



PREPARATION AND EVALUATION OF HERBAL EYE MASK USING GRAPES SEED, ALOE VERA AND ISABGOL FOR REMOVING DARK CIRCLE AND COMPUTER VISION SYNDROME(CVS)

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ABSTRACT

Computer Vision Syndrome (CVS) is a collection of symptoms related to eye disorders due to the use of computer-based digital devices. So considerable safety is needed against injured caused by exposure to blue light by digital devices Grapes seed are carotenoid that contain antioxidants so that they reduce inflammation. The aims of this research is to provide a topical preparation in the form of a herbal eye mask grapes seeds, isabgol and aloe vera which is useful for reduce Computer Vision Syndrome (CVS) and Dark Circle. Blue light a high energy short wavelength light is injure your eyes, sensitive cells in the retina and optic nerve cells behind the eyeball. In addition to protect watching and using Computer, mobile, and any listlessness. Herbal eye mask inventive skincare product designed to damage skin around the eyes. These eye mask natural consist of a mix of natural herb, isolations, extracts and other botanical ingredients known for their cool relaxing and antioxidant properties. The use of grapes seeds which contain antioxidant in control Computer Vision Syndrome (CVS) is formulated into a preparation herbal eye mask. The herbal infusion offers a through approach to eye care by essay to reduce Computer Vision Syndrome, dark circle, and puffiness. This is natural formulation. The focus of this research is obtain a preparation of herbal eye mask that can overcome Computer Vision Syndrome (CVS). This article aims to develop an herbal eye mask using black grapes seeds, aloe vera and isabgol for removing dark circle and protective essay against computer vision syndrome (CVS).

KEYWORD: Computer Vision Syndrome (CVS), Dark Circle, Black grapes seeds, Isabgol, and Aloe vera, Herbal eye mask.

INTRODUCTION

Since COVID-19 epidemic has had a healthy impact on society. One of primary impacts that affects the group is the large-scale social restriction that cause all group activities to be limitations. During the COVID-19 epidemic, the government establish Work From Home (WFH) for workers, students and workers Female. So that children, young and adult can spend most of time in front of a Compute or any digital devices. According to Bhattacharya these device can cause injured by release high energy waves that can enter the eye and eventually donate to photochemical injure to retinal cells, which can make a person exposed to various eye problems removing from dry eyes to age-related muscular deterioration¹. Computer Vision Syndrome (CVS) is the most common problem related to prolonged use mobile and digital devices that can caused objection, such as dry eyes, dark circle and reflection on the screen inappropriate viewing distance, uncorrected vision problem. The main caused of CVS is exposure to blue light source from LED light from digital devices so that exposure to blue light can have a negative effect on eye strain and physiological stress. So important safety is needed against injure caused by published to blue light by digital devices. Black grapes seeds and lutein are also known as carotenoids, which contain antioxidant so they can overcome inflammation have a peaceful effect and can maintain eye health². The use of carotenoids lutein and black grapes seeds which contain antioxidant in overcoming Computer Vision Syndrome (CVS) is formulated into a preparation herbal eye mask. So in this study, a formulation was made herbal eye mask from Black grapes seeds, isabgol, and aloe vera. The focus of this research is obtain a preparation of herbal eye mask that can overcome Computer Vision Syndrome (CVS) and Dark Circle with good pharmaceutical stability³.

OBJECTIVES

1. Computer Vision Syndrome is a collection of related to eye disorder due to the use computer based digital devices.



- Black grapes seeds are carotenoids that contain antioxidant so that they can overcome information have a peaceful effect and can maintain dark circle and computer vision syndrome.
- The purpose of this research is to cultivate a topical preparation is the herbal eye mask from black grapes seeds, isabgol, and aloe vera which is useful for dark circle and computer vision syndrome.
- The prepare of herbal eye mask for reducing dark circle and CVS.
- To prepare the eco-friendly herbal eye mask using black grapes seeds, isabgol, and aloe vera⁴.
- To estimate the effectiveness and cooling property of the developed eye mask by quantitative analysis.

