

**EFFECTIVENESS OF WARM COMPRESS ON LEVEL
OF DRY EYE AMONG ELDERLY CLIENTS IN
SELECTED OLDAGE HOMES, SALEM**

By

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CERTIFICATE

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ABSTRACT

A Study To Evaluate The Effectiveness Of Warm Compress On Level Of Dry eye Among Elderly Clients In Selected Oldage Home, Salem. A quantitative evaluative approach with quasi experimental pre and post test control group design were used. Through Non-probability convenience sampling technique, 60 elderly clients were selected, among them 30 from Thambras Oldage Home were assigned as experimental group and 30 from Sarada Oldage Home were assigned as control group. Demographic graphic data was collected by using structured interview schedule and their dry eye was measured by using Schirmer's test for both experimental and control group. In experimental group investigator applied warm compress on both eyes intermittently 10 minutes in morning and evening for 7 days. Posttest was conducted on the 8th day by measuring the dry eye for both groups by using same tool. The data collection were analysed and findings revealing that experimental group 19(63.4%) of them and control group 26(86.7%) of were non-smokers. In experimental group 21(70%) and control group 26(86.7%) were non-alcoholic. In pretest 27(90%) had mild dry eye at right side in experimental group, whereas 16(53.3%) had mild dry eye in control group, 21(70%) had mild dry eye at left side in experimental group, whereas 22(73.3%) had mild dry eye in control group. In post test 12(40%) had normal at righty eye whereas 14(46.6%) had normal at left eye in experimental group. In control group 18(60%) had mild dry eye at right eye whereas 20(66.7%) had mild dry eye at left eye.

In the experimental and control group right eye, post test mean, SD score was 10.06 ± 3.17 and 7.70 ± 1.03 respectively, 't' test score was 3.76. In experimental and control group left eye, post test mean, SD score was 11 ± 3.49 and 7.9 ± 0.94 respectively. The obtained 't' value was 4.15, which was significant at $P \leq 0.05$ level. Hence H_1 was retained. In experimental group there was significant association found between the level of dry eye with their selected demographic variables. In right eye age ($\chi^2 = 13.4$) and habit of smoking ($\chi^2 = 5.74$) had significant association with level of dry eye whereas in left eye age ($\chi^2 = 18.3$) had significant association with level of dry eye at $P \leq 0.05$ level. Hence H_2 was retained in experimental group and rejected in control group for selected demographic variables. This study concluded that warm compress was effective in reducing the level of dry eye among elderly clients.

CHAPTER I

INTRODUCTION

“My eye are an ocean in which my dream are reflected”

- Anna M. Uhlich

Aging is normal and consists of ages nearing or surpassing the average life span of human beings and thus the end of the human life cycle. Aging is the normal part of human development in the patterns of life, what happens, how and when varies greatly among older people. Although, specific changes are identified as part of normal aging process, each person has his own way. As years accumulate, people become more diverse rather than more alike, each influenced by physical, social and environmental factors. **(Harry Patch, 2003)**

Chronologically old age has been further categorized as young old age between 65-74 years, middle old age between 75-84 years and older old age above 85 years. Since 1900, the percentage of the older adults in the total population has tripled dramatically. Between the age group 65 and 69 the ratio between men and women is 100:20 and above 85 years of age the ratio is increased to 258:100. **(Hajjar, 2003)**

Aged have limited regeneration abilities and more prone to diseases, syndromes and sickness than other adults. Aging can be seen as a success story for public health and policies for socio economic development, but it also challenges society to adapt, in order to maximize the health determine whether the eye produces enough tears to keep it moist. **(Tommy, 2007)**

Ocular problems are due to variety of eye diseases, which play a role to decrease the visual function and other general activities of daily living independently. Dry eye is common disorder. Eye is composed of three layers, oily layers were produced by meibomian gland, watery layers were produced by lacrimal gland, and

the layers of mucus were produced by conjunctiva. The symptoms of dry eye vary considerably from one individual to another. **(Moss, 2001)**

Dry eye is one of the most common ocular symptoms many people have experienced. In general, a wide range of conditions can lead to this eye problem. For instance, excessive eye strain, stress, too much computer use, and excessive tear vaporization are common causes. Women over 50 are more susceptible to mild to severe dry eye. More exactly, women in this older group are said to suffer dry eye at a percentage of 7.8% versus a 4.7% among men. **(Walia, 2007)**

The incidence of dry eye in patients who presented with symptoms of dry eye was 50.66%. i.e 76 of the 150 patients of these, 43(56.57%) had mild to moderate forms of dry eye while 33(43.42%) had severe dry eye. The most common symptom was burning (60.7%), gritty sensation (52%), foreign body sensation (50%) and watering (48.7%). **(Carty, 2007)**

Dry eye is the second most common complaint of patients presenting to ophthalmologist. Dry eye is caused by decreased aqueous tear production due to lacrimal gland disease or increased tear evaporation, primarily due to meibomian gland disease and decreased blink mechanism to spread tears, and decreased afferent and efferent nerve functions that interconnect this component. **(National Eye Institute, 2003)**

The presenting complaints of patients with dry eye were burning sensation, redness, itching, blurred vision and light sensitivity. Other commonly reported symptom includes heavy or tired eyes, soreness, frequent blinking, excessive mucus secretion and intolerance to air drafts or dry environments. Patients with aqueous deficiency tend to have worse symptoms in the evening, whereas those with

meibomian gland disease and delayed tear clearance tend to have worse symptoms upon away in the morning. **(Suzanne. C. Smelter, 2002)**

Symptoms of dry eye are frequent in the elderly and often debilitating. Dry eye among elderly clients can be either because of decreased quantity of tear by gradual loose of fatty tissue in the lacrimal apparatus, or rapid and quick evaporation of tear by the meibomian gland. Although epidemiological studies investigating the prevalence of dry eye disease are rare, published studies indicates upto 20% of adults aged 45 years are more experience the dry eye. **(Schirmer, 2007)**

Need for the Study

Recent study had been conducted world wide to determine the prevalence of dry eye in the United States found that 14.6% of the 2482 subjects aged 65 years and older people reported symptoms of dry eye to be present often or at all the time. Another study from Melbourne, Australia with 926 subjects aged 60 years and older found a higher prevalence of dry eye syndrome. **(National Eye Institute, 2010)**

The survey reported to 39,876 US women participating in the women's health study about a history of diagnosed dry eye syndrome. The prevalence of dry eye syndrome increased with age from 5.7% among women < 50 years old to 9.8% among women aged ≥ 75 years old, the age adjusted prevalence of dry eye syndrome was 7.8% or 3.23 million women aged ≥ 50 in the United States. Compared with the whites, Hispanic women were more likely to report severe dry eye symptoms. **(Schamberg, 2003)**

One in four patients attending ophthalmic clinics report the symptoms of dry eye. Dry eye prevalence increase with age and hence it is extremely common in older people of both sexes. This condition is three times more common among women than in man. About six million women and three million men moderate or severe

symptoms of dry eye. The scientists estimated that an additional 20-30 million population may have mild dry eye. **(Brien, et.al, 2004)**

A study to evaluate that 92(18.4%) patients out of 500 patients have dry eye. Dry eye prevalence is more in the age of above 70 years (36.1%). It was significantly higher among females (22.8%) than in males (14.9%) more common in rural residents (19.6%) than in urban (17.5%) and highest among farmers and labourers (25.3%). The study reported that the prevalence of dry eye in Asian population is 6.5%, significantly higher in men compared to women (8.2% and 4.9% respectively) and decreased with age in men but not in women. **(Sahai and Malik, 2005)**

Dry eye is the most common condition which has the prevalence rate of 11% - 17% in the general population and rates upto 29% in clinical optometry practices. The majority of the patients with dry eye have mild form of condition; 65% - 89% of them have mild dry eye, 12% -13% of them have moderate dry eye and 0% - 2% of them have severe dry eye. **(Moss, 2000)**

The study to evaluate the dryeye symptoms that 199 subjects, 108 patients (54.3%) suffer from dry eye syndrome. Although dry eye syndrome was more common in older and female patients. There was significant association between dry eye syndrome and duration of diabetes ($p = 0.01$). Dry eye syndrome was more frequent in diabetic patients with diabetic retinopathy ($p = 0.02$). Diabetic retinopathy (17.1%) with mild or non proliferative diabetic retinopathy, 34 patients (17.1%) with moderate non proliferative diabetic retinopathy, 22 patients (11.1%) with severe non proliferative diabetic retinopathy and 25 patients (25.1%) with proliferative diabetic retinopathy. There were significant relation between age, sex and duration of diabetes and diabetic retinopathy. **(Maryam Rashidi, 2007)**

