, and a pediatric health education specialist (Appendix B). Minor revisions were suggested in directions for item completion, wording of stems for some questions, and the sequencing of health education topic areas for each group. In the opinion of the reviewers, survey content was valid, comprehensive, and in an appropriate format. The length of the questionnaire, however, was problematic. Subsequently, items were collapsed in format and certain demographic items were eliminated to simplify responses.

Expert Review

A second draft of the Child Care Health Education Assessment was then developed for review by a national panel of experts recommended by Dr. Charlotte Hendricks. The panel consisted of professionals from the fields of health education, early childhood education, pediatric medicine, nursing, and school health. These individuals were contacted by phone to request their assistance in the instrument review process. Seven experts who agreed to participate were sent a cover letter explaining the purpose of the study, a copy of the revised CCHEA and an Item Review

form (Appendix C). Based on their knowledge and experience, panel members were asked to rate each item for its appropriateness for inclusion in the instrument and to make suggestions and recommendations for revisions in format and content.

Experts responded in writing or by phone. Only three panel members completed the separate Item Review, so quantitative item analysis was not possible. However, overall evaluations of the expert panel indicated that the CCHEA was comprehensive, valid and useful for the purpose of the study. Several specific recommendations for item revision were made related to clarity and wording of items. The item related to health and safety problems was rephrased, as panel members felt this suggested an event that *always* happened as opposed to an area of concern to the director. In items requiring a rating of the importance of health education topics, the phrase "according to the needs of children, parents, staff in your program" was eliminated to avoid the implication that the need was only there in specific centers, as opposed to a universal need for health education among these groups. The addition of other possible concern areas such as chronic health problems, and additional health education topics of dental health and substance abuse were suggested. These changes, as well as recommendations for minor revisions in phrasing of stems and format of responses were also incorporated prior to pretesting of the instrument.

Pre-testing of the Child Care Health Education Assessment

Prior to implementation of the study, the revised CCHEA was pretested by directors of child care centers in Knox County which were representative of the range of programs in the total sample. The pretest group included for-profit and non-profit agencies consisting of university, hospital, and church based centers, Head Start programs, chain and independently owned centers. Directors of fifteen centers were contacted by phone with an explanation of the purpose of the study and a request for completing the instrument as well as a follow-up interview. The directors were contacted in person with a copy of the instrument and arrangements for interviews were made at this time. Thirteen directors completed the instrument and participated in the

interview. One program director received word of center closing prior to the completion of the process; one director reviewed the instrument and felt that it was not relevant to her program, so declined participation.

The pretest results and interviews were very informative. All of the directors displayed interest and enthusiasm for the topic of health education, and were cooperative and generous with feedback. There was general consensus among directors that the content of the instrument was appropriate to the population and purpose of the study. The majority of directors reported they had no difficulty understanding the items or expected response format. However, directors of larger centers, or those responsible for more than one center (as in Head Start), reported that completion time was considerably more than they had anticipated, particularly for items which required actual counts of staff education levels and training hours.

Those directors who indicated a lack of resources in their centers had difficulty completing items related to health education activities, reporting that rating the importance of specific topics was less difficult than the estimate of what was currently being done, particularly for staff and parents. Because there are few regulatory requirements for health education in Tennessee, many directors indicated that such activities for children, parents, and staff are done on an "incidental" or "as needed" basis , as opposed to being an integrated aspect of their program with content and time specifications. Many directors reported having difficulty finding time and resources for staff training, as well as poor interest and participation among parents, not an unexpected finding among day care centers.

Some directors's ratings reflected a tendency toward underestimating the importance of a health education topic for a particular group if it was not addressed within their current program. Therefore, the ordering and format of those items requiring a rating as well as a measure of current activity levels were reversed, so that rating of importance was first for all health education topics and all target groups. The directors were asked specific questions to gather information concerning the usability and clarity of the instrument. If items were not completed, the director was

asked to clarify whether the health education activity was not being done or if the item was not understood. Items which were difficult to respond to, such as "environmental safety and hygiene" were rephrased, as in "safety and hygiene of the center."

The final draft of the CCHEA instrument contained a total of 15 items. Items 1-3 requested data on center enrollment, child-to-staff ratios, staffing patterns and levels of education for child care staff. Item 4 assessed the frequency of health and safety concerns in the center, on a rating scale of 1(LEAST FREQUENT) to 4 (MOST FREQUENT). Items 5-8 required a rating of the importance of health education topics for each target group--staff, parents, and children. Each item was accompanied by a rating scale of 1(LEAST IMPORTANT) to 4 (MOST IMPORTANT) and a YES/NO response to indicate if it was currently included in the program; for staff members, this involved a report of number of hours of training per year for any particular topic. An open-ended item requested directors to identify three health education topics they were interested in for each target group in their center. Areas for health education assistance, current resources, and factors which help or hinder health education were assessed by checklist. The final two items were open-ended, asking directors to describe their current health education policies and/or requirements, and to share additional comments or concerns.

Population

The sample for this study was drawn from a list of child care agencies provided by the Department of Human Services in Nashville, Tennessee. The *County Directory of Licensed, Approved, and Registered Child Care Agencies* includes all providers in three categories--day care centers, group day care homes, and family day care homes. Child care agencies are grouped by licensing regions within the state, which includes a total of eight districts.

The East Tennessee licensing region encompasses DHS District I and District 2, including a total of 25 counties (Appendix A). Those agencies providing child care to children ages birth through five were identified by computer printout. From this primary list, all centers serving thirteen or more children and whose population included preschool children ages three to five years were

identified. The sample population was delimited to day care centers based on the total population of children enrolled in larger centers. According to the National Child Care Survey (1990), the greatest proportion of supplemental child care (approximately 28%) is provided in centers, and center care is the most frequent type of supplemental care for the preschool population. Center care is also more prominent in this region of the United States. Because centers provide care for larger numbers of children, their compliance with licensing standards and health and safety regulations is more closely monitored. Therefore, actual health practices may be more readily assessed by directors in these settings.

A total of 538 child care agencies met the criteria for inclusion in this study. Centers represented a range of program types and sponsorship: for-profit, non-profit, preschools, early education centers, church supported, hospital and university based centers, public agencies, and Head Start programs. In an effort to avoid duplication in the sample, centers listed more than once at the same address, and directors who were listed for several centers (such as Head Start programs) were included only once in the sample. Those directors who participated in the pretesting of the instrument and all their respective centers were also excluded. A total of 476 directors were identified for mail distribution of the Child Care Health Education Assessment.

Procedures

Approval for the proposed study was obtained from the Human Subjects Committee at the University of Tennessee, Knoxville, prior to the pilot study (Appendix D). A current listing of licensed child care centers in the defined geographic area was then obtained from the Department of Human Services in Nashville, Tennessee. The Child Care Health Education Assessment, accompanied by a cover letter (Appendix E) and stamped return envelope were mailed to the directors of 476 child day care centers. The cover letter described necessary credentials and affiliation and the purpose of the study. Confidentiality was assured to participants. A statement was also made indicating that the survey was in no way associated with licensing or regulatory agencies in the state, in order to alleviate undue apprehension on the part of any program director. As an incentive for participation,

the directors were offered a health education newsletter for parents and a health poster for use in their child care center.

The initial mailing of the surveys was completed during the first week of August, 1996. Directors were asked to respond no later than August 19, 1996. Six of the surveys were returned as "undeliverable" just after the first mailing. Phone contact for address verification was made, and four were remailed. Two centers could not be contacted by phone and were presumed closed or out of operation, and eliminated from the sample. A reminder postcard was mailed to non-respondents during the third week of August. Further eliminations were made on the basis of undelivered mail, phone calls reporting closings of some centers, or inability to obtain current phone listings.

As these two attempts resulted in only a 10% return rate, a final phone follow up to all non-respondents was conducted during the first week of September. Again, numerous centers were eliminated due to reported closure or lack of current of current phone listing. A total of 11 centers closed, and 12 could not be contacted during this process. Directors who were contacted were reminded of the survey and a second survey was mailed to all who requested it. A total of 110 surveys were remailed during this time. Personal contact with the directors resulted in an additional 13% return rate. From an initial mailing to 476 centers, the "purified list" of potential respondents included a total of 453 child care centers. A final response rate of 103 surveys (23%) was obtained for data analysis.