REVIEW OF LITERATURE

Herbal Eye Mask: An herbal eye mask is a fabric or other material that you were over your eyes. Its blocks vision in eye and treat some vision problem with what is called occlusion therapy. Mask are also to common to wear after eye procedure.

Advantages

- Cross infection is reduced.
- Protection of care provides.
- Cost effective.
- Flexible, soft, and comfortable.
- Protect skin from friction.
- May help you to fall a sleep quicker, complete darkness can increase melatonin production.
- Block out artificial light to help improve sleep quality.

Disadvantages

- Herbal drug have slower effects as compare to Allopathic dosage from. Also is requiring long term therapy.
- If they are too tight, they can leave impressions in your face and around your nose.

Types of Mask

- Cooling eye mask**
Often fill with ingredient like aloe vera extract to provide a cooling sensation and reduce puffiness and inflammation.
- Hydrogel eye mask**
Some mask contain have a hydrogel base, which can have a expensive feel and may contribute to improve skin elasticity.
- Hydra gel eye mask**
Hydra gel eye mask are hydration sealing, under eye pumping mask. These mask are infused with peptides and plant extracts, that help in reducing dark circle and under eye hollowness. You may feel a tingling sensation when you wear them on, that's the mask working on under eye puffiness reduction⁵.

Requirements

• Formula

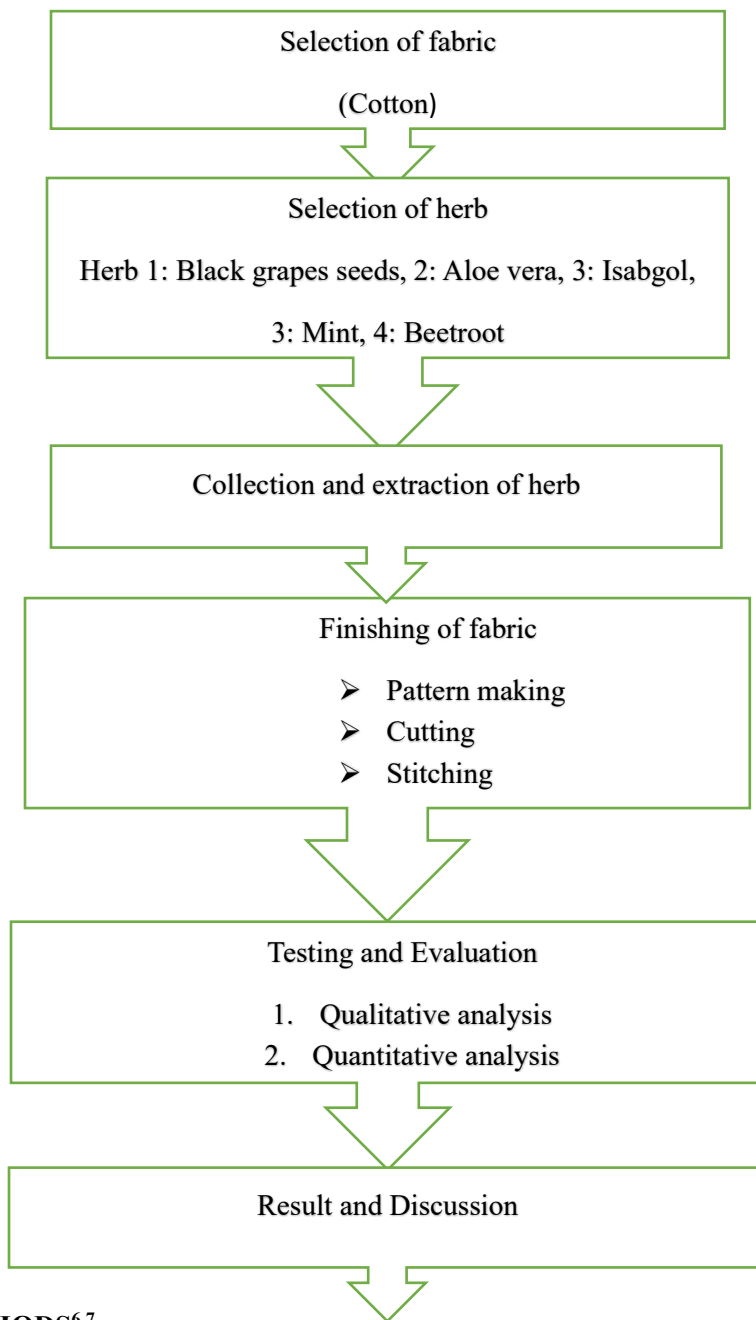
Sr. No.	Ingredients	Quantity	Category
1.	Black grapes seeds	25%	Antioxidant
2.	Isabgol	8%	Psyllium husk
3.	Aloe vera	20%	Antioxidant and Antibacterial
4.	Mint	7%	Antioxidants
5.	Beetroot	10%	Antioxidants
6.	Propyl paraben	5%	Preservatives
7.	Distilled water	25%	-----