The most effective treatment for mild dry eye is the application of heat to the glands through the closed eye lids. Warm compresses reduced the symptoms of dry eye. The application of a disposable eye warming device to the eyelids for 5 minutes a day, in a group of dry eye patients, decreased the symptoms of dry eye. Warm compress is a good therapy because it makes eyes feel better for a while. It is recommended that it should be applied two times a day (morning and evening). **(Oslan, 2007)**

Warm compresses at 105°F have been shown to thicken the tear film lipid layer, decrease tear film evaporation, improve tear film break-up time, decrease ocular surface staining, and improve dry eye symptoms. They are usually provided by warming a wash cloth in hot water. A waterless, portable system is also available that heats automatically to 105°F for 5 minutes. Warm compresses can be beneficial if used in the morning and also can help dryeye symptoms if used in the early afternoon. In addition to helping dryeye, warm compresses are a major part of the treatment program for meibomitis, thinning thickened meibomian gland oils, and decreasing the eyelid inflammation of meibomitis by improving blood flow. **(Gibard, 2009)**

Thus it reveals the magnitude of dry eye problem from the elderly clients. Studies are proved that the prevalence of dry eye increases when the age advances i.e. in the age group of >65 years is approximately four times more than the age of <65 years. The perceptions of dry eye associated symptoms are varying from one individual to another moreover many of the aged are reluctant to go for the care of the symptoms. These symptoms are still minor it may affect the quality of vision and ultimately the quality of living. It needs economic and easiest method to increase the tear level and relief of symptoms of dry eye. The researcher felt this can be achieved

by warm compress which is to be given in the duration of 10 minutes for seven days in the morning and evening. (Sukhwinder, et.al., 2007)

The investigator during her clinical and community experience got exposed to various types of dry eye with elderly and found that soreness is one of the most devastating complaints of these patients which is newer and is relieved completely through pharmacological management. Even though getting pharmacological soreness management, the dry eye patients experience soreness. This made the investigator realize the need for incorporating certain alternative therapy and the most cost effective one found was warm compress to reduce dryeye.

Statement of the Problem

A Study To Assess The Effectiveness Of Warm Compress On Level Of Dryeye Among Elderly Clients At Selected Old Age Home In Salem.

Objectives

1. To assess the level of dryeye among elderly clients in experimental and control group.
2. To evaluate the effectiveness of warm compress on level of dryeye among elderly clients in experimental and control group.
3. To associate the level of dryeye in elderly clients with their selected demographic variables in experimental and control group.

Operational Definition

Effectiveness:

Reduction of dryeye after warm compress among elderly clients as measured by Schirmer's test.

Warm compress:

Clean cotton cloth dipped into the 45°C hot water, squeezed, folded and applied intermittently over the closed eye lids for 10 minutes.

Dry eye:

It is a condition in which the client has decreased tear level. It is measured by using Schirmer's test.

Elderly clients:

The person who has a dry eye between the age group of 60 to above 75 years, who are residing in oldage home, Salem.

Assumption

1. Dry eye is common in elderly clients.
2. Warm compress may have some effect on dry eye.
3. Specific and appropriate intervention may reduce dry eye

Hypotheses

H₁: There will be significant difference in level of dryeye among elderly clients in experimental and control group at $p \leq 0.05$ level.

H₂: There will be significant association between the level of dryeye among elderly clients in experimental and control group with their selected demographic variables at $p \leq 0.05$ level.

Delimitation

1. The study was limited to dry eye clients.
2. The study was limited to elderly clients residing in old age home.
3. Data collection period was limited to 4 weeks.

Projected Outcome

1. This study will help to evaluate the effectiveness of warm compress on dryeye among elderly clients.
2. The findings of the study will help to practice warm compress to reduce dryeye.

Conceptual Framework

The researcher adopted Imogene King's Goal Attainment Theory, (1981) based on the personal and interpersonal systems including interaction, perception, judgement, communication and transaction.

The investigator adopted goal attainment as a basic theoretical conceptual framework, which is aimed to show effectiveness of warm compress in reducing dry eye in elderly clients. This involves interaction between the researcher and the elderly clients who are residing in oldage home.

Six major concepts describe these phenomena

Perception:

It refers to people's representation of reality. Here the researcher and the elderly clients perceived the need of warm compress to reduce the dry eye.

Judgement:

Judgement is a decision which is made. Here the researcher decides to provide warm compress to reduce dry eye in elderly clients and the clients decide to participate in the research study.

Action:

This refers to the changes that has to be achieved. The researcher action to provide warm compress to reduce the dry eye in elderly clients and clients decide to receive the treatment.

Reaction:

Reaction helps in setting a mutual goal. In this study the researcher and elderly clients set a mutual goal. Here the mutual goal is to reduce the dry eye with warm compress.

Interaction:

It refers to the verbal communication between one individual and between two individual or more individuals who involve goal directed perception. Here the researcher encourages elderly clients to participate in applying the warm compress.

Transaction:

This is the achievement of a goal. Here the researcher goal is to reduce dry eye and evaluate the effectiveness of warm compress by using Schirmer's test.

Summary

This chapter dealt with introduction, need for the study, statement of the problem, objectives, operational definitions, assumptions, delimitations, projected outcome and conceptual framework.

CHAPTER II

REVIEW OF LITERATURE

Review of literature is an essential step in the development of a research project. It helps the researcher to design the proposed study in a scientific manner, so as to achieve the desired result. It helps to determine the gaps, consistencies and inconsistencies in the available literature about particular subject under the study. Review of literature for the present study is classified under the following headings,

1. Literature related to level of dry eye
2. Literature related to effectiveness of warm compress on level of dry eye.

1. Literature related to level of dry eye

Tong, et.al, (2011) conducted a study to assess the symptomatic dry eye is an Asian population, 3280(78.7% response rate) of Malay persons aged between 40-80 years. The prevalence rate of symptomatic tear film dysfunction was 6.57 the prevalence was significantly higher in men compared to women (8.2% and 4.9% respectively, $p < 0.001$) and decreased with age in men ($P = 0.002$) but no in women. Factors significantly associated with symptomatic tear film dysfunction were cigarette smoking, thyroid disease, higher income and self reported difficulty in performing daily activities.

Ozdemir and Temizdemir, et.al, (2010) conducted a study on age and gender related changes in the normal population. 140 normal volunteers, 70 males and 70 females subjects with absence of ocular symptoms or ocular surface disorder were selected as subjects. Schirmer's test and tear film break up time test were assessed in the right eye of each subjects. Results revealed that there is a decline in the tear function test values, especially the tear film time test values with advancing age.

Viso, et.al, (2009) conducted a prospective study among Spanish population on dry eye, results showed that dry eye prevalence 11.0% found to be more frequent in women (11.9%) than in men (9.0%) and was significantly associated with aging ($p < 0.001$). After controlling the age and sex was only factor associated with the dry eye. There were no habits or systemic factors associated with symptoms. However, autoimmune disease, computer use were found to be independently and significantly associated with dry eye.

Moss, et.al, (2008) conducted a study to assess the 10 years incidence of dry eye among the elderly clients and also they examined its association with various risk factors in West Indians of 43 to 86 years old people. They were examined in ($n = 2124$). Results revealed that over the 10 years period, 482 subjects developed a history of dry eye for an incidence of 21.6%. Incidence increased significantly ($p < 0.001$) with age, greater in women (25.0%) than men (17.2% $p < 0.001$). Also incidence was greater ($p < 0.05$) in subjects with arthritis, allergy or thyroid disease not treated with hormone, using antihistamines, anti anxiety medications, antidepressants, oral steroids or vitamins, and poorer self rated health. Incidence was less ($p < 0.05$) in subjects consuming alcohol.

Ychino, et.al., (2006) conducted a study to assess the features of dry eye disease in a Japanese elderly population with 50 males and 63 females aged over 60 years. The subjects underwent careful slit – lamp examinations, tear film breakup time examination, Schirmer's test- I and fluoresces staining of the ocular surface and trans illumination of the eye lids. Dry eye symptomatology was assessed with a symptom questionnaire. Results proved that a total 73.5% of them had definite dry eye and most frequently reported symptoms by the patients were ocular tiredness, irritation, dryness and foreign body sensation.

Sullivan, et.al, (2006) conducted a study on older people in association with numerous significant alterations in the lipid profiles of human meibomian gland secretions. Analysis of polar and neutral lipid patterns identified ions that were significantly different in secretions of younger versus older men and women as well as ions that varied significantly only between men and women. Aging was also accompanied by increased opacity of meibomian gland secretions in eyelid margin.

