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A study to assess the effect of bates therapy on common eye problems among elderly residing in selected old age homes

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Abstract

Visual problems such as double vision, dry eyes, eye discharge, and eye pain are common among elderly and can lead to reduced quality of life. Bates Therapy emphasizes ocular relaxation and natural vision improvement through techniques such as palming, sunning, blinking, and shifting. Effect of Bates Therapy on common eye problems was studied among elderly. Quasi-experimental study was conducted among 30 elderly who were selected by simple random sampling and assigned equally to intervention (n = 15) and control (n = 15) groups. Study group received Bates Therapy for 20 minutes daily over four weeks. Structured eye problem assessment checklist and visual comfort rating scale used and data analysed using descriptive and inferential statistics. Results indicated a significant reduction in the frequency and severity of common eye problems in intervention group (p<0.05). Bates Therapy is an effective, simple, and low-cost nursing intervention that can reduce eye discomfort and enhance visual well-being among elderly.

Keywords: Bates therapy, double vision, dry eyes, eye pain, elderly, old age homes

Introduction

Vision is one of the most vital senses influencing independence, mobility, and quality of life, particularly in the elderly population. As people age, visual changes become one of the most common health issues, profoundly affecting quality of life, mobility, and psychological wellbeing. According to the World Health Organization (2023) [1], approximately 2.2 billion people worldwide live with vision impairment or blindness, and more than 65% are aged 60 years and above. Common age-related eye problems include double vision, dry eyes, eye discharge, and eye pain which often lead to dependency and reduced participation in daily activities.

Elderly individuals residing in old age homes are particularly vulnerable due to limited access to ophthalmologic care, poor lighting, inadequate nutrition, and low awareness of eye health. These factors can exacerbate visual impairment, resulting in decreased autonomy, social isolation, and emotional distress. Therefore, implementing simple, safe, and cost-effective interventions to preserve visual function is a critical component of geriatric care.

Bates Therapy, developed by Dr. William H. Bates in 1920, is a non-pharmacological approach that emphasizes eye relaxation and natural vision habits. The therapy includes exercises such as palming, sunning, blinking, shifting, swinging, and visualization, which aim to relieve ocular muscle tension, enhance blood circulation, and restore visual efficiency. Although its scientific foundation remains debated in mainstream ophthalmology, several nursing and community based studies have shown improvements in both subjective comfort and visual acuity following regular practice.

Studies by Sheelavathi et al. (2016) [2] and Sajeena et al. (2020) [3] reported significant enhancement in visual acuity among elderly participants after 3–4 weeks of Bates therapy, indicating its potential as a simple, low-cost, and non-invasive strategy for managing mild vision problems in institutionalized elders. In such settings, nurses play a pivotal role in promoting ocular health through structured vision enhancement programs.

Need for the Study

Visual problems are among the most prevalent health issues affecting the elderly and significantly impact their independence, mobility, and quality of life. According to the World Health Organization (2023) [1], over 2.2 billion

people globally experience vision impairment or blindness, with nearly 65% aged 60 years and above. In India, age-related visual problems remain a major cause of disability among older adults. Common ocular complaints such as double vision, dry eyes, eye discharge, and eye pain are frequently reported in institutionalized elderly due to poor lighting, inadequate hygiene, nutritional deficiencies, and lack of regular ophthalmologic care.

Although the National Programme for Control of Blindness and Visual Impairment (NPCBVI) has expanded eye-care services, elderly residents in old age homes, especially in Tamil Nadu and semi-urban districts like Namakkal, often remain underserved and lack access to affordable, preventive eye health programs.

Bates Therapy, a non-pharmacological approach based on ocular relaxation and visual training through exercises such as palming, sunning, blinking, and shifting, offers a simple and cost-effective method to alleviate eye strain, dryness, and discomfort. Studies by Sheelavathi et al. (2016) [2] and Sajeena et al. (2020) [3] have demonstrated improvement in visual comfort and reduction in eye-related complaints among elderly participants following regular Bates therapy practice.

Therefore, the present study is proposed to evaluate the effect of Bates Therapy on common eye problems among elderly residing in selected old age homes in Namakkal District, to establish an evidence-based, low-cost intervention that promotes visual comfort and well-being in later life.

Statement of the Problem

A study to assess the effect of Bates Therapy on common eye problems (double vision, dry eyes, eye discharge, and eye pain) among elderly residing in selected old age homes in Namakkal District, Tamil Nadu.

Objectives

1. To evaluate the level of common eye problems among elderly before and after the administration of Bates Therapy in the experimental group and routine care in the control group.
2. To associate the pre-test scores of common eye problems with selected demographic variables such as age, gender, duration of stay in the old age home, and presence of chronic illness.

Hypothesis

RH: There will be a significant difference between the pre-test and post-test scores of common eye problems among elderly in the experimental group following Bates Therapy.

Materials and Methods

Research Approach and Design

A quasi-experimental approach with a pre-test and post-test control group design was adopted to assess the effectiveness of Bates Therapy on common eye problems among elderly.