Statistical Design

To achieve the purpose of this study, the Child Care Health Education Assessment was developed, validated by expert review, and pretested with a select group of child care directors. A simple descriptive survey design was utilized to document actual health education practices and to determine health education needs in child day care settings. This type of descriptive research provides a comprehensive and valid perception of the health needs of a target group (Dignan & Carr, 1992), and is thus an appropriate method for health education needs assessment. No attempt was made to establish causal relationships between center characteristics, reported

health and safety problems, or health education practices in the day care centers. The survey questionnaire yielded nominal and ordinal data which were analyzed using the SAS statistical analysis program.

Data Analysis

Characteristics of the sample population of child day care centers are presented according to total numbers of centers responding, type of centers by profit status, and cumulative frequencies related to enrollment data and staff-to-child ratios. The educational qualifications of child care staff are reported by total percentages of all centers in the sample. Directors' ranking of health and safety concerns in their center are tabulated with cumulative frequencies and mean rating for each item. Health education practices were analyzed by group, according to topic areas included in the current program. Directors' ratings of the importance of health education topics for each group are presented with mean ratings for each item. Frequencies and percentages of health education activities for staff, parents, and children are reported. Similar tabulations are made for the directors' responses to the checklists related to health education methods, current resources, needed areas of assistance, and program factors which influence health education.

Survey data were examined to determine the most significant health education needs reported among the majority of centers. Associations between health and safety problems and current health education practices were analyzed from the perspective of health education planning and implementation, based on reported areas of deficiency and perceived importance of health education topics for each target group.

Cronbach's coefficient alpha was used to assess the internal consistency of the Child Care Health Education Assessment which was developed for this study. Alpha is reported for each major subsection of the instrument as well as the total instrument.

Summary

This chapter describes the methodology used for instrumentation and conducting a health education needs assessment in child care centers in East Tennessee. The sample included day

care directors whose programs served children in the preschool age group. Directors were asked to respond to the Child Care Health Education Assessment which was distributed by mail to 453 centers. Statistical treatment of the data was limited to descriptive measures, including percentages, frequencies, and measures of central tendency.

CHAPTER IV

RESULTS

The overall purpose of this study was to determine the current health education status of child care centers in East Tennessee and to assess the needs of these centers for health education and training of children, parents, and child care staff. To collect data, the Child Care Health Education Assessment was developed and distributed by mail to directors of 453 day care centers. Information was obtained on centers' profit status, number and ages of children enrolled, staff-to-child ratios, and staff educational preparation. The health and safety concerns of each center, health education needs and current health education activities were also assessed.

Findings related to the instrumentation of the study are presented first to provide a basis for the validity and reliability of data collection procedures. Study results concerning characteristics of the responding centers and their health education needs and practices are presented in the following manner:

1. A description of the final study population.
2. Reporting of center characteristics.
3. Reporting of health and safety concerns among the day care center directors.
4. Reporting of health education needs and current practices for child care staff, children, and parents.
5. Reporting of health education priorities and resource needs of child care programs.
6. Summary of results.

Study Instrumentation

The Child Care Health Education Assessment (CCHEA) was composed of 15 items. The four major subscales of this instrument were designed to assess the health and safety concerns and health education needs and practices within child care settings. Prior to study implementation, the CCHEA was reviewed by a national panel of experts for content validity, and pretesting of the instrument was accomplished with thirteen day care directors outside the sample population. The

results of these initial trials suggested that the CCHEA was a valid, conceptually well structured, and useful instrument for the purpose of this study.

Following completion of the study, further evaluation was done to measure internal consistency and to support the validity of data collection procedures. Cronbach's coefficient alpha, a common method for assessing homogeneity or internal consistency (Talbot, 1995), was calculated by correlating each item of the subscale with each other item. The major areas of the instrument which were evaluated included the measure of health and safety concerns and the rating scales of important health education topics for each target group. Overall Cronbach's alpha for the instrument was 0.8782. Individual subscale alphas were as follows: health and safety concerns, 0.8375; staff health education, 0.8082; health education for children, 0.8136; and health education for parents, 0.8513.

Sample Population

A total of 103 child day care directors, representing 37% for-profit centers and 63% non-profit child care programs responded to the survey. As presented in Figure 1, the majority of the responding centers were either church or religious affiliated non-profit centers, or independent, for-profit programs.

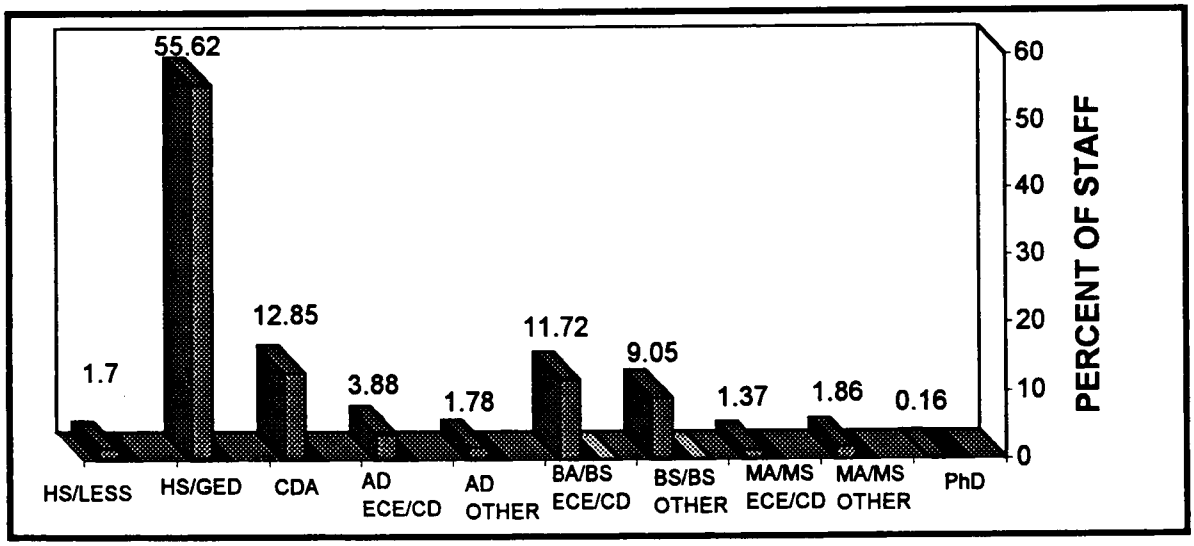


FIGURE 2. EDUCATIONAL STATUS OF CHILD CARE STAFF

The centers represented a total enrollment of 5864 children, including 425 infants, 1483 toddlers, and 4040 preschoolers. In addition to total number of children enrolled in each age group, directors reported the number of classes per group and the number of staff per class; the staff-to-child ratio was then calculated from these measures. Directors reported staff-to-child-ratios ranging from 1:1 to 1:7 for infants (mean=1:4), 1:1 to 1:10 for toddlers (mean=1:5), and from 1:1.5 to 1:15 for preschool aged children (mean = 1:8).

A total of 1237 staff members were employed in these centers, over half of which were full time. As shown in Figure 2, the education levels of teachers and administrators ranged from less than high school (1.7%) to Ph.D. (.16%). Over 55% of the staff members were educated at the high school level or less. Educational preparation of child care providers varied considerably according to type of center and profit status. The lowest overall level of education was reported in independent, for-profit centers, in which over 71% of the staff had no more than a high school education. By comparison, church-affiliated, non-profit child care centers had the highest numbers of staff members at both extremes of educational preparation: 59% of staff had a high school education or less and nearly 36% an associate's degree or higher level of preparation.