Punjabi, et.al, (2006) conducted a cross sectional study to compare the prevalence and severity of dry eye in patients with Rheumatoid arthritis among the Indian population. Rheumatoid arthritis patients were randomly 84 patients selected in the both G.S.Medical College and K.E.M. hospital. MacMonnies's dry eye questionnaire was used to classify the patients on the basis of their symptoms dry eye was diagnosed when the wetting on Schirmer filling paper test was < 5mm at minutes and the tear film breakup time was < 10 seconds in slit lamp examination after fluorescein staining. Study found that 23 patients (27.3%) with rheumatoid arthritis had dry eyes based on the Schirmer test, 19(22.62%) patients with rheumatoid arthritis had a tear film breakup time of < 10 seconds on slit lamp examination.

Sahai and Malik, (2005) conducted a cross sectional study to assess the prevalence of dry eye in a hospital based population and to evaluate the various risk factors attributable to dry eye. Dry eye randomly 500 patients above 20 years of age were screened. The result revealed that 92(18.4%) patients had dry eye. Dry eye prevalence was maximum in those above 70 years of age (36.1%) followed by the age group 31-40 years (20%). It was significantly higher ($P = 0.024$) in females (22.8%) than in males (14.9%), more common in rural residents (19.6%) than in urban residents (17.5%) and highest among farmers / labourers (25.3%).

Fujita, et.al, (2005) conducted a prospective case control study to evaluate the incidence of dry eye in rheumatoid arthritis patients with or without Sjogren syndrome 72 patients were selected and the severity of dry eye was assessed by the Schirmer's test. The rheumatoid arthritis activity was evaluated by the Lansbury index and was found that there was a correlation between Lansbury index and Schirmer's test in rheumatoid arthritis patients.

Schirra and Ruprecht, (2003) reported in their study that prevalence of dry eye is 52% to 63%, identified many risk factors among that the female gender was more common, which interferes significantly with quality of life.

Schaumbeg, et.al, (2003) conducted a cross sectional prevalence study among 39,876 US women participating in the women's health study with the diagnosis of dry eye syndrome. Results revealed that the prevalence of dry eye syndrome increased with age, from 5.7% among women <50 years old and 9.8% among women aged >75 years old. It also showed that 3.2 million American middle aged women and older people are affected with dry eyes.

2. Literature related to effectiveness of warm compress on level of dry eye.

Matsumoto, et.al, (2008) conducted a study on safety and efficacy of an original warm moist air device on tear functions and ocular surface of patients with simple meibomian gland dysfunction, 20 healthy volunteers were recruited and applied warm moist air device to the eyes for 10 minutes. Temperature of eyelids and corner were measured. After initial study another prospective clinical trials were carried out with warm moist air device and another group was selected with 10 samples, who received warm compress with towels. Both warm moist air device and warm compress given over 2 weeks and was found that warm moist air device and

warm compress increases the lipid layer thickness, warm air moist device provided symptomatic relief than warm compress.

Blackie, et.al, (2008) conducted a study to determine the optimal method of warm compress application to maximize heat meibomian glands in minimal time, subjects were randomly assigned group A (n=10) 15 minutes warm compress application without reheating, group B (n = 10) 30 minutes warm compress application with reheating every 2 minutes, group C (n =10) 30 minutes warm compress application optimizing contact with the lower lid and reheating every 2 minutes. Warm compress were heated to $45 \pm 0.5^{\circ}\text{C}$. Group A: the maximum outer and inner lower eyelid surface temperatures = $41.2 \pm 0.3^{\circ}\text{C}$ at 1 min and $38.8 \pm 0.2^{\circ}\text{C}$ after 4 min, respectively. Group B: the maximum outer upper eyelid temperature, $43.3 \pm 0.5^{\circ}\text{C}$, was reached after 6 min while it required 30 min to reach the maximum inner lower eyelid temperature, $40.4 \pm 0.3^{\circ}\text{C}$. Group C: it required 4 min to reach the maximum outer lower eyelid temperature, $42.2 \pm 0.4^{\circ}\text{C}$, while it required 20 min to reach the maximum inner lower eyelid temperature, $40.8 \pm 0.3^{\circ}\text{C}$. Findings from the study recommended that, to optimize warm compress efficiency, it need to be (1). heat the warm compress to approximately 45°C (2) optimize contact between the warm compress and outer eyelid surfaces (3) reheat the warm compress frequently and have a replacement heated warm compress on hand for exchange (4) perform the activity for at least 4 min in order to achieve an inner lower eyelid temperature $>40^{\circ}\text{C}$

Micheal and Lemp, (2008) conducted a study on management of dry eye encompasses both pharmacologic and nonpharmacological approaches, including avoidance of exacerbating factors, eyelid hygiene, tear supplementation, tear retention, stimulation and anti-inflammatory agents. It reported that the warm compress reduces the evaporative loss by temporarily thickening the lipid layer.

Lam, et.al, (2007) conducted a study to assess the effectiveness of warm compress on the corneal shape by using boiled eggs as the heat sources. 25 young adult Chinese were recruited, treatment - I hot hard boiled egg covered with wet cloth gently touching the eyelid. Treatment -II hot hard boiled egg covered with wet cloth placed close to, but not touching the eyelids; Treatment-III cold egg covered with wet cloth gently touching the eyelid each treatment protocol lasted for 5 minutes. Eye lid temperature was measured using an infrared thermometer before and every 1 min during the treatment. Result revealed that the treatment-I gave a 3.5°C skin temperature rise within 3 minutes. The skin temperature rise was around 2.5°C in treatment-II. There was no skin temperature change in treatment-III. Both treatment I & III affected the corneal parameters. The temperature rise from this treatment protocol should be large enough to melt the meibomian gland secretions without distorting the corneal shape.

Madumalini, et.al, (2007) conducted a quasi experimental study to assess the effectiveness of warm compress upon lacrimation and associated symptoms of dry eye among elderly clients in Candigarh. Findings revealed that warm compress relieved the dry eye associated symptoms and increased the tear level in both left and right eye. Warm compress by either warm wash cloth or Lindy's rice baggy treatments reduce the excessive evaporative of tear and enhances the tear secretion. In lid therapy it explains that hot compresses are good therapy because it makes and feel better for a while. But even more importantly, they are good for the eyes and tears because they start 100 seizing up any oily stuff in meibomian gland. It recommended that it should be applied two times a day. In the experimental group left eye mean, SD score was 11.40 ± 3.49 and in control group left eye mean, SD score was 9.84 ± 2.68 respectively, 't' test score was 1.982, whereas in experimental group right eye mean,

SD score was 10.91 ± 2.91 and in control group mean, SD score was 9.05 ± 1.87 respectively, 't' test score was 3.307 at $P < 0.01$ level. It was evident that warm compress was effective in reducing the level of dry eye among elderly clients.

Solomon, et.al, (2005) conducted a study on warm compress induced visual degradation and Fischer-Schweizer polygonal reflex in Boston. Subjects were randomly assigned group 1 (n=13) baseline measurements for each eye included subjective blur, visual acuity, corneal topography, lipid layer thickness and evaluation for corneal striae and edema. Warm moist compress was applied gentle pressure for 30 minutes to the closed eyelids of experimental group, nothing was applied to control group. Group II (n=11) above warm compress protocol was repeated to investigate the Fischer Schweitzer polygonal reflex. In experimental group mean, SD score was 3 ± 0.7 respectively 't' test score was 2.17 whereas in control group mean, SD score was 2.9 ± 0.9 respectively 't' test score was 0.88. Results revealed that in experimental group nine exhibited a decrease visual acuity. In control group none of them exhibited a decrease visual acuity. It shows that warm compress application induces transient visual degradation and corneal edema, visual degradation correlated positively with the polygonal reflex was observed applying warm compress.

Mitra.M, et.al, (2004) conducted a study on tear lipid layer thickness and ocular comfort with a novel device in dry eye patients with and without Sjogren's syndrome in United Kingdom. Subjects were randomized 31 patients with dryeye symptoms and Sjogren's syndrome. Group I (12 patients) undergone 10 minutes of treatment with the activated device and Group II (12 patients) had no treatment. The Sjogren syndrome was similarly randomized into group I (17 patients) and group II (14 patients). Ocular comfort of each subject were assessed prior and immediately after 5 and 30 minutes subsequent to the 10 minutes period. Further assessment was

carried out at 60 minutes. It reveals that lipid layer thickness at 5 minutes (right eye 1.2 level, $P < 0.0005$; left eye, 1.0 levels, $P < 0.0005$, Mann-Whitney) and at 30 minutes (right eye, 0.7 levels, $P < 0.0005$; left eye, 0.6 levels, $P < 0.0005$). The mean change at 5 minutes measured +0.8 in the experimental group and remained relatively unchanged +0.1 in the control group ($P < 0.1$). It shows that meibomian therapy with this novel device increase lipid layer thickness and ocular comfort patient with dry eye syndrome with and without Sjogren's syndrome.