Setting of the Study

The study was conducted in selected old age homes in Namakkal District, Tamil Nadu, which provide residential care for elderly individuals.

Population

The target population consisted of elderly individuals aged 60 years and above residing in selected old age homes.

Ample Size and Sampling Technique

A total of 30 elderly participants who met the inclusion criteria were selected using simple random sampling. The participants were equally divided into:

- Experimental group (n = 15) – received Bates Therapy.
- Control group (n = 15) – received routine care only.

Inclusion Criteria

- Elderly individuals aged 60 years and above.
- Residing in the selected old age homes for at least 6 months.
- Willing to participate and able to perform simple eye exercises.
- Presenting with one or more of the following: double vision, dry eyes, eye discharge, or eye pain.

Exclusion Criteria

- Elderly with severe visual impairment, blindness, or active eye infections.
- Those with recent eye surgery or under ophthalmologic treatment.
- Individuals with cognitive impairment affecting communication or participation.

Description of the Intervention (Bates Therapy)

The Bates Therapy consisted of a structured eye exercise program including:

1. **Palming:** Covering eyes with palms to relax ocular muscles.
2. **Sunning:** Gentle exposure of closed eyes to sunlight to improve circulation.
3. **Blinking:** Rhythmic blinking to reduce dryness and strain.
4. **Shifting and Swinging:** Moving gaze smoothly to enhance flexibility and coordination. Each session lasted for 20 minutes daily, 5 days per week, for 4 weeks, under the supervision of the investigator. The control group received only routine eye care and daily activities provided by the institution.

Tools for Data Collection

1. **Demographic Data Sheet:** Age, gender, duration of stay, education, and health conditions.
2. **Structured Eye Problem Assessment Checklist:** To assess symptoms of double vision, dry eyes, eye discharge, and eye pain.
3. **Visual Comfort Rating Scale:** to measure the level of discomfort before and after intervention.

Data Collection Procedure

- **Pre-test:** Assessment of eye problems was done for both experimental and control groups on Day 1.
- **Intervention:** Bates Therapy was administered to the experimental group for 4 weeks.
- **Post-test:** Conducted on Day 28 using the same assessment tools for both groups.

Data Analysis: Data were analyzed using descriptive and inferential statistics:

Ethical Considerations

- Permission was obtained from the Institutional Ethics Committee.
- Written informed consent was taken from all participants.
- Confidentiality, privacy, and the right to withdraw at any stage were ensured.

Results

Table 1: Frequency and Percentage Distribution of Selected Demographic Variables of Elderly Participants (N = 30)

Demographic Variable	Category	Experimental Group (n = 15)	Control Group (n = 15)
Age (in years)	60–65	4 (26.7%)	3 (20.0%)
	66–70	6 (40.0%)	5 (33.3%)
	71–75	3 (20.0%)	4 (26.7%)
	76 & above	2 (13.3%)	3 (20.0%)
Gender	Male	7 (46.7%)	8 (53.3%)
	Female	8 (53.3%)	7 (46.7%)
Duration of Stay in Old Age Home	< 1 year	2 (13.3%)	1 (6.7%)
	1–3 years	7 (46.7%)	8 (53.3%)
	> 3 years	6 (40.0%)	6 (40.0%)
Educational Status	Illiterate	4 (26.7%)	5 (33.3%)
	Primary	6 (40.0%)	6 (40.0%)
	Secondary & above	5 (33.3%)	4 (26.7%)
Existing Health Problems	Hypertension	6 (40.0%)	5 (33.3%)
	Diabetes mellitus	4 (26.7%)	4 (26.7%)
	Musculoskeletal problems	3 (20.0%)	4 (26.7%)
	None	2 (13.3%)	2 (13.3%)

As shown in table 1, majority of participants (36.7%) were aged between 66–70 years, with an equal proportion of males and females (50%). Half of the participants (50%) had been residing in old age homes for 1–3 years, and 40% had a primary level of education. Common existing health conditions included hypertension (36.7%) and diabetes mellitus (26.7%).