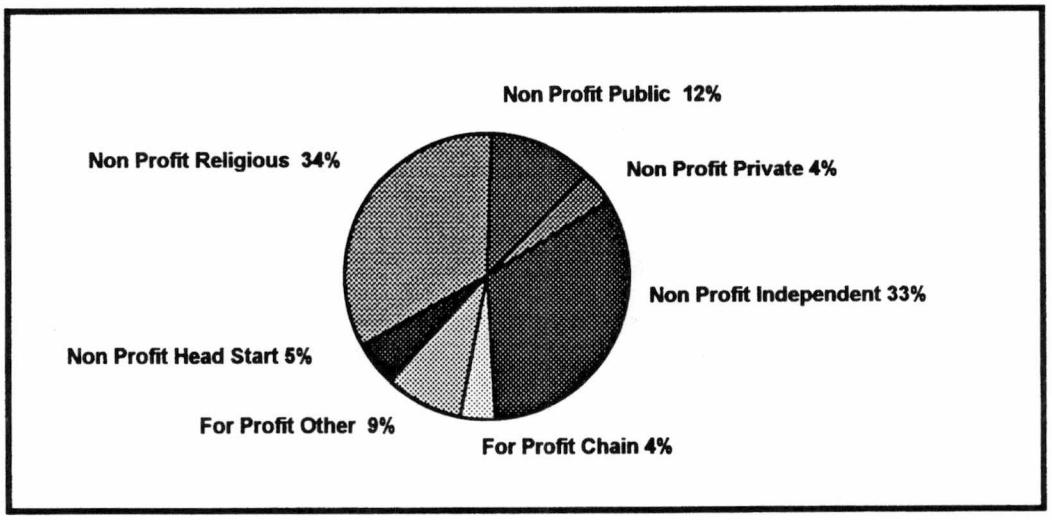


FIGURE 1. PROFIT STATUS OF CHILD CARE CENTERS

Health and Safety Concerns

Directors' ratings of the frequency of health and safety concerns in their child care center are displayed in Table 1. The overall frequency ratings in all twelve areas of health and safety were relatively low; on a scale from 1 (Least Frequent) to 4 (Most Frequent), the greatest majority of the responses fell into categories 1 and 2. No area of concern was identified as most frequent by more than 30% of the centers. Ratings ranged from a high mean score of 2.82 for colds and flu to a low of 1.38 for child abuse. In addition to colds and flu, the top areas of health and safety concern for these directors were related to behavior and discipline, diarrhea and vomiting, respiratory illness, and chronic health problems. Over 50% of the directors reported child abuse, head lice, center safety and hygiene, nutrition, and accidents and injuries as areas of least concern in their center.

TABLE 1

Health & Safety Concerns Of Child Care Directors

Type of Concern	n	M	SD
1. Colds & flu	99	2.82	0.97
2. Behavior & discipline	99	2.26	1.04
3. Diarrhea & vomiting	100	2.15	0.97
4. Respiratory	98	2.01	0.94
5. Chronic health problems	99	1.95	0.91
6. Safety & hygiene center	96	1.72	1.08
7. Nutrition	99	1.71	1.04
8. Accidents & injuries	100	1.64	0.89
9. Staff health	97	1.63	0.88
10. Head lice	97	1.50	0.83
11. Child abuse	99	1.38	0.90

Staff Health Education and Training

Directors' ratings of the importance of staff health education and training in 14 areas were assessed on a scale from 1 (Least Important) to 4 (Most Important). In comparison with health and safety concerns, higher mean scores for staff health education were observed across all ratings, ranging from a low of 2.34 for substance abuse prevention to a high of 3.98 for

cardiopulmonary resuscitation. Areas of greatest importance for staff health education and training for the majority of centers were: CPR (98%); first aid (97%); child safety and injury prevention (79%); child abuse and neglect (71%); and infectious disease (64%). Few directors rated any topic as least important, with the exception of substance abuse prevention, in which 38% of the responses were in this category.

For each staff health education topic, directors were also asked to report the number of staff trained and the hours of training per staff member in the previous year. A high percentage of center directors failed to report data in these categories. Of the directors who responded, 74% reported staff trained in CPR, 73% in first aid, 62% in child abuse and neglect, and 59% in child safety and injury prevention. Staff training in all other areas was reported by less than 50% of the centers, with substance abuse prevention training being reported in only 22% of all centers.

Similarly, data related to the number of hours of training staff members received was not provided by the majority of directors. Hours of staff training in only four areas--CPR, first aid, and child safety-- were reported by at least one-half of all centers. Hours of training reported varied widely according to topic, with the least amount of training in the areas of medication administration and substance abuse prevention. As summary of staff health education and training is presented in Table 2.

Health Education for Children

Health education activities were reported as a planned, integrated component of the early childhood curriculum by nearly 93% of all day care directors. The importance of twelve health education topics for children was rated on a scale from 1 (Least Important) to 4 (Most Important). Although the areas for child health education varied slightly, the range of mean scores was similar to staff topics. For children, hand washing and personal hygiene obtained the highest mean rating (3.92), and good drugs/bad drugs had the lowest mean (2.85). As seen in Table 3, the majority of children's topics received ratings of high importance, with priorities in five areas: hand washing and personal hygiene (93%); self esteem and self-concept (90%); personal safety (83%); safe

TABLE 2

Health Education Topics for Staff

Topic	n	M	SD
1. CPR	98	3.98	0.24
2. First aid	99	3.97	0.17
3. Safety/injury prevention	100	3.75	0.52
4. Child abuse/neglect	98	3.58	0.74
5. Infectious disease	100	3.55	0.67
6. Growth & development	96	3.51	0.74
7. Childhood illness	98	3.14	0.93
8. Administration of medicines	98	3.03	1.15
9. Educating parents: health & safety	98	2.88	.88
10. Staff personal health	96	2.86	1.00
11. Nutrition	96	2.80	1.02
12. Community resources	93	2.72	0.94
13. Chronic health problems	98	2.64	1.03
14. Substance abuse	97	2.34	1.22

touch (83%); and the five senses (64%). Preventive health activities related to nutrition, dental health, exercise and substance abuse received slightly lower ratings. Over 85% of the directors reported that health education in eleven of the twelve topic areas was included in their current curriculum; the only exception was good and bad drugs, which was reported by only 50% of the centers.

Health Education for Parents

The importance of health education topics for parents was rated in the same manner as children and staff. The topic with the highest mean rating for parents was behavior and discipline (3.75), with substance abuse prevention again receiving the lowest mean score (2.75). In addition to behavior and discipline, directors' ratings of most important topics included: sick child care and exclusion policies (73%); child growth and development (64%); infectious disease (60%); safety and accident prevention (58%); and childhood illness (54%). Nearly 50% of child care centers reported that information in each topic area was provided to parents; the most frequently cited

TABLE 3

Health Education Topics for Children

Topics	n	M	SD
1. Handwashing/personal hygiene	99	3.92	0.25
2. Self-esteem/self-concept	99	3.88	0.34
3. Safety	99	3.79	0.47
4. Safe touch	98	3.79	0.47
5. Five senses	97	3.57	0.61
6. Body parts	98	3.51	0.67
7. What is a family?	98	3.50	0.75
8. Healthy food choice	99	3.49	0.67
8. Sick/hurt (self care)	98	3.41	0.78
9. Dental health	97	3.37	0.73
10. Keeping fit/exercise	99	3.35	0.73
11. Good/bad drugs	90	2.85	1.13

topics for parent health education were sick child care and exclusion policies and behavior and discipline. Child health and fitness information was provided least frequently to parents. A summary of parent health education is presented in Table 4.

TABLE 4

Health Education Topics for Parents

Topics	n	M	SD
1. Behavior & discipline	99	3.75	0.50
2. Sick child/exclusion policy	99	3.65	0.64
3. Child growth & development	97	3.59	0.60
4. Infectious disease	100	3.48	0.73
5. Safety & accident prevention	96	3.41	0.80
6. Childhood illness	98	3.38	0.79
7. Nutrition	98	3.31	0.73
8. Child health/fitness	97	3.22	0.79
9. Community resources	91	3.00	0.91
10. Substance abuse	91	2.75	1.14

Health Education Priorities and Resource Needs

Directors were asked to identify three topics in which they were most interested in providing more health education for staff, children, and parents. The results of this assessment

are presented in Table 5, which shows consistency in topics of interest, particularly between staff and parents. Child care centers' needs for health education assistance were in three priority areas: promoting staff and parent participation, selecting and utilizing materials, and identification of professional and community resources. Only one-half of the day care directors identified a regular source of health and safety information, and for the majority of centers, the Public Health Department was the primary resource. A health educator was cited as a professional resource or consultant for only twelve child care programs.