Korb, Dr. et.al., (2003) conducted a study on application of warm compress therapy applied for patient with Meibomian gland dysfunction in a United States. Subjects were randomized 20 patients with diagnosis of dry eye with Meibomian gland dysfunction. Each subject was treated for a total of 30 minutes with warm (40°C) water used as a compress, another 20 patients total of 30 patients with room temperature (24°C) water used as a compress. In experimental group mean, SD score was 5 minutes 105.8 ± 23.7 , 15 minutes 117.8 ± 26.4 , 30 minutes 121.5 ± 27.1 whereas in control group mean, SD was 5 minutes 63.8 ± 14.3 , 15 minutes 62.3 ± 13.9 , 30 minutes 64.5 ± 14.4 respectively 't' test score was score was 5 minutes 0.79, 15 minutes 0.77, 30 minutes 0.81 at $P < 0.001$. It shows that warm moist therapy as an effective treatment for Meibomian gland dysfunction.

Summary

This chapter dealt with review of literature related to dry eye and literature related to effectiveness of warm compress on dry eye.

CHAPTER III

METHODOLOGY

This chapter describes the methodology adopted for assessing the effectiveness of warm compress on dry eye among elderly clients at selected oldage home. This chapter includes the research design, setting, population and sampling, criteria for selection of samples, instruments and tool for data collection.

Research Approach

Quantitative evaluate research approach was adopted for the study.

Research Design

The research design chosen for this study was Quasi experimental design. The design can be represented as,

$$E = O_1 \quad X \quad O_2$$
$$C = O_1 \quad O_2$$

E: Experimental group of elderly clients in a selected oldage home.

C: Control group of elderly clients in selected oldage home.

O₁: Pre-assessment of dry eye with Schirmer test.

X: Application of warm compress

O₂: Post-assessment of dry eye with Schirmer test.

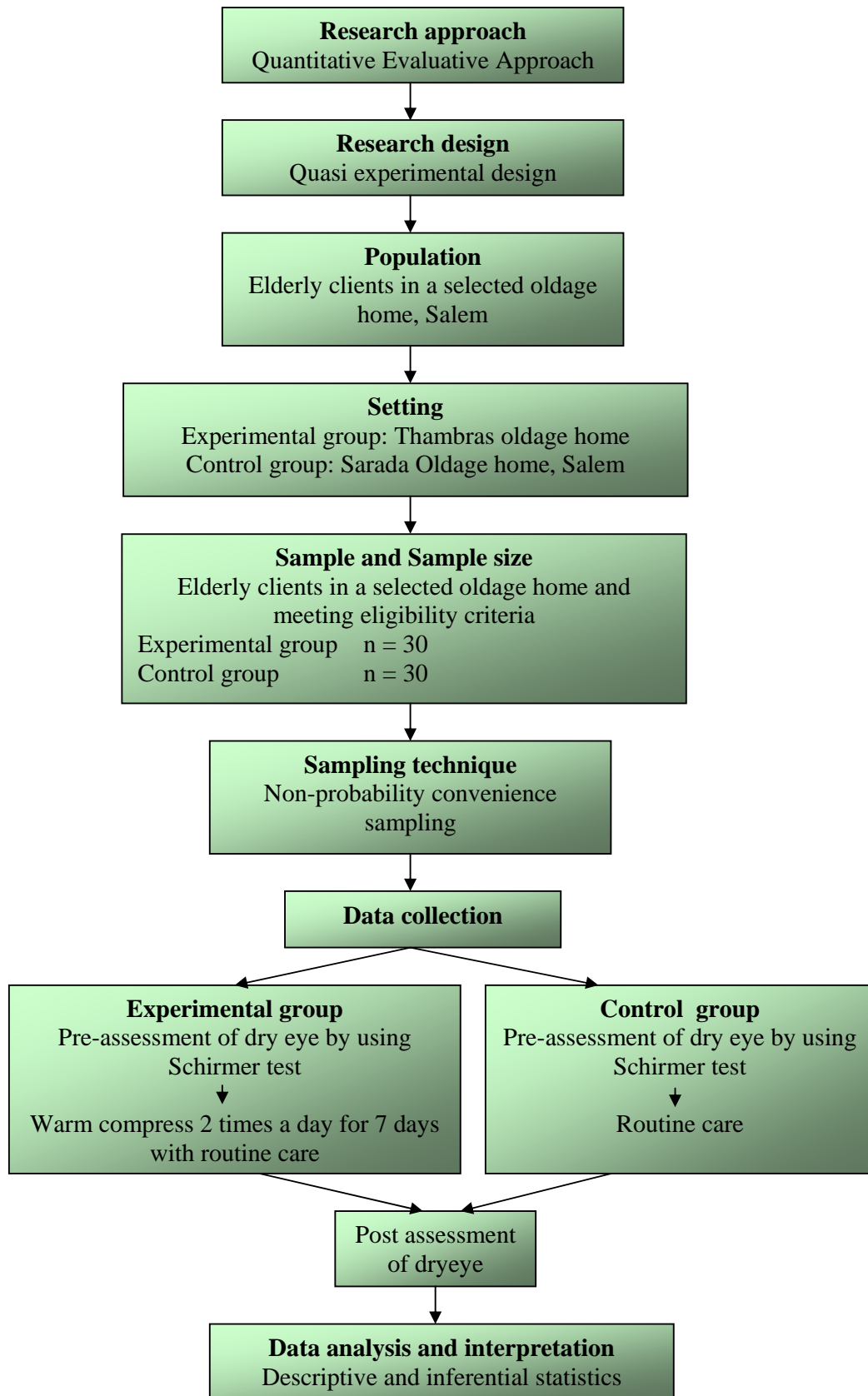


Figure -3.1: Schematic Representation of Research Methodology

Population

The population for this study was elderly clients in a selected oldage home, Salem. There was 10 private oldage home around Salem city.

Description of the Setting

The investigator had selected Thambras oldage home and Sarada oldage home to conduct this study. The oldage home is situated in the middle of the city which is 7 km from Sri Gokulam College of Nursing. The Thambras oldage home was selected for an experimental group and Sarada oldage home was selected for control group for this study. The total number of elderly clients in Thambras oldage home 74 and in Sarada oldage home 53 elderly clients. The investigator selected these setting for the availability of the sample and feasibility of the study.

Sampling**Sample:**

The sample for this study were elderly clients in Thambras and Sarada oldage home, Salem during the study period and those who meet the sampling criteria.

Sample size:

The sample size for this study was 60 elderly clients. Among them, 30 elderly clients were assigned to the experimental group and other 30 elderly clients were assigned to control group.

Sampling technique:

The elderly clients were selected through non-probability convenience sampling technique.

Criteria for sample selection:**Inclusion criteria:**

The clients who are,

- aged above 60 years
- male and female

- able to understand and speak Tamil
- willing to participate in this study

Exclusion criteria:

- The client undergone any eye surgery
- Foreign body present in eye
- Use of contact lenses
- Tear level less than 5mm

Variables

Independent variable: Warm compress

Dependent variable: Level of dry eye.

Description of the Tool

The tool was prepared by the investigator after an extensive study of the related literature and with the guidance of experts.

Section-A: Demographic variables

This section consists of demographic variables like age, sex, marital status, religion, habit of smoking, alcoholism and hobbies. The baseline data was collected by using structured interview schedule.

Section-B: Lacrimation assessment scale

Dry eye was measured by using Schirmer test and scoring was given according to Otto Schirmer’s classification on level of dry eye.

Dry eye category	Tear level
Normal	10 – 30mm
Mild dry eye	8 - 10mm
Moderate dry eye	5 - 8mm
Severe dry eye	<5 mm

Validity and Reliability

Validity

Validity of the tool was obtained from experts, 6 from the field of Nursing, one from the field of Medicine and one from the Ophthalmologist.

Reliability

The reliability of the tool was checked and was established by using interrater method $r' = 0.98$ which showed that the tool was reliable and was considered for proceeding.

Pilot Study

Pilot study was conducted from 27.06.11 to 03.07.11 in Vallalar oldage home, Kanthasaramam oldage home, Salem to findout the feasibility of the study. A formal permission was obtained from the concerned authority of the oldage home. Six elderly clients were selected by using convenience sampling technique. In this, 3 elderly clients were selected for experimental group in Vallalar oldage home, 3 elderly clients were selected for control group in Kanthasaramam oldage home. The collected data were analysed by using descriptive and inferential statistics. Finding of the pilot study revealed that the tool was practicable and feasible to conduct the study.

Method of Data Collection

Ethical consideration:

Written permission was obtained from the Manager of Thambras oldage home, and Sarada oldage home, Salem.

Informal consent obtained from the elderly clients.

