

**Mothers Compliance To Pre-Discharge Plan
of Their Children With Burn Injury**

Thesis

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Under Supervision of

Prof. Dr Sabah Saad El-Shrakawi

Professor of Pediatric Nursing and
Dean of Faculty of Nursing
Ain Shams University

Ass.Prof. Dr Iman Ibrahim Abd Al-Moniem

Ass. Professor and Act. Head of Pediatric Nursing
Department, Faculty of Nursing
Ain Shams University

**Faculty of Nursing
Ain Shams University
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Abstract

The aim of this study was to study the effects of mother's compliance to pre-discharge plan on health of their children with burn injury. The study subject consisted of 50 mothers admitted with their children with burn at Inpatient burn department at Tanta University Hospital. The age of children ranged from 3-12 years old, the children of both gender, the children have second and third degree of burns. Mother's questionnaire and observational assessment sheet were used to assess mothers' knowledge and practice regarding care of their children with burn. Pre-discharge plan was concerned with knowledge about burn and performance of care toward children with burn. Meaning and importance of compliance and how to achieve compliance with the pre-discharge plan, the result of the study revealed that the mean age of the mothers 27.60 ± 5.10 years, more than two third (74%) of them were working and 42% of them were secondary education and 24% of them were high education while the rest of the mothers were primary education, illiterate and read and write. The main results revealed that there was significant difference between mothers knowledge and practice pre and post implementation the pre discharge plan regarding care of their children with burn. There was significant correlation between mother's compliance and their age, education, occupation pre and post implementation pre discharge plan regarding care of their children with burn. The study concluded that the mothers were lacking satisfactory knowledge and practice care of their children with burn. It was recommended that the mother's knowledge and practice should be improved through; guideline booklet and mass media; intensive educational program for nurses and mothers about prevention and care of burn.

Keywords: Burn, compliance, discharge plan

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List of Abbreviation

ATN	Acute Tubular Necrosis
TBSA	Total Body Surface Area
RBCs	Red Blood Cells
GI	Gastro Intestinal

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Introduction

Burn is a type of injury that may be caused by heat, cold, electricity, chemical, light, radiation or friction. Burns injuries represent one of the most severe trauma caused by transfer of energy from heat source to the body. Children were at the greatest risk of burn because of their curiosity, dependence on others and increase mobility (*Encyclopedia, 2009*).

Burn injuries are one of the major health problems through the world. It is a complex form of trauma and series morbidity, handicaps and the leading cause of death (*Gad, 2002*) in the USA about 2.5 million people seek medical care each year for burn. Approximately 100,000 are hospitalized and 70,000 require intensive care. Approximately one million will sustain a permanent disabilities resulting from their burn injury. Children account for more than one thirds of all burns fatalities (*Lewis et al., 2000*).

In Egypt burn injuries are estimated to be approximately 3.3/ 100.000 population, it constitutes 12.5% of all hospital admission, where about 48% resulting in complications (*Hassan, 2001; El- Melgey 2003*). Furthermore the admission rate of patient with burn in Tanta University Hospital was 375 patients in 2002, 37.6% of them are children [about 100 cases were admitted burn unit in the year of 2005] (*Statistical Department of Tanta Hospital, 2005*)

Compliance is a state in which the individual follow the therapeutic regimen that is required for the management of his illness. Adherence to a therapeutic regimen requires that the person makes one or more lifestyle

changes to carryout specific activities, taking medication, following diet, practicing specific hygienic measures. The rates of compliance or adherence are generally very low especially when the regimen is complex or for long duration (*Smeltze & Bare, 2000*).

Nurse has a vital role in planning for discharge of children with burn as soon as possible after admission. Care should includes discharge planning about nutrition and diet needs, safety measures at home to prevent another burn, wound care, and range of motion exercises to prevent contracture. Such care should help the child to perform activities of daily living and return to normal activities. Also nurse should give the mothers all information of burn, and they should be involved in care of their children (*El- Sherif, 2004*).

Discharge planning is a documentation form used when the child was discharged from hospital. It is a service provided before discharge and delineates plans recommended for future care such as goals achieved, progress attends toward unmet goals, community resources needed, patient teaching and abilities to perform health care managed. Discharge planning is the process used by health professionals, patients and family to insure accurate and complete sharing of information in relation to the discharge of the child from hospital (*El- Soreety, 2002*).

Aim of the Study

The aims of this study are to study mother's compliance to pre-discharge plan for their children through:-

- Assess mother's knowledge and practice about care of their children with burn injury.
- Design and implement a pre-discharge plan instruction based on assessment of mothers need.
- Evaluate the effect of the pre-discharge plan instruction on mothers of children with burn injury.

Research questions:

- 1- Is the mother having information about burn?
- 2- Is the pre-discharge program improved the mothers knowledge and skills about care given for their children with burn?