TABLE 5

Priority Health Education Topics

Staff	Children	Parents
1. Behavior & discipline	1. Safety	1. Behavior & discipline
2. Growth & Development	2. Nutrition	2. Growth & Development
3. Infectious disease	3. Fitness	3. Infectious disease
4. Safety	4. Self-esteem	4. Nutrition
5. Child illness	5. Infectious disease	5. Child illness
6. Nutrition	6. Behavior & discipline	6. Safety

As has been found in previous studies, time and financial constraints were identified as barriers to health education by the majority of directors in this study. When directors were asked for information regarding the health education requirements, policies, and recommendations for their day care center, a wide range of responses were obtained. Many directors provided information related to exclusion policies, health records and/or immunization requirements, and health screening of children and staff. Approximately one-half of the center directors described policies or mandates related to health education activities for the three target groups, primarily focused on safety topics for both providers and children.

Summary

The findings of this study were based on day care directors' assessments of health and safety concerns and the current health education needs and practices in their child care centers.

The CCHEA developed for this study was found to be a valid and reliable instrument for health education needs assessment with this population.

Although health and safety concerns were reported infrequently, infectious disease, behavior and discipline, and chronic health problems were identified as the primary concerns in most centers. Health education for staff, children, and parents was rated as very important by the majority of directors, and a significant number of centers were providing health education for each target group. The highest level of health education activity was focused on children, with 93% of centers reporting this as an integrated component of their early childhood curriculum. Directors identified a number of priority health education topics for their center, including: behavior and discipline, growth and development, and infectious disease for both parents and staff; safety, fitness and exercise, and self esteem for children. Directors also indicated the need for professional support and additional resources to enhance their current health education efforts.

CHAPTER V

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to conduct an assessment of health and safety concerns, current health education practices, and health education needs in child day care centers. The Child Care Health Education Assessment was developed for data collection with this study population. The instrument was reviewed by a panel of national experts and pretested with directors of child care centers prior to study implementation, and evaluated for content validity. Cronbach's alphas were calculated to determine the internal consistency and reliability of the instrument.

A descriptive survey design was utilized to gather information from child day care directors in 25 counties of East Tennessee. From the Department of Human Services (DHS) list of licensed child care centers, all those providing care to children ages three to five years were selected for the sample. The Child Care Health Education Assessment (CCHEA) was distributed by mail to 453 day care directors. A total of 103 centers (23%), representing 76% of the counties in the sample population responded to the survey. Directors' responses to the CCHEA were analyzed according to the major research questions for this study. Findings, conclusions, and recommendations based on this analysis are presented in the following sections.

Findings

The findings of this study are summarized according to the research questions related to:

1. The major health and safety concerns of child day care directors;
2. The health education needs of staff, children, and parents;
3. Current health education practices in child day care programs; and
4. The validity and reliability of the Child Care Health Education Assessment.

Directors' Health and Safety Concerns

1. The majority of child day care directors in this study reported that health and safety concerns were relatively infrequent in their centers.
2. The range of health and safety concerns and priority areas for the centers were fairly consistent, with infectious disease and behavior and discipline identified as the most frequent areas of concern.

Health Education Needs

Staff

1. Directors' ratings of important health education topics for staff were generally higher than their ratings of health and safety concerns.
2. Staff health education and training in CPR, first aid, child safety, and child abuse were rated as most important by the majority of directors.
3. Directors tended to rate prevention and health promotion topics as lower priorities.

Children

1. Nearly all centers reported a comprehensive, integrated health education component for children.
2. Ratings of importance were high for the majority of health education topics, with priorities identified in the areas of personal hygiene, self esteem, and safety.
3. Health education related to preventive behaviors and self-care skills in dental health, nutrition, exercise and substance abuse received slightly lower ratings.

Parents

1. Directors rated behavior and discipline and sick child exclusion policies as the most important health education topics for parents.
2. Overall ratings for health education topics for parents were very consistent with those of staff; less similarity was noted between topic ratings for children and parents.

Current Health Education Practices

1. The majority of directors in this study reported they were currently providing health education for staff, children, and parents, and also identified an interest in additional activities for each target group.
2. Staff health education and training were reported in a wide range of topics, but these activities were poorly quantified by directors.
3. The highest level of health education activity was reported for children.
4. Health education for parents in all topics was reported by most centers.
5. Directors of child care centers in the sample need assistance with health education materials, methods, and professional resources.

Child Care Health Education Assessment

1. Directors' responses and information obtained from the CCHEA reveal that this instrument is valid for measurement of health and safety concerns, health education needs, and current health education practices in child day care.
2. Cronbach's alphas reported for the major subscales of the CCHEA demonstrate a high level of internal consistency and reliability for the instrument.

Conclusions

The following conclusions are based on the findings of this research study:

1. In comparison to national statistics and previous studies, the directors of child day care centers in East Tennessee report a similar range of health and safety concerns, although with much lower frequency. Directors' ratings of health and safety concerns were not consistent with their ratings of important health education on topics. No conclusion can be drawn as to the accuracy of directors' assessments in the areas of child and staff health status or the actual health and safety conditions of the child care environment.

2. The directors of child care centers identify health education for staff, children, and parents as an important component of child care programs. A significant number of centers do offer health education opportunities for all three target groups. Priority topics reflect current day care health and safety issues, with the exception of emphasis on prevention and health promotion activities.
3. Although the actual quantity and quality of current practices cannot be evaluated from the data obtained in this study, the findings suggest that implementation of health education for this target population is hampered by lack of state requirements as well as by limitations of time, money, and resources in individual child care centers.
4. Based on the expert review, pretesting, and Cronbach's alphas obtained in this study, the Child Care Health Education Assessment is a valid, reliable, and usable instrument for this population.

Recommendations

The following recommendations evolved over the course of this study:

1. Improved surveillance and data collection is needed to determine the actual health status of children and providers in child care settings, as a basis for prioritizing health education interventions.
2. Needs assessments of both staff and parents should be done to validate the health education priorities identified by directors of day care centers.
3. Current knowledge related to health and safety risk factors in child care settings should be utilized to develop, implement, and evaluate health education strategies focused on primary prevention and health promotion for children, parents, and staff.
4. The Child Care Health Education Assessment should be evaluated as a needs assessment instrument for staff and parents, as well as for duplication of this study with other day care center populations.

Summary

At the present time, child care programs are at a significant disadvantage in realizing their potential to promote the health and well being of children and families. As increasing emphasis is placed on the health and safety of child care centers, there is a tremendous opportunity to expand health education initiatives and the role of health educators to meet these concerns. Development and implementation of effective health education strategies for this target population depends on an understanding of the risks associated with child day care, identification of needs, and knowledge of current policies and regulations which influence these issues. In collaboration with other health professionals and day care providers, health educators can promote the development of innovative strategies to reduce risk and promote the health and safety of children, parents, and staff. In the absence of national policy incentives and effective regulatory mechanisms, this presents a significant challenge. But health educators have the potential to meet this challenge by stimulating professional and community awareness, and advocating for national social and economic policies which ensure a safe and healthy day care environment for America's children.

CHAPTER VI

THE STUDY IN RETROSPECT

The present study is a culmination of various stages of professional interest in the field of early childhood health education. During my graduate studies in maternal-child health nursing. the research of David Gochman provided a tremendous stimulus for investigating health promotion activities among preschool children. The pioneering work of Bruhn and Parcel with children in day care created a framework for my initial study in this area. As there has been limited expansion of health education initiatives for young children since that time, this study was the result of renewed interest and attention to a much neglected and potentially fertile area of professional practice.

Focus of the Study

The purpose of this study was to conduct a health education needs assessment in child day care centers in East Tennessee. What originally appeared a study of simple intent and narrow focus evolved into a complex process requiring the integration of research and information from multiple disciplines and development and validation of an appropriate instrument for data collection. Needs assessment, a basic, but vital prerequisite to the development of effective health education strategies, was clearly required to provide a foundation for health education and health promotion of children, parents, and providers in child care programs. This study was conducted with a small population of child day care centers to stimulate interest and support in these initiatives.