Data Collection Procedure:

The data was collected from 11.07.11 to 07.08.11. On the first week elderly clients who fulfilled the inclusion criteria were selected from the oldage home by non

probability convenience sampling technique and their general information was collected by using structured interview schedule and their dry eye was measured by using Schirmer's test for both experimental and control group. In experimental group warm compress was applied on both eyes intermittently for 10 minutes morning and evening for 7 days. In control group warm compress was not applied.

Plan for Data Analysis:

The data were analysed by using both descriptive and inferential statistics. The data related to demographic variables were analysed by using descriptive measures (frequency, percentage) and dry eye among elderly clients will be analysed by using descriptive statistics (mean, standard deviation). The effectiveness of warm compress on dry eye was analysed by 't' test. The association between the dry eye with selected demographic variables was analysed by using chi-square test.

Summary:

This chapter dealt with research approach, research design, settings, population, sampling, criteria for sample selection, variables, description of the tool, validity and reliability, pilot study, data collection and planned for data analysis. The analysis and interpretation of the study are present in the following chapter.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of data collected to evaluate the effectiveness of warm compress on dry eye among elderly clients. The purpose of the analysis is to reduce the data to manageable and interpretable form, so that the research problem can be suited and tested. The collected data was tabulated, organized and analysed by using descriptive and inferential statistics.

Section-A:

Distribution of elderly clients according to their selected demographic variables in experimental and control group.

Section –B:

Distribution of elderly clients according to their pretest level of dry eye in experimental and control group.

Section-C:

- a) Comparison between the pretest and posttest score on the level of dry eye among elderly clients in experimental and control group.
- b) Comparison between the Mean, SD, mean difference of pretest and posttest scores on level of dry eye among elderly clients in experimental and control group.

Section-D: Hypothesis testing

- a) Effectiveness of warm compress on level of dry eye among elderly clients in experimental and control group.
- b) Association between the pretest level of dry eye (right eye) among elderly clients with their selected demographic variables in experimental and control group.
- c) Association between the pretest level of dry eye (left eye) among elderly clients with their selected demographic variables in experimental and control group.

Section-A

**Distribution of elderly clients according to their selected demographic variables
in experimental and control group.**

Table-4.1:

**Frequency and percentage of distribution of elderly clients according to their
demographic variables in experimental and control group.**

n=60

S. No	Demographic variables	Experimental group		Control group	
		f	%	f	%
1.	Age				
	a. 60 – 65 yrs	9	30	7	23.3
	b. 66 – 70 yrs	6	20	8	26.7
	c. 71 – 75 yrs	2	6.7	3	10
	d. > 76 yrs	13	43.3	12	40
2.	Sex				
	a. Male	14	46.6	11	36.6
	b. Female	16	53.4	19	63.4
3.	Marital status				
	a. Married	25	83.3	24	80
	b. Unmarried	3	10	3	10
	c. Widow/ Widower	2	6.7	3	10
4.	Habit of smoking				
	a. Yes	11	36.6	4	13.3
	b. No	19	63.4	26	86.7
5.	Habit of alcoholism				
	a. Yes	9	30	4	13.3
	b. No	21	70	26	86.7
6.	Hobbies				
	a. Watching television	25	83.3	14	46.6
	b. Reading books	5	16.7	13	43.3
	c. Music	-	-	1	3.4
	d. Gardening	-	-	2	6.7

The above table shows that in experimental group 13(43.3%) of them were in above 76 years of age, in control group 12(40%) were above 76 years of age. In experimental group 16(53.4%) were female and 19(63.3%) were female in control group. Both experimental and control group 25(83.3%) and 24(80%) were married. Both experimental and control group 19(63.4%) and 26(86.7%) were non smoker. In both experimental and control group 21(70%) and 26(86.7%) were not having the habit of alcoholism. In experimental group 25(83.3%) belong to watching television whereas in control group 14(46.6%) belongs to watching television.

Section –B

Distribution of elderly clients according to their pretest level of dry eye in experimental and control group

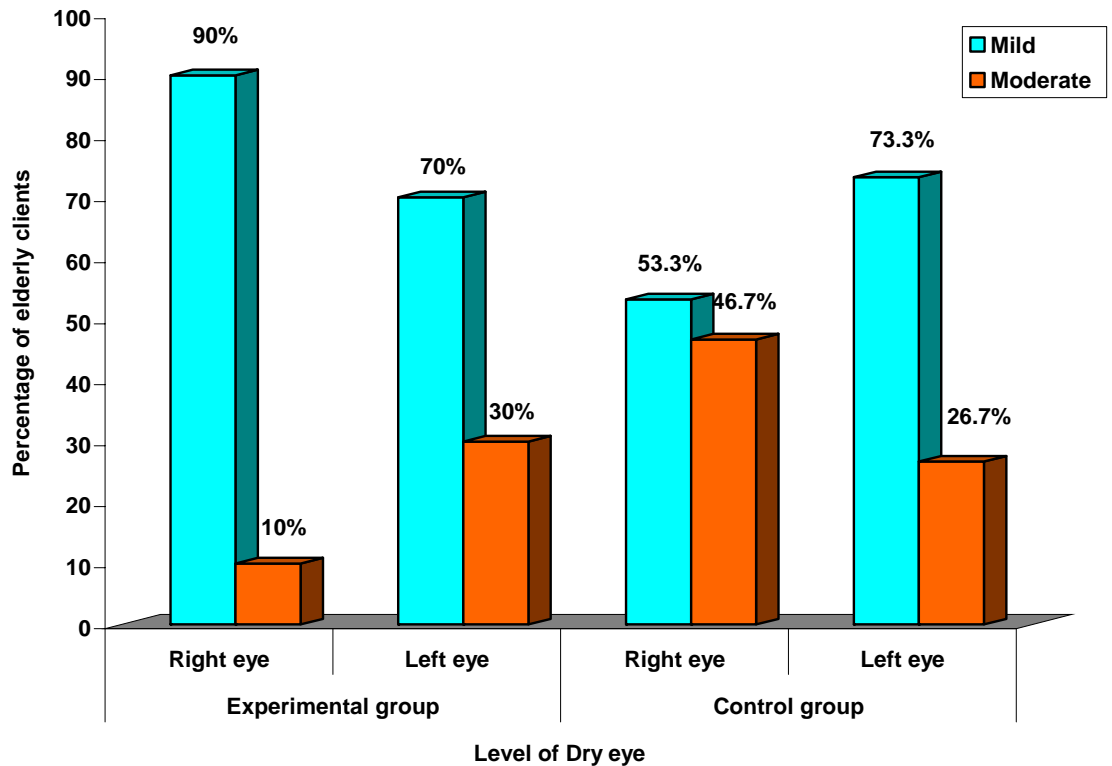


Figure-4.1: Percentage distribution of elderly clients according to their pretest level of dry eye in experimental and control group

The above figure shows that, in pretest in experimental group right eye 27(90%) of them belongs to mild dry eye, 3(10%) of them belongs to moderate dry eye, whereas in left eye 21(70%) of them belongs to mild dry eye, 9(30%) of them belongs to moderate dry eye.

In control group the right eye 16(53.3%) belongs to mild dry eye and 14(46.7%) belongs to moderate dry eye and left eye 22(73.3%) belongs to mild dry eye and 8(26.7%) belongs to moderate dry eye. It reveals in pretest most elderly clients having mild dry eye in experimental and control group.

Section-C

a) Comparison between the pretest and posttest score on the level of dry eye among elderly clients in experimental and control group

Table-4.2:

Frequency and percentage distribution of elderly clients according to pretest and posttest scores on level of dry eye in experimental and control group.

n=60

Total score	Experimental group (n=30)								Control group (n=30)							
	Right eye				Left eye				Right eye				Left eye			
	Pretest		Posttest		Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Normal	-	-	12	40	-	-	14	46.7	-	-	-	-	-	-	-	-
Mild dry eye	27	90	15	50	21	70	16	53.3	16	53.3	18	60	22	73.3	20	66.7
Moderate dry eye	3	10	3	10	9	30	-	-	14	46.7	12	40	8	26.7	10	33.3
Severe dry eye	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The above table shows that pretest, in experimental group Right eye 27(90%) had mild dry eye, 3(10%) belongs to moderate dry eye, whereas in Left eye 21(70%) had mild dry eye, 9(30%) had moderate dry eye. In posttest Right eye 12(40%) had normal eye, 15(50%) had mild dry eye and 3(10%) had moderate dry eye, whereas Left eye 14(46.7%) had normal eye and 16(53.3%) belongs to mild dry eye.

In control group pretest Right eye 16(53.3%) had mild dry eye, 14(46.7%) had moderate dry eye and Left eye 22(73.3%) had mild dry eye, 8(26.7%) belongs to moderate dry eye. In posttest Right eye 18(60%) had mild dry eye, 14(46.7%) had moderate dry eye and Left eye 20(66.7%) had mild dry eye, 10(33.3%) had moderate dry eye.