Review of Literature

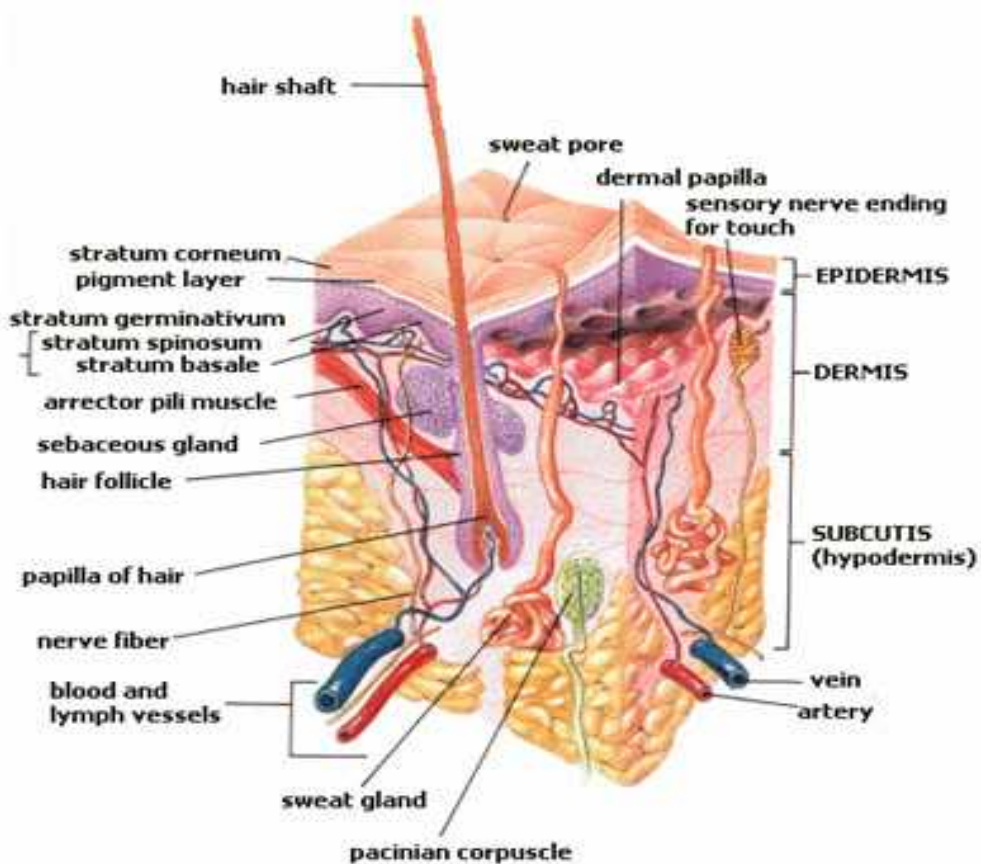
Anatomy of the skin

The skin is the largest organ of the body, comprising 4 to 5 square feet in the child. The skin is composed of three layers, epidermis, dermis and subcutaneous tissue. The epidermis is a superficial layer of stratified epithelial tissue, composed of five microscopic levels of maturing cells (*Ahmed, 2003*).

Lewis et al., (2004) stated that the epidermis is thinner in infants than in older children and its thickness varies over parts of the body. This layer is constantly shed to the environment, so it regenerates continually after significant injury. It has no blood vessels and receives nutrients by diffusion of fluid from the second layer of the skin, the dermis layer is thicker than the epidermis (ranges from 0.60 to 1.2mm) and makes up the bulk of the skin. It consists of collagen, connective tissue, containing nerve endings, blood vessels, hair follicles, the lymph spaces and the sebaceous glands. The subcutaneous tissue located below the dermis, contains collagen and adipose tissue (Fig. 1).

The skin serves various functions such as; it is a protective barrier against injury and infection from the environment and this barrier is broken when a burn injury occurs, greatly increasing the child's risk for infection. It maintains fluid and electrolyte balance essential for life. It is important in thermoregulation, normally the body can adjust to normal fluctuations in environmental temperatures because subcutaneous fat provides insulation, and blood flow to the skin (*Health-Cares.net, 2007*).

Fig (1) Anatomy of the skin



Source: Health- Cares.net, (2007): "Skin care" (analysis), webpage: HCcare. Available at <http://en.wikipedia.org/wiki/skin>

Burn

Burn is immediately or potentially life threaten traumatic injuries, which results in tissue loss or damage resulting from exposure of body to fire, excessive heat, direct flames, flash explosions, hot steam or water, chemicals, electricity, radioactive substances and various other agents (*Smeltzer & Bare, 2000*).

Burns are common cause of injury, affecting over 1 million people in the United States, leading to the hospitalization of almost 40,000 children each year and over 1000 deaths and half of these injuries are in children under age of 4years (*Lewis et al., 2004*).