Limitations of the Study

The most significant limitations of this study were the time, expense, and participation rate of the child care directors. Even though a relatively low return rate was anticipated, the original sample size included an adequate population to obtain reasonable results. Compared to previous health education needs assessments with the day care population, the return rate for centers in this study was poor. There are several plausible explanations for this. Phillips (1995) noted in previous national child care studies that a sizable proportion of centers refuse to participate as a

result of concerns about quality issues and licensing implications. Despite efforts to ensure confidentiality and assurances that this study was not affiliated with any regulatory agency, fear of unknown agencies and lack of personal contact may have been inhibiting factors.

In light of the favorable response of directors who were interviewed for pretesting of the instrument, it appears that personal contact may be a more beneficial, efficient manner in which to obtain information from this population. Establishing a link with the professional association or a child care leader in this area might facilitate this process. On-site observation of the child care setting would also provide an overview of the type of center, the population it serves, and some indication of quality which is intangible in the written survey format.

Although a larger, more representative sample was possible with mail distribution, the response rate did not justify the time nor the cost, and repeated follow-up efforts were required. Some other considerations related to the population, timing of the survey, and the DHS listings were problematic. It was learned in the course of follow-up phone calls that the DHS listing of child care centers was not current, even though it was dated July, 1996, less than one month prior to the survey. Also, many of the listings identified street addresses rather than mailing addresses, which compromised delivery to many agencies.

Time is a primary consideration when requesting survey information from any population, and feedback from providers during phone follow-up suggested that the CCHEA was too lengthy or required too much information which was not readily available. Some directors also reported they were completing mandatory state surveys during this time, and were clearly not interested in participating in a non-mandatory activity, regardless of the purpose. The survey was planned to arrive during the summer in consideration of directors' time constraints, but as many centers were preparing to reopen during August, this was also a compromising factor.

Strengths of the Study

A needs assessment instrument appropriate to the day care population was the most fundamental requirement of this study. The development and validation of the Child Care Health

Education Assessment was not a singular endeavor. Dr. Charlotte Hendricks' advice and direction were invaluable in formulating the content, as well as identifying an expert panel to review the instrument. The diverse national review panel was extremely positive in its responses, contributing both time and expertise for refinement of the CCHEA. Preliminary results, as reported in the study, suggest this was a worthwhile effort, resulting in a valid and reliable needs assessment instrument. The utility of the instrument might be expanded for needs assessments with parents and staff members to validate directors' ratings of health and safety concerns as well as health education priorities. With further testing and refinement, the CCHEA could provide a reliable foundation for implementation of health education in child care settings across the state and in other areas of the country.

The study population, though small, was found to be representative not only of child care centers in Tennessee, but also of the national child care landscape. In light of this, it appears that smaller samples could be used to obtain needs assessment data in specific geographic areas with similar results. Further study is needed to measure the accuracy of this perception.

Significance of the Study

While the findings of this study were not unexpected, there is no question as to their importance and potential implications. Of primary importance is the fact that the study results validate and support what has been previously demonstrated in the area of health education in early childhood programs--what is currently being done, and existing gaps in health education practice. The consistency of findings among these studies lends substantial support to proposed directions for the implementation of health education across child care settings.

Child care centers in East Tennessee are engaged in some level of health education activity for staff, children, and providers. In a non-mandatory environment with few regulations and standards, it seems unlikely that the quantity or quality of early childhood health education is adequate to meet the needs of this target population, and analysis of several of the study findings suggest this to be true.

The overall findings related to directors' health and safety concerns suggest that child care centers in East Tennessee experience few, if any, of the health and safety consequences of child care which have been presented in the literature. While actual health data for children in the sample centers was not collected, there is no reason to believe that this population differs significantly from national statistics in relation to the incidence of infectious disease, illness, and injury. The level of poverty and the prevalence of single parent families in Tennessee would suggest otherwise. It is also evident in recent reports (Tennessee Kids Count, 1995), that there are significant numbers of children who are hungry or malnourished, abused and neglected, and dying from accidental injuries in this state. Thus, day care directors appear rather poorly informed as to the potential and/or actual health concerns of children in their care.

This observation is of particular concern in light of the educational levels of child care providers as presented in this study. While assessment of program quality was not a focus of this study, the low levels of education among child care providers has clear implications for child health and safety outcomes. The 1995 Cost, Quality, and Child Outcomes Study presents evidence of the association between minimal educational requirements for staff and the presence of health and safety hazards which threaten young children or impair their healthy growth and development. These are important findings which emphasize the need for health education and training for day care providers in this state.

It should also be noted that directors' most significant areas of concern--infectious disease and behavior and discipline--are not addressed in the current state mandatory training requirements for staff. However, those topics which are mandatory--child abuse and safety--are not priority concern areas for most child care directors. Also the areas of mandated training do not reflect the most pressing health and safety issues for staff or young children in the day care setting.

Interestingly, some areas of high concern, such as chronic disease, were rated low in importance for staff health education and training. Chang et al. (1989) also found that for some

providers, areas of concern, discomfort, or limited knowledge were not necessarily areas of interest for health education, suggesting providers' inability to assess their own learning needs. This paradox reveals the need for a comprehensive health education curriculum which addresses not only the interests of providers, but is also based on the needs and problems which currently exist in child care settings. Improved surveillance and epidemiological data is needed to determine actual health needs of this target population.

Future Directions

Health education and training may be beneficial in increasing awareness, risk assessment, and preventive health interventions for day care directors, staff and parents, and improving health and safety outcomes for children in this environment. At this time, it does not appear that federal mandates or state regulations will be forthcoming to address these concerns. Clearly the opportunity and responsibility for expanding health promotion and health education initiatives in child day care belongs to public health professionals.

To the extent that health education is believed to be an effective disease and injury prevention strategy, the development and implementation of comprehensive, multi-targeted programs in child care settings is both a timely and prudent endeavor. Further research is needed to determine the most effective and efficient health education strategies and to evaluate the benefits in terms of risk reduction and behavioral outcomes. What is more urgently needed, I believe, is the application of current knowledge to health promotion and the prevention of disease and injury in child day care. The American Public Health Association/American Academy of Pediatrics standards (1992) should be used as the framework for development and implementation of health education initiatives to address the health and safety concerns of this target population.

Wide dissemination of the results of this study to day care providers, health professionals, parents, and the community may enhance public awareness, advocacy, and support of health education as an integral component of a quality child care program. Over time, the convergence

of professional awareness and leadership will stimulate public support and policy changes which reflect a greater commitment to the health and welfare of children, parents, and child care providers.