In experimental group, after warm compress in right eye 12(40%) and in left eye 14(46.6%) of them were return to normal eye, whereas in control group no changes in the dry eye level.

b) Comparison between the Mean, SD, mean difference of pretest and posttest scores on level of dry eye among elderly clients in experimental and control group

Table- 4.3:

Mean, standard deviation, mean difference and pretest and posttest scores on level of dry eye among elderly clients in experimental and control group

n=60

Group	Left eye			Right eye		
	Mean	SD	Mean difference	Mean	SD	Mean difference
Experimental group						
Pretest	8.16	1.06	2.84	8.33	0.52	1.73
Posttest	11	3.49		10.06	3.17	
Control group						
Pretest	8.13	0.80	0.23	7.53	1.01	0.17
Posttest	7.9	0.94		7.70	1.03	

The above table shows that in the experimental group (left eye) the pre and posttest mean, SD score was 8.16 ± 1.06 and 11 ± 3.49 respectively and the mean difference was 2.84. In the control group (left eye) pre and posttest mean, SD score was 8.13 ± 0.80 and 7.9 ± 0.94 respectively and the mean difference was 0.23.

In experimental (right eye) pre and posttest mean, SD score was 8.33 ± 0.52 and 10.06 ± 3.17 respectively and the mean difference was 1.73. In the control group (right eye) pre and posttest mean, SD score was 7.53 ± 1.01 and 7.70 ± 1.03 respectively and the mean difference was 0.17. The mean difference shows that dry eye was reduced in experimental group than in control group.

Section – D

Hypothesis testing

Effectiveness of warm compress on level of dry eye among elderly clients in experimental and control group

Table-4.4:

Mean, SD and ‘t’ test according to posttest score on level of dry eye among elderly clients in experimental and control group.

n=60

Group	Left eye			Right eye		
	Mean	SD	‘t’ test	Mean	SD	‘t’ test
Experimental group	11	3.49	4.15*	10.06	3.17	3.76*
Control group	7.9	0.94		7.70	1.03	

* Significant at $p < 0.05$ level; table value – 2.01; df - 58

The above table shows that in the experimental group left eye mean, SD score was 11 ± 3.49 and in control group left eye mean, SD score was 7.9 ± 0.94 respectively, ‘t’ test score was 4.15.

In experimental group right eye mean, SD score was 10.06 ± 3.17 and in control group mean, SD score was 7.70 ± 1.03 respectively, ‘t’ test score was 3.76. The calculate value was more than table value. Hence the research hypothesis H_1 is retained. It was evident that warm compress was effective in reducing the level of dry eye among elderly clients.

b) Association between the pretest level of dry eye (right eye) among elderly clients with their selected demographic variables in experimental and control group

Table-4.5:

Chi-square test on the level of dry eye (Right eye) among elderly clients with their selected demographic variables in experimental and control group.

n=60

S. No	Demographic variables	Experimental group (n=30)			Control group (n=30)		
		χ^2	Table value	df	χ^2	Table value	df
1	Age in years	13.4*	7.82	3	0.245	7.82	3
2	Sex	2.88	3.82	1	3.025	3.82	1
3	Marital status	4.15	5.99	2	1.96	5.99	2
4	Habit of smoking	5.74*	3.82	1	1.27	3.82	1
5	Habit of alcoholism	2.11	3.82	1	0.306	3.82	1
6	Hobbies	0.66	7.82	3	2.79	7.82	3

* Significant ($p < 0.05$)

The above table shows that there was significant association between the habit of smoking and age with dry eye in the experimental group at $p < 0.05$ level and in the control group there was no significant association with their selected demographic variables. Hence research hypothesis H_2 is retained for age and habit of smoking only.

c) Association between the pretest level of dry eye (left eye) among elderly clients with their selected demographic variables in experimental and control group

Table-4.6:

Chi-square test on the level of dry eye (Left eye) among elderly clients with their selected demographic variables in experimental and control group.

n=60

S. No	Demographic variables	Experimental group (n=30)			Control group (n=30)		
		χ^2	Table value	df	χ^2	Table value	df
1	Age in years	18.3*	7.82	3	0.602	7.82	3
2	Sex	0.06	3.82	1	1.02	3.82	1
3	Marital status	1.3	5.99	2	1.89	5.99	2
4	Habit of smoking	0.9	3.82	1	0.86	3.82	1
5	Habit of alcoholism	1.59	3.82	1	1.686	3.82	1
6	Hobbies	2.10	7.82	3	1.289	7.82	3

***Significant (p<0.05)**

The above table shows that there was a significant association between the age with dry eye in an experimental group at p<0.05 level. In the control group there was no significant association with the selected demographic variables. Hence research hypothesis H₂ is retained for age only.

Summary

This chapter dealt with data analysis and interpretation in the form of statistical values based on the objectives, frequency and percentage on the dry eye among elderly clients with their selected demographic variables was analysed. The 't' test was used to evaluate the effectiveness of warm compress on dry eye among elderly clients. The chi-square analysis was used to find out the association between the dry eye among elderly clients with their selected demographic variables.

CHAPTER V

DISCUSSION

This study was done to determine the effectiveness of warm compress on level of dry eye among elderly clients in selected old age homes, Salem.

Description of demographic profile

The demographic profile in experimental group, 13(43.3%) of them belongs to >76 years of age, 16(53.4%) were females, 25(83.3%) were married, 25(83.3%) were not smokers, 21(70%) were not alcoholic and 25(83.3%) of them were hobbies of watching television.

In control group 12(40%) were belongs to >76 years, 19(63.4%) were female, 24(80%) were married, 26(86.7%) were not smokers, 26(86.7%) were not alcoholic and 14(46.6%) of them were in the hobbies of watching television and reading books.

Assessment of level of dry eye among elderly clients in experimental and control group:

In pretest right eye 27(90%) clients had mild dry eye, 3(10%) clients had moderate dry eye whereas in left eye 21(70%) clients had mild dry eye, 7(30%) clients had moderate dry eye. In control group right eye 16(53.3%) clients had mild dry eye, whereas 14(46.7%) clients had moderate dry eye. In left eye 22(73.3%) clients had mild dry eye and 8(26.7%) clients had moderate dry eye.

The present study was supported by **Moss, 2000** dryeye is the most common condition which has the prevalence rate of 11% -17% in the general population and rates upto 29% in clinical optometry practices. The majority of the patients with dry eye have mild form of condition; 65% - 89% of them have mild dry eye, 12% -13% of them have moderate dry eye and 0% - 2% of them have severe dry eye.

The present study was supported by **Sahai and Malik, 2005** to evaluate that 92(18.4%) patients out of 500 patients have dry eye. Dry eye prevalence is more in the age of above 70 years (36.1%). It was significantly higher among females (22.8%) than in males (14.9%) more common in rural residents (19.6%) than in urban (17.5%) and highest among farmers and labourers (25.3%). The study reported that the prevalence of dry eye in Asian population is 6.5%, significantly higher in men compared to women (8.2% and 4.9% respectively) and decreased with age in men but not in women.

Researcher felt that the majority of elderly clients are more in mild dry eye category. A need was felt to provide warm compress to reduce the dry eye among elderly clients.

Effectiveness of warm compress on level of dryeye among elderly clients in experimental and control group:

In the experimental group right eye, the pretest mean, SD score was 8.33 ± 0.52 , posttest mean, SD score was 10.06 ± 3.17 , left eye pretest mean, SD score was 8.16 ± 1.06 , posttest mean, SD score was 11 ± 3.49 . In control group right eye, the pretest mean, SD score was 7.53 ± 1.01 , posttest mean, SD score 7.70 ± 1.03 , Left eye pretest mean, SD score was 8.13 ± 0.80 , posttest mean, SD score was 7.9 ± 0.94 . The 't' value in right eye 3.76 and left eye 4.15 which is significant at $P < 0.05$ level. Thus the difference formed in the mean score value were true difference. Hence the research hypothesis H_1 is retained. This shows that warm compress on level of dry eye were effective among elderly clients.

The present study was supported by the **Indarjit Walia, 2007** to find effectiveness of warm compress on level of dry eye among elderly clients. In this study the warm compress were applied two times a day (morning and evening) for 7

days. The study result shows that there was significant reduction in mild dry eye after warm compress among elderly clients in experimental group $t=3.307$ ($p<0.01$). The findings of the study correlates with the above study findings, that application of warm compress reduce the dry eye.

Associate the level of dry eye among elderly clients with their selected demographic variables

The pretest study findings reveal that there was significant association between the habit of smoking and age with dry eye (right eye) in the experimental group at $P<0.05$ level and in the control group there was no significant association with their selected demographic variables. Hence research hypothesis H_2 is retained for age and habit of smoking and there was a significant association between the age with dry eye (left eye) in an experimental group at $P<0.05$ level. In the control group there was no significant association with the selected demographic variables. Hence research hypothesis H_2 is retained for age only.