Etiology of burn injuries

Burn in children may be accidental or non accidental; the accidental burn are occurred as a result of environmental situation that are not controlled by caregiver and caused by excessive exposure of the body to any thermal, chemical, or radiation. The non accidental injuries involve child neglecting in supervision which results in harm to the child (*Roy & Huttel, 2001*).

Americans burn association (2008) reported that burn injuries in children tend to follow pattern related to both developmental level and socioeconomic environment of the child. The most causes of burn injury are unintentional injuries. It is important to be alert to the possibility of intentional injury, because it has been reported that between 4% and 39% of admission to burn units.

As mentioned by *Curley & Harmon (2001)* scalds are the leading cause of burn injury for young children. Most scald injuries are related to the handling and consumption of hot food and liquids. Food prepared in microwave ovens, as well as hot coffee and soup. These wounds are painful and may be very deep depending on the nature of the scalding liquid and the time that the skin was exposed to it.

As stated by *Lippincott et al., (2001)* hot household tap water was an important cause of lower body scald injuries, especially in the bath. Because children's skin is thinner than that of a young adult, even short exposure to water at 130°C can cause full thickness damage. Electrical burns to the oral cavity are seen in infant chewing on wires. Contact burns from hot iron ovens and radiators occur in all ages. Ingestion of household chemicals can lead to devastating gastrointestinal damage. Even when diluted, these chemicals can cause full-thickness injury.

Roy & Huttel (2001) stated that match and fire are play a problem for the school age children. Flame burns associated with clothing ignition can cause series injury from both heat and melting fabrics- flash burns involving flammable liquid and explosives add a chemical component to the burn.

Types of burn

American Burn Association (2008) stated that there are many types of burn such as thermal, electrical, chemical, inhalation as well as radiation injury.

Thermal injury

The most common type of burn is a thermal burn caused by steam, scalds, contact with heat, and fire injuries. Two factors determine the depth of thermal injury; the temperature to which the tissue is heated and the duration of the exposure to the elevated temperature. As exposure temperatures increase, various cellular functions become impaired. First at temperature between 40°C and 44°C, cellular enzymatic reaction becomes inhibited followed by failure of the membrane sodium pump, causing high intracellular sodium level. Exposure of the skin for more than 1 second at 60

will cause epidermal sloughing i.e. partial thickness burn, and temperatures of greater than 70°C will cause dermal protein to be denatured producing a full thickness burn (*El- Saay, 2006*).

Smeltzer & Bare (2004) stated that thermal injury include three sub classifications; flame injuries; contact injuries and scald injuries. Flame burn most frequently result from house fires caused by heating equipment as space heaters and wood burning stoves and also by matches. Tissue damaged in the thermal burn is determined by both the temperature of burning agent and the duration of contact to the temperature.

Electrical injuries

Hadzhiyski & Argirova (2006) found that electrical injuries are caused by conversion of electrical energy into heat energy, which coagulates body tissue. Electrical injuries in children occur most often in the infant, toddler and adolescent age group. Infants and toddlers, while exploring their environment, often put every thing they find into their mouth. Saliva, which serves as an excellent conductor, creates a current pathway from the electrical source and through the child tissue.

Generally electrical burns are caused by an exogenous electric shock, such as being struck by lightning or defibrillated or cardioverted without a conductive gel. The internal injuries sustained may be disproportionate to the size of the burns seen, and the extent of the damage is not always obvious. Such injuries may lead to cardiac arrhythmias, cardiac arrest, and unexpected falls with resultant fractures (*Americans burn association, 2008*).

Chemical injuries

Abd- Raboh (2006) reported that chemical injury results from the thermal energy produced when strong acids or alkalis come in contact with body tissue, they are the most common causes of chemical burns in children. Chemical destroy skin by coagulation necrosis which may progress over time. The severity of the injury is dependent on the chemical properties, the concentration of the chemical, and the duration of contact with skin or mucous membranes.

Chemical burns are usually caused by caustic chemical compounds, such as sodium hydroxide, silver nitrate, and more serious compounds (such as sulfuric acid and Nitric acid). Hydrofluoric acid can cause damage down to the bone and its burns are sometimes not immediately evident (*Burns eMedicine, 2008*).

Inhalation injury

Al- Gamaly (2002) stated that inhalation injury, often called smoke inhalation, is a condition associated with exposure to the heat and toxic fumes produced by fire conditions in a closed space. The identification of a person who has sustained an inhalation injury is difficult clinically, a person who is at risk has the following characteristic: burns of face or neck, signed eye brows, nasal hairs and hair line or facial hair, carbon particles in the mouth or nose or carbonaceous sputum, brassy cough, hoarseness or stridor and significant serum carboxy hemoglobin level.

Inhalation burn can cause damage to the respiratory tract. Although damage to the respiratory mucosa can occur, it seldom happens because the vocal cords and glottis close as a protective mechanism. The inhalation