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APPENDICES

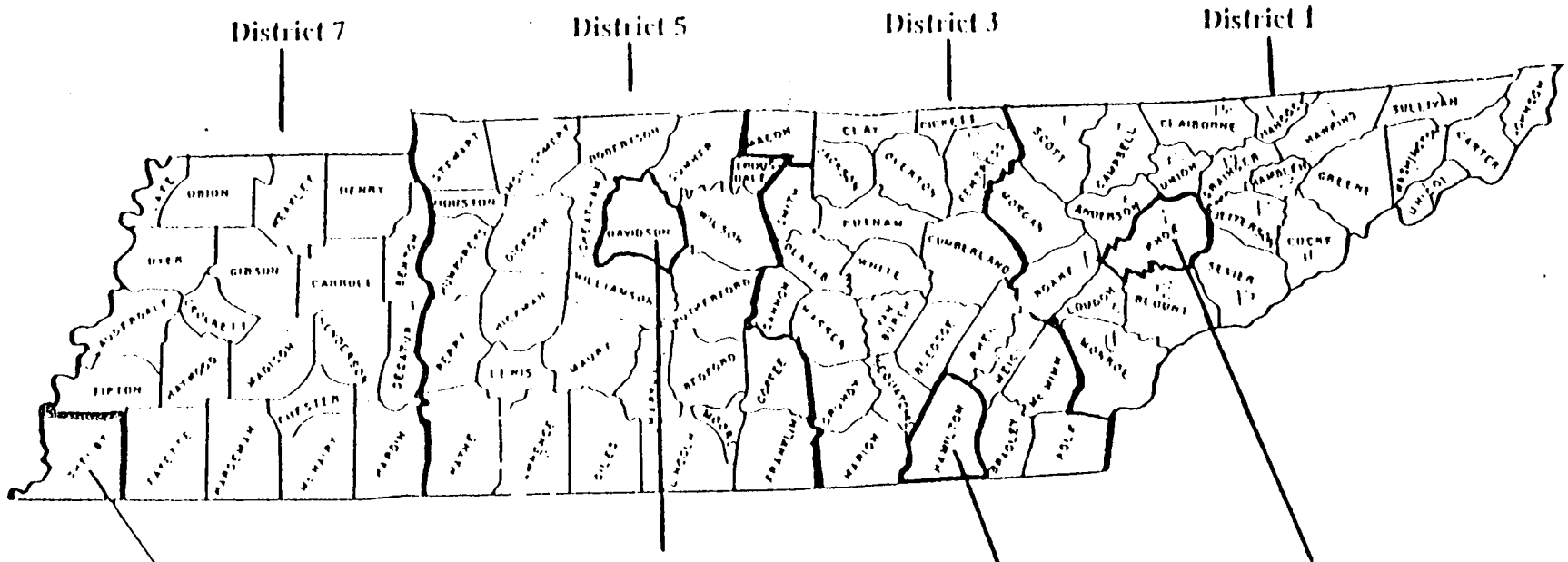
Appendix A

Tennessee Department of Human Services

Child Care Licensing Regions Map

DEPARTMENT OF HUMAN SERVICES

TENNESSEE



Appendix B

Preliminary Instrument Review Panel

CHILD CARE HEALTH EDUCATION ASSESSMENT

PRELIMINARY REVIEW PANEL

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Appendix C

National Expert Review Panel

Child Care Health Education Assessment

Item Review

CHILD CARE HEALTH EDUCATION ASSESSMENT

NATIONAL EXPERT REVIEW PANEL

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CHILD CARE HEALTH EDUCATION ASSESSMENT

DIRECTIONS: Please respond to the following items about your child care center. Base all responses on the activities of your center within the past year. Feel free to add comments or information in any area.

ITEM #1

For each age group in your program, indicate number of children enrolled, number of classes per age group, and number of staff per class

Age Group	Number enrolled	Number of Classes	Number of staff per class
Infants (birth to 12 months)			
Toddlers (13 to 35 months)			
Preschoolers (3 to 5 years)			

ITEM #2

How many staff teachers are currently employed in your program?

Number of full-time staff	Number of part time staff

ITEM #3

Indicate the number of staff (administrators and teachers) with the following qualifications.
NOTE: ECE= Early Childhood Education; CD = Child Development

Education Level	Less than High School	High School/ GED	AD		BA or BS		MA or MS		PhD	
			ECE/CD	Other	ECE/CD	Other	ECE/CD	Other	ECE/CD	Other
Number of Staff										

ITEM #4

Rate each of the following child health and safety problems from 1(LEAST FREQUENT) to 4 (MOST FREQUENT) according to its occurrence in your center.

PROBLEM	FREQUENCY			
Infectious Disease				
Colds and Flu	1	2	3	4
Diarrhea and Vomiting	1	2	3	4
Respiratory Illness	1	2	3	4
Other	1	2	3	4
Accidents and Injuries	1	2	3	4
Nutrition	1	2	3	4
Chronic Health Problems	1	2	3	4
Child Abuse/Neglect	1	2	3	4
Behavior and Discipline	1	2	3	4
Head Lice	1	2	3	4
Staff Health	1	2	3	4
Environmental Hygiene & Safety	1	2	3	4
Other (please specify)	1	2	3	4
Other				

ITEM #5

Health education topics for teachers and staff are identified below. For each topic indicate the number of staff trained and hours of training per staff member. Also rate the importance of training in each topic from 1(LEAST IMPORTANT) to 4 (MOST IMPORTANT) according to the needs of staff in your program.

TOPICS	NUMBER OF STAFF	HOURS OF TRAINING	IMPORTANCE OF TRAINING Least			Most
Child safety and Injury Prevention			1	2	3	4
Infection Disease: Transmission and Prevention			1	2	3	4
Recognition and Management of Childhood Illness			1	2	3	4
Child Growth and Development			1	2	3	4
Child Abuse and Neglect			1	2	3	4
Chronic Health Problems in Children			1	2	3	4
Nutrition Planning			1	2	3	4
First Aid (including choking, rescue breathing)			1	2	3	4
Cardiopulmonary Resuscitation			1	2	3	4
Staff Personal Health & Wellness			1	2	3	4
Educating Parents on Health & Safety			1	2	3	4
Community Resources			1	2	3	4
Other (please specify)			1	2	3	4

ITEM #6

Are health education activities for young children (ages 3-5) included as a planned, on-going, and integrated part of your child care curriculum?

YES ☐ NO ☐

ITEM #7

Health education topics for children are listed below. For each topic, circle Yes or No to indicate if it was taught to children in your program. Also rate the importance of this topic from 1 (LEAST IMPORTANT) to 4 (MOST IMPORTANT) according to the needs of children in your program.

TOPIC	TAUGHT IN PROGRAM		IMPORTANCE			
			Least			Most
Body Parts	YES	NO	1	2	3	4
Five Senses	YES	NO	1	2	3	4
Handwashing/Personal Hygiene	YES	NO	1	2	3	4
Healthy food choices	YES	NO	1	2	3	4
Keeping fit/exercise	YES	NO	1	2	3	4
What to do when I'm sick or hurt	YES	NO	1	2	3	4
Safe touch (abuse prevention)	YES	NO	1	2	3	4
What is a family?	YES	NO	1	2	3	4
Other (please specify)	YES	NO	1	2	3	4
Other	YES	NO	1	2	3	4

ITEM #8

Health education topics for parents are listed below. Please circle Yes or No to indicate if information on this topic was provided to parents. Also rate the importance of this topic from 1 (LEAST IMPORTANT) to 4 (MOST IMPORTANT) according to the needs of parents in your program.

TOPIC	INFORMATION PROVIDED		IMPORTANCE Least			Most
Safety & Accident Prevention	YES	NO	1	2	3	4
Infectious Disease: Transmission and Prevention	YES	NO	1	2	3	4
Recognition & Management of Childhood Illness	YES	NO	1	2	3	4
Sick child care/exclusion policies	YES	NO	1	2	3	4
Child growth & development	YES	NO	1	2	3	4
Child nutrition	YES	NO	1	2	3	4
Child health & fitness						
Behavior & discipline	YES	NO	1	2	3	4
Community resources	YES	NO	1	2	3	4
Other	YES	NO	1	2	3	4

ITEM #9

What health education resources in the following categories are currently utilized by your program? Check (X) all that apply.

Physician	
RN	
Health Educator	
Other health consultant (specify)	
Guest Speakers (specify)	
Books and Publications	
American Public Health Association/American Academy of Pediatrics:	
Healthy Young Children: A Manual for Programs (NAEYC)	
Model Child Care Health Policies (NAEYC)	
Other(specify)	

ITEM #10

In which of the following areas does your center need assistance to provide health education? Check (X) all that apply

Assessing needs and setting priorities	
Identifying appropriate health topics	
Selecting/utilizing materials (written & audio visual)	
Integrating health education into curriculum	
Identifying resources-community, professional	
Selecting appropriate/most suitable methods	
Other (please specify)	

ITEM #11

In your evaluation, which of the following factors in your current program may HELP or HINDER health education?

	Help	Hinder
Policies or guidelines		
Administrative support		
Staff interest and support		
Staffing resources		
Staff knowledge		
Parent interest and support		
Time requirements		
Financial requirements		
Curricula/teaching materials		
Health professional resources		
Other		

ITEM #12

Briefly describe the current health education requirements, recommendations, or policies related to health education for staff, children, and parents in your program.

Staff
Children
Parents

ITEM #13

Please share any additional comments, concerns or suggestions related to health education activities in child care programs.

ITEM REVIEW

CHILD CARE HEALTH EDUCATION ASSESSMENT

DIRECTIONS: Please respond to the following items about your child care center. Base all responses on the activities of your center within the past year. Feel free to add comments or information in any area.

ITEM #1

For each age group in your program, indicate number of children enrolled, number of classes per age group, and number of staff per class.