The present study was supported by, **Tong, (2010)** to findout symptomatic dryeye is an Asian population, 3280 of Malay persons aged between 40-80 years. The prevalence rate of symptomatic tear film dysfunction was 6.52. The prevalence was significantly higher in men compared to women. Factors significantly associated with symptomatic tear film dysfunction cigarette smoking and self reported difficulty in performing daily activities.

Summary

This chapter dealt with the discussion of the study with reference to the objective and supportive studies. All the three objectives have been obtained and the two research hypothesis H_1 and H_2 was retained in the experimental group and H_2 rejected in the control group.

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATION AND RECOMMENDATIONS

This chapter consists of four sections. In the first two sections consists of summary, conclusion and the last two sections consists of the implication for nursing practice.

Summary

The main focus of the study was to evaluate the effectiveness of warm compress on dry eye among elderly clients. A quasi experimental study was conducted in Saradha Oldage Home and Thambaras Oldage Home, Salem and 60 clients were selected irrespective of their age, sex, marital status and hobbies. Non probability convenience sampling technique was adopted for this study and 30 elderly clients for experimental group and 30 elderly clients for control group were assigned. The general information was collected by structured interview schedule. The dry eye level was measured by using Schirmer's test, to apply warm compress for 7 days and posttest was done on 8th day by measuring the dry eye for both the group.

The baseline data was tabulated by formulating frequency table. The dry eye was assumed by using descriptive statistics. The effectiveness of warm compress was evaluated by inferential statistics 't' test. The chi-square analysis was done to associate the dry eye with their selected demographic variables of elderly clients.

The Major Findings of the Study

- The demographic variables of the elderly clients in experimental group 13(43.3%) of them were in >76 years of age where as in the 12(40%) of them were in >76 years.
- Majority were 16(53.4%) females in the experimental and in control group 19(63.4%) were females.

- In experimental group 25(83.3%) were married and control group 24(80%) were married.
- Nearly 25(83.3%) were habit of smoking and in control group 26(86.7%) were having habit of smoking.
- In experimental group 21(70%) were habit of alcoholism and in control group 26(86.7%) were habit of alcoholism.
- Majority 25(83.3%) were having hobbies of watching television in experimental group, about 14(46.6%) were having hobbies of watching television in control group.
- In percentage distribution of elderly clients according to their pretest dry eye majority of them had mild dry eye in experimental and control group.
- The pretest and posttest mean, SD (Left eye) was 8.16 ± 1.06 and 11.0 ± 3.49 and mean difference was 2.84, (Right eye) was 8.33 ± 0.32 and 10.06 ± 3.17 and mean difference was 1.73 in experimental group and in control group (Left eye) 8.13 ± 0.80 and 7.9 ± 0.94 and mean difference was 0.23 (Right eye) 7.53 ± 1.01 and 7.70 ± 1.03 and mean difference was 0.17. The mean difference shows that dry eye was reduced in experimental group than in control group.
- The 't' test value (Left eye) 4.15, (Right eye) 3.76 was greater than the tabulated value (2.01) at $P < 0.05$ level. The warm compress was effective in reducing dry eye. Hence hypothesis H_1 is retained.
- There was significant association between the dry eye (Right eye) with age and habit of smoking at $P < 0.05$ level in experimental group.
- There was significant association between the dry eye (Left eye) with age at $P < 0.05$ level in experimental group. Hence H_2 is retained in experimental group and control group was rejected.

Conclusion

This study was done to evaluate the effectiveness of warm compress on dry eye among elderly clients in a selected hospital, Salem. The result of this study showed that the warm compress was effective among elderly clients in reducing dry eye in experimental group. There is significant association between dry eye with age and habit of smoking in experimental group.

Implications

The findings of this study have the following implications in the various areas of nursing service, nursing education, nursing administration and nursing research.

Nursing service:

- The nurse understands the importance of warm compress as an physical to pharmacological therapy in nursing practice.
- Warm compress can be practiced as a routine nursing care.
- Nurses can use warm compress as simple touch which enhance caring, communication and improve rapport with elderly clients.
- Nurses should use warm compress as an intervention to promote sleep and well being of elderly clients.

Nursing education

- Nurse educators should encourage the nursing students to know about the measure which reduce dry eye among elderly clients.
- The nurse educator should involve the concept of physical and complementary therapy in nursing profession.
- Nurse educators should provide adequate training to the students regarding warm compress.

- In service education programme should be conducted for nursing personnel and help nurses to gain knowledge on reduce dry eye through warm compress.
- Educators can encourage the students to bring out innovative and creative ideas pertaining management of dry eye.

Nursing administration

- The administrator should organize in service education programme on physical therapy for the medical personals.
- The administrator should provide opportunity for nurses to attend training programme on warm compress.
- The administrator should arrange client education services an integral part of high quality and cost effect care.
- The nursing administration should see that the health promotion aspect is included in the nursing care.
- Public programmes can be arranged regarding the importance of cost effective measures on dry eye management.

Nursing research

- The researcher should encourage further research on warm compress on dry eye.
- The investigator should disseminate the findings through conferences, seminars, publication in professional, national and international journal and the world wide web.
- The findings of the study help to expand the scientific body of professional knowledge upon which further research can be conducted.
- The study can be a baseline to build upon future studies.

Recommendations

- A similar study can be conducted for a large group.
- A similar study can be conducted in various setting to identify the factors influence dryeye.
- A similar study can be done with software professionals.
- A similar study can be done with adjunctive therapy.
- Administration of warm compress can be studied more significantly and used as specific nursing intervention.
- Comparative study can be done on the effectiveness of warm compress versus pharmacological management on dry eye.

Summary

This chapter dealt with summary, conclusion, implications for nursing practice and recommendations.

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ANNEXURE – A

LETTER SEEKING PERMISSION TO CONDUCT A RESEARCH PROJECT

From

Mr. M.Paul Dinakaran,
Final Year, M.Sc., (N)
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

To

The Principal,
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

Respected Sir/Madam,

Sub: Permission to conduct research project - request- reg.

I, **M.Paul Dinakaran**, Final Year M.Sc., (Nursing) student of Sri Gokulam College of Nursing, is conducting research project in partial fulfilment of Tamil Nadu Dr.M.G.R. Medical University, Chennai, as a part of the requirement for the award of M.Sc., (Nursing) Degree.

Topic: “A Study To Assess The Effectiveness Of Warm Compress On Level Of Dry Eye Among Elderly Clients At Selected Old Age Home In Salem”.

I request you to kindly do the needful.

Thanking you.

Date : 13.07.2011

Place : Salem

Yours sincerely,

(M.PAUL DINAGARAN)

ANNEXURE – B
LETTER GRANTING PERMISSION TO CONDUCT A RESEARCH
PROJECT



SRI GOKULAM COLLEGE OF NURSING

3/836, Periyakalam, Neikkarapatti, Salem - 636 010.

Phone : 0427 - 6544550 Fax : 0427 - 2270200, 2447077

Email : sgcon2001@yahoo.com, sgcon2001@gmail.com

Date :

1

From

Mr.M.Pauldhinakaran,
II Year M.Sc., (N)
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

To

The Manager,
Thambaras old age home,
Chinnatirupathi.

Through

The Principal,
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

Respected Sir/Madam,

Sub: Permission to conduct research project – request – reg.

I, **M.Pauldhinakaran**, II Year M.Sc., (Nursing) student of Sri Gokulam College of Nursing, is to conduct a research project which is to be submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai in partial fulfillment for the award of M.Sc. (Nursing) Degree.

Topic: "A Study to Assess the Effectiveness of Warm Compress on Dry Eye among Elderly people at selected Old Age Home in Salem".

Kindly permit to conduct a research project in Thambaras old age home, Salem from 11-7-11 to 7-8-11 with adherence to the old age home policies and regulations.

Thanking you,

Yours Obediently,

Place : Salem

Date : 11.7.11

*Madam,
Kindly do the needful.*

(Signature)
11/7/11

PRINCIPAL
Sri Gokulam College of Nursing
SALEM – 636 010.



Permission given -

(Signature)
SRI RAMAN



SRI GOKULAM COLLEGE OF NURSING

3/836, Periyakalam, Neikkarapatti, Salem - 636 010.

Phone : 0427 - 6544550 Fax : 0427 - 2270200, 2447077

Email : sgcon2001@yahoo.com, sgcon2001@gmail.com

Date :

From

Mr.M.Pauldhinakaran,
II Year M.Sc., (N)
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

To

The Manager,
Saradha old age home,
Salem.

Through

The Principal,
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

Respected Sir/Madam,

Sub: Permission to conduct research project – request – reg.