• Equipment needed

- Mortar and Pestle
- pH Meter
- Shaking Incubator
- Brookfield Viscometer
- Weighing Balance



METHODOLOGY



MATERIALS AND METHODS^{6,7}

1) Detail Information about Black Grapes Seeds:

- Family: Vitaceae
- Drug name: carotenoids
- Biological source: Grapes seed extract is made from the crushed seeds of grapes plants. It is a phenolic chemical belonging in the large group of plant phytochemical called flavonoids.
- Biological name: *Vitis vinifera*
- Genus: *Vitis*
- Species: *V. vinifera*
- Geographical source: Europe and Asia



- Morphological characteristics: Pear shaped or oblong to ovoid seeds.
- Physiological characteristics: They contain 8-20% of a high-quality dietary oil rich in polyunsaturated fatty acids and vitamin E, and 5-8% polyphenols with potential antioxidant properties.
- Pharmacological properties: Antioxidant, flavonoids, and melatonin.

❖ Isolation procedure

Take 60 pieces of black grapes seeds and triturated in mortar pistol. Thane take 20ml of distilled water in beaker and heat on 20 min n mixed properly. Than cooled this extract 10min and then after cooling extract then take filter paper and filter out the extraction^{8,9,10}.



Fig:1- Black Grapes Seeds

2) Details Information about Isabgol

- Family: Plantaginaceae
- Biological source: Isapgol consist of dried seed and dried seed coats of plant known as plantago ovata.
- Genus: Plantago
- Species: Ovata, Psyllium
- Botanical name: Plantago ovata forst
- Geographical source: In India mainly in Gujrat, Panjab and south Rajasthan
- Chemical test: Its mucilage contain up to 85% of different carbohydrates like arabinose, xylose, and galacturonic acid;0.94% proteins; and 4.07% ash.

Morphological Characteristics

- Color: Pinkish grey to brown
- Odur: None
- Taste: Mucilaginous
- Shape: Ovate, boat shaped
- Size: 3mm
- Appearance: Seeds are hard, translucent and smooth to the dorsal (convex surface) consist of a small elongated glossy reddish brown spot at the center while the concave surface has a cavity having nil micro meter covered with a thin whitish membrane.

Isolation process

Take 5gm of isabgol seeds and triturate in mortar pistol and add 20ml of distilled water as a solvent. Then heat in 10min and filter out the extraction^{11,12}.



Fig no:2- Isolation of Isabgol

3) Details Information about Mint:

- Family: Lamiaceae
- Biological source: Obtained from fresh leaves of *Mentha piperita*.
- Genus: *Mentha*
- Species: *M. spicata*
- Geographical source: Europe, England, India and U.S.A.
- Properties: Antioxidant, antifungal, anti-inflammatory and antifungal

Morphological Characteristics

- Color: Dark green, grayish-green or purple in color.
- Odor: Bland flavor with little aroma.
- Taste: Sweet, salty, sour, bitter and the savory characteristic of meat umami.
- Shape: oval, elliptical and liner
- Size: 1-1.5cm

Extraction process

Take 10 leaves of mint and crushed in mortar pistol than take 10ml of distilled water in beaker and heated up to 10min than after cooling take filter paper and filter out the extraction of mint¹³.