Age Group	Number enrolled	Number of Classes	Number of staff per class
Infants (birth to 12 months)			
Toddlers (13 to 35 months)			
Preschoolers (3 to 5 years)			

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

_____

ITEM #2

How many staff teachers are currently employed in your program.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #3

Indicate the number of staff (administrators and teachers) with the following qualifications.
NOTE: ECE= Early Childhood Education; CD = Child Development

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #4

How often do the following health and safety problems occur in your center? Rate each problem from 1 (Least) to 4 (Most) according to its frequency in your center.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #5

Health education topics for teachers and staff are identified below. For each topic indicate the hours of training per staff member in the past year. Also rate the importance of training in each topic from 1(LEAST IMPORTANT) to 4 (MOST IMPORTANT) according to the needs of staff in your program.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #6

Are health education activities for young children (ages 3-5) included as a planned, on-going, and integrated part of your child care curriculum. YES ☐ NO ☐

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #7

Health education topics for children are listed below. For each topic, circle Yes or No to indicate if it is taught to children in your program. Also rate the importance of this topic from 1 (Least Important) to 4 (Most Important) according to the needs of children in your program.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #8

Health education topics for parents are listed below. Please circle Yes or No to indicate if information on this topic is provided to parents. Also rate the importance of this topic from 1 (Least Important) to 4 (Most Important) according to the needs of parents in your program.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #9

What health education resources in the following categories are currently available to your program? Check (X) all that apply.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #10

In which of the following areas does your center need assistance to provide health education? Check (X) all that apply.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #11

In your evaluation, which of the following factors in your current program may HELP or HINDER health education.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #12

Please describe the current health education requirements, recommendations, or policies for staff, children, and parents in your program.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

ITEM #13

Please share any additional comments, concerns or suggestions related to health education in early childhood in general or specific to your program.

Circle to indicate whether this item is:

Not Important	Least Important	Somewhat Important	Important	Most Important
1	2	3	4	5

Comments: _____

_____

_____

Recommended Revisions: _____

_____

Appendix D

University of Tennessee Human Subjects Review (Form A)

Form A CRP #_____

(This form is Federally auditable and must be TYPED.)

Certification of Exemption from Review by Full Committee for Research Involving Human Subjects

Date Received in RA _____

A. **PRINCIPAL INVESTIGATOR(S) and/or CO-PI(s):** (For student projects, list both the student and the advisor).

Maureen A. Nalle, MSN Dr. Bill Wallace (advisor)

B. **DEPARTMENT:** Health, Leisure and Safety

C. **COMPLETE MAILING ADDRESS AND PHONE NUMBER OF PI(S) and CO-PI(s):**

Maureen Nalle
1944 Riversound Dr.
Knoxville, TN 37922

Dr. Bill Wallace (Dept. Health, Leisure, Safety)
University of Tennessee
1914 Andy Holt Ave., Knoxville, TN 37996-2710

D. **TITLE OF PROJECT:** Health Education in Child Day Care: Current Practices and Needs Assessment

E. **EXTERNAL FUNDING AGENCY AND ID NUMBER** (if applicable): N/A

F. **GRANT SUBMISSION DEADLINE** (if applicable): N/A

G. **STARTING DATE:** Upon certification by Coordinator of Compliances. **(NO RESEARCH MAY BE INITIATED UNTIL CERTIFICATION IS GRANTED.)**

H. **ESTIMATED COMPLETION DATE** (Include all aspects of research and final write-up.):

I. **Objective(s) of Project** (Use additional page, if needed):

To conduct a health education needs assessment in a select population of child care centers in East Tennessee.

II. **Subjects** (Use additional page, if needed):

Day care center program directors from 23 counties in East Tennessee. A total of 450 (approximate) child care centers serving 13 or more children have been identified by Dept. Of Human Services (TN) licensing agency. Only center directors will be involved in this research. Directors will be identified from current listing of licensed day care providers in identified area. Duration of involvement is limited to time required to complete survey instrument. No contact will be made with children, parents, or teachers in these day care centers.

III. **Methods or Procedures** (Use additional page, if needed):

Exploratory survey design will be used for data collection. Investigator has developed a questionnaire which will be mailed to day care center directors in East Tennessee. Directors will be asked to identify (1) major health concerns in their center; (2) current health education practices, and (3) health education needs of staff, children, and parents. The completion of this survey presents no risk to the intended subjects. Survey responses will be confidential. Center identification information will be removed and responses coded to assure anonymity of the center. Only the primary investigator and faculty advisor will have access to the data obtained. Survey data will be stored in locked file at the Dept. Of Health, Leisure, and Safety by Dr. Bill Wallace, advisor. (Bldg. # 1914 Andy Holt Ave.) (Room #-308 Health, PE/Recreation)

IV. **CATEGORY(S) FOR EXEMPT RESEARCH FOR 45 CFR 46** (see reverse side for categories) (1)

Category (1) This research will be conducted in commonly accepted educational setting--child day care centers, and involves routine educational strategies related to health education of children, staff and parents. Category (3) The research will be conducted using a survey procedure involving only the director of the day care program.

CERTIFICATION: The research described herein is in compliance with CFR 46 101 (b) and presents subjects with no more than minimal risk as defined by applicable regulations.

Principal Investigator Name: Maureen Nalle, MSN	Signature: Maureen A Nalle, MSN	Date: 15 Apr 96
Advisor Name: Dr. Bill Wallace	Signature: Bill C. Wallace	Date: 4/26/96
Dept. Review Comm. Chair Name: ROBERT J PURSLEY, PhD	Signature: Robert J Pursley	Date: 4/29/96
Dept. Head Name: Charles A Hamilton	Signature: Charles A Hamilton	Date: 5/7/96
APPROVED: Steve Pulik, Coordinator of Compliances, Research Administration	Signature:	Date:

Rev. 10/90

Appendix E

Cover Letter to Child Day Care Directors

Child Care Health Education Assessment

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

Department of Health, Leisure, and Safety Sciences
College of Human Ecology
1914 Andy Holt Avenue
Knoxville, TN 37996-2710
(615) 974-5041
FAX (615) 974-6439

August 5, 1996

Dear Program Director:

I am a doctoral student in Health Education at the University of Tennessee, Knoxville, completing a dissertation on health education activities in early childhood programs. As a pediatric nurse and health educator, I am particularly interested in promoting the health and safety of children, staff and parents in child day care centers.

The enclosed questionnaire is designed to assess current health education practices and assist in determining the health education needs of your program. The questionnaire consists of 15 items which require brief answers or rating of priorities related to health education in specific categories. Completion of the questionnaire will require approximately twenty to thirty minutes of your time. Please feel free to add comments or additional information as you respond to the items.

This study is not related to any licensing or regulatory agency. Participation is completely voluntary and you may refuse to participate or withdraw at any time. Return of the completed survey constitutes your consent to participate in the study. If study results are used in future professional publications, identifying information will be removed and all responses will be coded to assure anonymity. For verification of this study, you may contact Dr. Bill Wallace at the Department of Health, Leisure, and Safety Sciences, University of Tennessee (423-974-5041).

Your input will be extremely beneficial in developing and implementing health education activities in early childhood programs. I would appreciate receiving your completed survey no later than August 19, 1996. A stamped, self-addressed envelope is enclosed for your convenience.

If you have any questions as you respond to these items, please do not hesitate to contact me at 966-9287 (home) or 974-7598/7605 (work). Thank you for your interest and timely response. In return for your cooperation, you will receive sample health education materials for use in your center.

Sincerely,

Maureen A. Nalle

Maureen A. Nalle

CHILD CARE HEALTH EDUCATION ASSESSMENT

DIRECTIONS: Please respond to the following items about health education and your child care center. Base all responses on the activities of your center within the past year. Feel free to add comments or information in any area.

ITEM #1

For each age group in your program, indicate number of children enrolled, number of classes per age group, and number of staff per class.

AGE GROUP	NUMBER ENROLLED	NUMBER OF CLASSES	NUMBER OF STAFF PER CLASS
Infants (birth to 12 months)			
Toddlers (13 to 35 months)			
Preschoolers (3 to 5 years)			

ITEM #2

How many staff (teachers and administrators) are currently employed in your center?