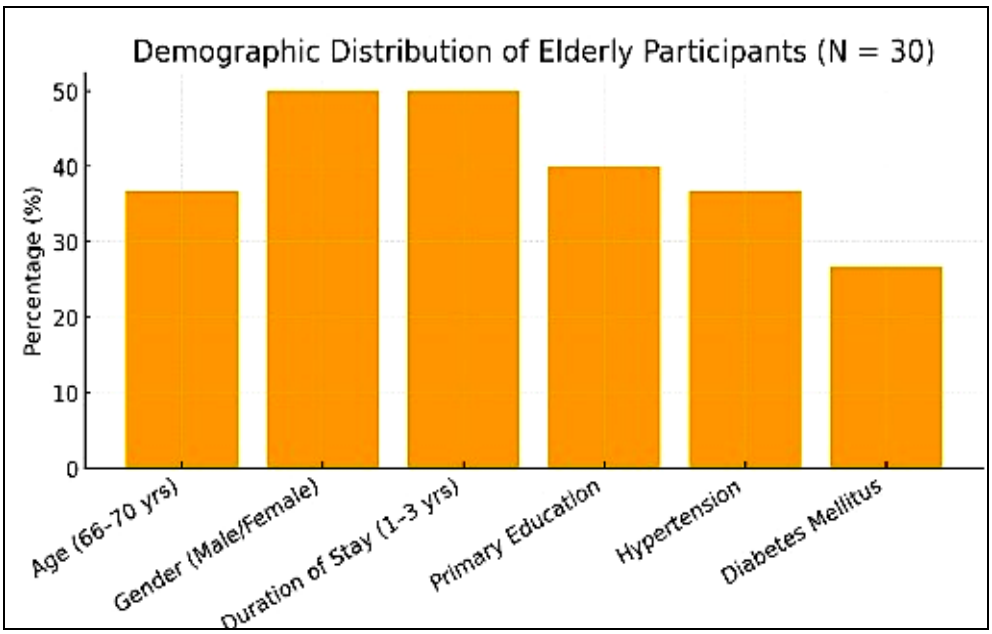

Fig 1: Demographic distribution of study participants

Table 2: Mean Dimension-wise Scores of Experimental and Control Groups in the Pre-test (N = 30)

Dimensions of Common Eye Problems	Experimental Group (n = 15)	Control Group (n = 15)
Double Vision	2.8±0.76	2.6±0.81
Dry Eyes	2.5±0.83	2.4±0.69
Eye Discharge	2.7±0.88	2.8±0.74
Eye Pain	2.4±0.84	2.1±0.91
Overall Mean Score	10.4±2.15	9.9±2.06

Table 3: Mean Dimension-wise Scores of Experimental and Control Groups in the Post-test (N = 30)

Dimensions of Common Eye Problems	Experimental Group (n = 15)	Control Group (n= 15)	Mean Difference	t-value	p-value	Inference
Double Vision	1.5±0.63	2.4±0.81	0.9	3.21	0.003**	Significant
Dry Eyes	1.3±0.56	2.5±0.69	1.2	4.02	0.001***	Highly Significant
Eye Discharge	1.4±0.72	2.7±0.74	1.3	4.15	0.001***	Highly Significant
Eye Pain	1.6±0.61	2.3±0.91	0.7	2.86	0.008**	Significant
Overall Mean Score	5.8±1.94	9.5±2.01	3.7	5.62	0.001*	Highly Significant

Table 5: Comparison of Pre-test and Post-test Mean Scores of Common Eye Problems Between Experimental and Control Groups (N = 30)

Group	Test	Mean SD	Mean Difference	t-value	p-value	Inference
Experimental (n = 15)	Pre-test	10.4± 2.15	4.6	6.42	0.001***	Significant
	Posttest	5.8 ± 1.94				
Control (n = 15)	Pre-test	9.9 ± 2.06	0.4	1.02	0.318	Not significant
	Posttest	9.5 ± 2.01				

The mean post-test score of common eye problems in the experimental group (5.8±1.94) was markedly lower than the pre-test score (10.4±2.15), showing a mean reduction of 4.6 points. This difference was found to be statistically significant (t = 6.42, $p<0.001$), indicating a substantial improvement in eye health following Bates Therapy.

In contrast, the control group showed no significant change between pre-test (9.9±2.06) and post-test (9.5±2.01) scores ($p>0.05$).

These findings suggest that Bates Therapy was effective in reducing symptoms of common eye problems (double vision, dry eyes, eye discharge, eye pain) among elderly residents of old age homes.

Conclusion

The findings of this study revealed that Bates Therapy was highly effective in reducing common eye problems such as double vision, dry eyes, eye discharge, and eye pain among elderly individuals residing in old age homes. The post-test mean scores in the experimental group showed a significant decrease compared to the control group, confirming the positive impact of regular Bates eye exercises on ocular comfort and function. The results emphasize that simple, non-pharmacological, and cost-effective interventions like Bates Therapy can play a crucial role in promoting eye health, independence, and quality of life among older adults. Bates Therapy, when practiced under guidance, can serve as a complementary approach to routine geriatric care, especially in settings where access to specialized ophthalmic services is limited.

Recommendations

Based on the study findings, the following recommendations are made:

1. **Implementation in Geriatric Care:** Bates Therapy may be introduced as part of routine health promotion activities in old age homes to enhance ocular health and comfort among residents.
2. **Nursing and Community Practice:** Nurses and community health workers can be trained to teach and supervise Bates eye exercises for elderly individuals.
3. **Health Education Programs:** Regular awareness and eye care education sessions can be organized for caregivers and elderly residents to prevent and manage common age-related eye issues.
4. **Further Research**

- Future studies with larger sample sizes and longer follow-up periods are recommended to validate the long-term effectiveness of Bates Therapy.
- Comparative studies with other eye relaxation or yoga-based techniques could also be explored.

5. Policy Implications

Integrating low-cost vision care programs such as Bates Therapy into geriatric health policies could support healthy ageing and reduce preventable visual impairment in institutionalized elderly populations.

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