I, M.Pauldinakaran, II Year M.Sc., (Nursing) student of Sri Gokulam College of Nursing, is to conduct a research project which is to be submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai in partial fulfillment for the award of M.Sc. (Nursing) Degree.

Topic: "A Study to Assess the Effectiveness of Warm Compress on Dry Eye among Elderly people at selected Old Age Home in Salem".

Kindly permit to conduct a research project in Sarada old age home, Salem from 11-7-11 to 7-8-11 with adherence to the old age home policies and regulations.

Thanking you,

Yours Obediently,

Place : Salem

Date : 11-7-11

*Sir/Madam,
Kindly do the needful.
11/7/11*

PRINCIPAL
Sri Gokulam College of Nursing
SALEM - 636 010.

*Sunny
12/7/11*

ANNEXURE - C

**LETTER REQUESTING OPINION AND SUGGESTIONS OF EXPERTS FOR
CONTENT VALIDITY OF THE RESEARCH TOOLS**

From

Mr. Paul Dinakaran.M
Final Year M.Sc., (N)
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

To,

Respected Sir/ Madam,

**Sub: Requesting opinion and suggestions of experts for establishing
content validity of the tools.**

I, **Mr. Paul Dinakaran. M**, a Final Year M.Sc., (Nursing) student of Sri Gokulam College of Nursing, Salem. I have selected the topic mentioned below for the research project to be submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai for the partial fulfilment of Master's Degree in Nursing.

**Topic: A Study To Assess The Effectiveness Of Warm Compress On
Level Of Dry Eye Among Elderly Clients At Selected Old Age Home In Salem".**

I wish to request you to kindly validate the tool and give your expert opinion for necessary modification. I will be grateful to you for this.

Thanking you

Yours sincerely,

Place : Salem

Date :

(Mr. Paul Dinakaran.M)

Enclosed:

1. Certificate of validation
2. Criteria checklist of evaluation of tool
3. Tool for collection of data
4. Procedure

ANNEXURE - D

TOOL FOR DATA COLLECTION

SECTION – I: DEMOGRAPHIC VARIABLES

Instructions

The investigator observe and questions wherever necessary and place a tick mark (✓) against the correct option given below.

Sample No:

1. Age in years

- a) 60 – 65 years ()
- b) 66 – 70 years ()
- c) 71 – 75 years ()
- d) >76 years ()

2. Sex

- a) Male ()
- b) Female ()

3. Marital status

- a) Married ()
- b) Unmarried ()
- c) Widow/ widower ()

4. Habit of smoking

- a) Yes ()
- b) No ()

5. Habit of alcoholism

- a) Yes ()
- b) No ()

6. Hobbies

- a) Watching television ()
- b) Reading books ()
- c) Listening music ()
- d) Gardening ()

LACRIMATION ASSESSMENT SCALE

SCHIRMER'S TEST

Purpose:

To identify the level of tear secretion before and after the warm compress.

Instruction:

Schirmer's test determines whether the eye produces enough tears to keep it moist. In this study 5mm measured folded tear strip is kept under the lower eye lids mid way between the middle and outer canthus of the eyelid for 5 min to measure the wetness of strip in order to assess tear level.

Variable	Experimental Group		Control Group	
	Pretest	Posttest	Pretest	Posttest
Tear level				

Score key:

Normal	10 - 30 mm
Mild dry eye	8 – 10 mm
Moderate dry eye	5 – 8 mm
Severe dry eye	< 5mm

PROCEDURE

Definition:

Warm compress procedure in which the clean cotton cloth dipped into 45 c hotwater, squeezed ,folded and applied over the closed eyelids for 10 min.

Purpose:

- Reduced the eye pain and irritation
- Reduced the dryness in the eye
- Increases the tear level

General instruction:

- Explain the procedure to the person
- Follow clean technique procedure
- Prepare the person

Preparation of articles:

Articles	Rationales
Bowl with hotwater	To promote moisture
Clean cloth - 2	To provide pressure
Bowl with gauze piece - 2	To wipe eye lid area

Procedure:

White cotton cloth (50cm and 50cm) saturated with 45°C heated water and the excess water from the cloth was removed and folded so that it measured approximately 12.5cm and 6cm. Study participants were instructed to hold the warm compress over the closed eye lids and use the minimum pressure that would ensure uniform contact with eyelids. A new compress was applied to the subjects every 2 minutes for 10 minutes to maintain temperature. Study participants were monitored

throughout procedure, ensuring that warm compress was positioned correctly and that no rubbing or rotating motions were produced during the applications. During warm compress the researcher was assessed for any side effects of warm compress.

After care:

- Clean the eye with wet gauze
- Make the person comfortable
- Replace articles
- Document procedure

தனிநபர் பற்றிய விபரம் அறியும் படிவம்

நோக்கம்:

இந்த படிவம் பங்கு பெறுவோரின் வயது, பாலினம், தொலைக்காட்சியை பயன்படுத்தும் முறை, புகைப்பிடிக்கும் பழக்கம், மது அருந்தும் பழக்கம் போன்றவற்றை கண்டறிய உதவுகிறது.

இந்த கேள்விகளுக்கான அனைத்து விடைகளையும் ஆராய்ச்சியாளரால் நிரப்பப்படும். உங்கள் பதில்களை தெளிவாகவும், ஒளிவுமறைவின்றியும் தெரிவிக்கவும். உங்கள் பதில்கள் பத்திரமாக பாதுகாக்கப்படும்.

மாதிரி எண்:

1. வயது (வருடங்களில்)

அ) 60 - 65 ()

ஆ) 66 - 70 ()

இ) 71 - 75 ()

ஈ) 76 வயதிற்கு மேல் ()

2. பாலினம்

அ) ஆண் ()

ஆ) பெண் ()

3. திருமணத்தகுதி

அ) திருமணமானவர் ()

ஆ) திருமணமாகாதவர் ()

இ) விதவை ()

4. புகைப்பிடிக்கும் பழக்கம் உண்டா?

அ) ஆம் ()

ஆ) இல்லை ()

5. மது அருந்தும் பழக்கம் உண்டா?

அ) ஆம் ()

ஆ) இல்லை ()

6. பொழுதுபோக்கு?

அ) தொலைக்காட்சி பார்த்தல் ()

ஆ) புத்தகம் படித்தல் ()

இ) இசையினை கேட்டல் ()

ஈ) தோட்டக்கலை ()

ANNEXURE – E
CERTIFICATE OF VALIDATION

This is to certify that the tool developed by **Mr.Paul Dinakaran.M**, Final year M.Sc. Nursing student of Sri Gokulam College of Nursing, Salem (affiliated to Dr.M.G.R. Medical University) is validated and can proceed with this tool and content for the main study entitled **“A Study To Assess The Effectiveness Of Warm Compress On Level Of Dry Eye Among Elderly Clients At Selected Old Age Home In Salem”**.

Signature with Date

ANNEXURE-F

LIST OF EXPERTS VALIDATED THE TOOL AND CONTENT

1. **Dr.Mrs.K.Selvakumari, M.D.,**
Consultant Physician,
Sri Gokulam Hospital,
Salem.
2. **Dr.T.S.Vasudarini, M.S., D.O.,**
Ophthalmologist Department,
Sri Gokulam Hospital,
Salem.
3. **Mrs.Pushpalatha, M.Sc(N), Ph.D.,**
Assistant Professor,
Shanmuga College of Nursing,
Salem.
4. **Mrs..Anuradha, M.Sc(N), Ph.D.,**
Associate Professor,
PSG College of Nursing,
Coimbatore.
5. **Mrs.Geetha, M.Sc(N),**
Associate professor,
Vivekanantha College of Nursing,
Erode.
6. **Mrs.Lakshmi Prabha, M.Sc(N),**
Associate Professor,
Vinayaka Mission College of Nursing,
Salem.
7. **Mrs. Sumathi, M.Sc(N),**
Assistant Professor,
Vinayaka Mission College of Nursing,
Salem.


ANNEXURE - G

CERTIFICATE OF EDITING

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled “**A Study To Assess The Effectiveness Of Warm Compress On Level Of Dry Eye Among Elderly Clients At Selected Old Age Home In Salem.**” by **Mr.Paul Dinakaran. M**, It has been checked for accuracy and correctness of English language used in presenting the paper is lucid, unambiguous free of grammatical and spelling errors and is apt for the purpose

Signature:


Mrs. C.JENNIFER PUSHPALATHA
M.A.,M.Ed.,M.Phil.P.hd.,
B.T. Assistant in English,
P.U.M. School, M.G.R. Nagar,
Pernambut - 635 810.

ANNEXURE – H
PHOTOS



RESEARCHER PROVIDING WARM COMPRESS



RESEARCHER ASSESSING THE LEVEL OF DRY EYE