Number of full-time staff	Number of part time staff

ITEM #3

Indicate the number of staff (teachers and administrators) with the following qualifications.

NOTE: ECE= Early Childhood Education; CD = Child Development; CDA=Child Development Associate

EDUCATION LEVEL	Less than High School	High School or GED	CDA Cert.	AD		BA or BS		MA or MS		PhD	
				ECE/CD	Other	ECE/CD	Other	ECE/CD	Other	ECE/CD	Other
NUMBER OF STAFF											

ITEM #4

Rate the frequency of the following health and safety concerns in your center (1 = LEAST FREQUENT to 4 = MOST FREQUENT).

HEALTH & SAFETY CONCERNS	FREQUENCY			
Infectious Disease	Least			Most
Colds & Flu	1	2	3	4
Diarrhea & Vomiting	1	2	3	4
Respiratory Illness	1	2	3	4
Other (specify)	1	2	3	4
Accidents & Injuries	1	2	3	4
Nutrition	1	2	3	4
Chronic Health Problems (asthma, ear infections, etc.)	1	2	3	4
Child Abuse & Neglect	1	2	3	4
Behavior & Discipline	1	2	3	4
Head Lice	1	2	3	4
Staff Health	1	2	3	4
Safety & Hygiene of Daycare Center	1	2	3	4
Other (specify)	1	2	3	4
Other (specify)	1	2	3	4

ITEM #5

Rate the importance of providing health education for staff and teachers in the following topics (1 = LEAST IMPORTANT to 4 = MOST IMPORTANT). For your center, indicate the number of staff trained in each topic and the hours of training per staff member.

TOPIC	IMPORTANCE OF TRAINING Least			Most	NUMBER OF STAFF	HOURS OF TRAINING
Child Safety & Injury Prevention	1	2	3	4		
Infectious Disease: Transmission & Prevention	1	2	3	4		
Childhood Illness: Recognition & Management	1	2	3	4		
Administration of Medication	1	2	3	4		
Child Growth & Development	1	2	3	4		
Nutrition Planning	1	2	3	4		
Chronic Health Problems in Children	1	2	3	4		
Child Abuse & Neglect	1	2	3	4		
Substance Abuse Prevention	1	2	3	4		
First Aid (including choking, rescue breathing)	1	2	3	4		
Cardiopulmonary Resuscitation	1	2	3	4		
Staff Personal Health & Wellness	1	2	3	4		
Educating Parents on Health & Safety	1	2	3	4		
Community Resources	1	2	3	4		
Other (specify)	1	2	3	4		
Other (specify)	1	2	3	4		

ITEM #6

Are health education activities for young children (ages 3-5) included as a planned, on-going, and integrated part of your curriculum?

YES ☐ NO ☐

ITEM #7

Rate the importance of providing health education for young children in the following topics (1 = LEAST IMPORTANT to 4 = MOST IMPORTANT). For each topic, circle YES or NO to indicate if it was taught to children in your center.

TOPIC	IMPORTANCE				TAUGHT IN PROGRAM	
	Least			Most		
Body Parts	1	2	3	4	YES	NO
Five Senses	1	2	3	4	YES	NO
Self Esteem & Self Concept	1	2	3	4	YES	NO
Handwashing & Personal Hygiene	1	2	3	4	YES	NO
Dental Health	1	2	3	4	YES	NO
Healthy Food Choices	1	2	3	4	YES	NO
Keeping Fit & Exercise	1	2	3	4	YES	NO
Safety (playground, pedestrian, passenger)	1	2	3	4	YES	NO
What is a family?	1	2	3	4	YES	NO
What to do when I'm sick or hurt.	1	2	3	4	YES	NO
Safe Touch (abuse prevention)	1	2	3	4	YES	NO
Good & Bad Drugs (substance abuse)	1	2	3	4	YES	NO
Other (specify)	1	2	3	4	YES	NO
Other (specify)	1	2	3	4	YES	NO

ITEM #8

Rate the importance of providing health education for parents in the following topics (1 = LEAST IMPORTANT to 4 = MOST IMPORTANT). For each topic, circle YES or NO to indicate if information was provided to parents of children in your center.

TOPIC	IMPORTANCE				INFORMATION PROVIDED	
	Least			Most		
Safety & Accident Prevention	1	2	3	4	YES	NO
Infectious Disease: Transmission & Prevention	1	2	3	4	YES	NO
Childhood Illness: Recognition & Management	1	2	3	4	YES	NO
Sick Child Care & Exclusion Policies	1	2	3	4	YES	NO
Child Growth & Development	1	2	3	4	YES	NO
Child Nutrition	1	2	3	4	YES	NO
Child Health & Fitness	1	2	3	4	YES	NO
Behavior & Discipline	1	2	3	4	YES	NO
Substance Abuse Prevention	1	2	3	4	YES	NO
Community Resources	1	2	3	4	YES	NO
Other (specify)	1	2	3	4	YES	NO
Other (specify)	1	2	3	4	YES	NO

ITEM #9

In which three topics are you MOST interested in providing more health education in your center?

STAFF TOPICS	CHILDREN'S TOPICS	PARENT'S TOPICS
1.	1.	1.
2.	2.	2.
3.	3.	3.

ITEM #10

In which of the following areas does your center need assistance to provide health education?.

Check (X) all that apply.

Assessing needs and setting priorities	☐
Identifying appropriate health topics	☐
Selecting/utilizing materials (written & audio visual	☐
Integrating health education into curriculum	☐
Identifying resources-community, professional	☐
Selecting appropriate/most suitable methods	☐
Promoting staff/parent participation	☐
Other (specify)	☐
Other (specify)	☐

ITEM #11

In your evaluation, which of the following factors in your current program may HELP or HINDER health education?

Check (X) all that apply.

	Help	Hinder		Help	Hinder
Policies or guidelines	☐	☐	Time requirements	☐	☐
Administrative support	☐	☐	Financial requirements	☐	☐
Staff interest & support	☐	☐	Curricula/teaching materials	☐	☐
Staffing resources	☐	☐	Health professional resources	☐	☐
Staff knowledge	☐	☐	Other (specify))	☐	☐
Parent interest & support	☐	☐	Other (specify))	☐	☐

ITEM #12

Does your center have a regular source of health and safety information? YES ☐ NO ☐

If YES, please specify an individual (title only) or type of agency. _____

ITEM #13

Which additional health education resources are currently utilized by your center? Check (X) all that apply.

Physician	☐
Registered Nurse	☐
Children's Hospital	☐
Public Health Department	☐
Health Educator	☐
Health Consultant (specify)	☐
Guest Speakers (specify)	☐
Books & Publications	☐
Caring For Our Children (APHA/AAP Manual)	☐
Healthy Young Children: A Manual for Programs (NAEYC)	☐
Model Child Care Health Policies (NAEYC)	☐
Other (specify)	☐
Other (specify)	☐

ITEM #14

Briefly describe your center's current health education requirements, recommendations, or policies for staff, children, and parents.

Staff

Children

Parents

ITEM #15

Please share any additional comments, concerns or suggestions related to health education activities in child care centers.

YOUR TIME AND INTEREST IN COMPLETING THIS SURVEY IS GREATLY APPRECIATED.

VITA

Vita

Maureen Nalle was born in New Jersey, and is one of nine children. She completed her Bachelor of Science in Nursing at Niagara University in 1974. After graduation, she served in the United States Army Nurse Corps at Walter Reed Army Medical Center and Nurnberg, Germany, followed by Army Reserve assignments at Fort Belvoir, Virginia and the Academy of Health Sciences, Fort Sam Houston, Texas.

She earned her Master of Science degree in maternal-child health nursing at the University of Texas Health Science Center, San Antonio, in 1983.

Since moving to Knoxville in 1984, she has worked as a clinical nurse specialist at East Tennessee Children's Hospital and as a faculty member at the University of Tennessee College of Nursing. She began doctoral studies in 1992 and was awarded the Doctor of Philosophy Degree in Human Ecology in December, 1996.

Maureen is married to Louden Nalle, M.D. and has three children. She is currently the Director of Continuing Education at the University of Tennessee, Knoxville, College of Nursing.