Fig No:3- Extraction of Mint

4) Details Information About Beetroot:

Beet root extract is one of the quickest way lighten dark circle. It'll help brighten the under-eye area while reducing puffiness.

- Family: Amaranthaceae
- Biological source: The beetroot is the taproot portion of a beet plant, usually known in north america as beets while the vegetable is referred to as beetroot in British English, and also known as the table beet, garden beet, red beet.
- Genus: Beta
- Species: Sea beet
- Physiological characteristics: Beetroot is consist of multiple biologically active phytochemicals including betalains it is also a rich source of diverse minerals such as potassium, sodium, phosphorous, calcium, magnesium, copper, iron, zinc.

Morphological Characteristics

- Color: Bright red to bluish red
- Odor: Strong scent
- Taste: Sweet
- Size: 3-5 cm
- Shape: globular to long and tapered.

Properties: The powerful antioxidant, anti-inflammatory and vascular-protective.

Extraction process: To prepare beetroot for extracting, simply wash them thoroughly to remove any dirt, peel them if desired, and cut them into, manageable pieces. Then, use a grinder to extract the juice¹⁴.

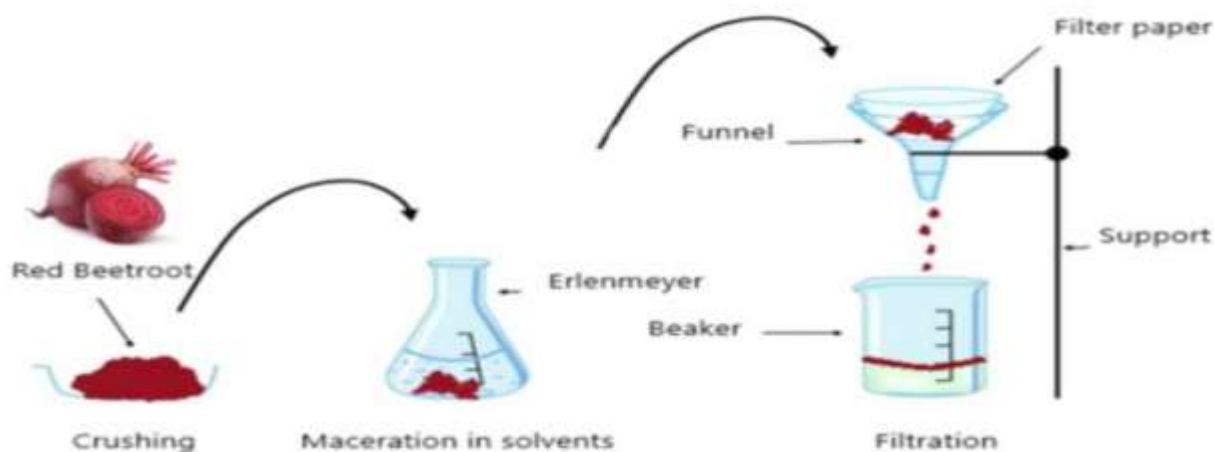


Fig No:4- Extraction process of beet¹⁵

5) Details information about aloe vera:

- Family: Liliaceae
- Biological source: Aloe is the dried juice collected by incision, from the bases of the leaves of various species of aloe.
- Genus: Aloes
- Species: Barbadosis-Miller
- Geographical source: Africa, India and other arid areas.
- Chemical constituents: Vitamins, enzymes, minerals, sugars, lignin, saponin, salicylic acid, and amino acid.
- Properties: Antioxidant, Anticancer, Antidiabetic, and Antihyperlipidemic

Morphological Characteristics:

- Color: Dark brown to greenish brown
- Odour: Characteristic, sour
- Taste: Bitter and Unpleasant
- Shape: Fleshy, triangular leaves are arranged in a rosette.
- Size: 60-100 cm

Extraction process: Aloe vera gel is the mucilaginous jelly obtained from parenchyma cells of the Aloe vera plant. After harvesting of aloe vera leaves they are crushed, grinded, filtered and stabilised to get aloe gel. Green fillet is obtained by removing the rind and thus the fillet is homogenised by crushing and grinding.



Fig No:5- Extract of Aloes¹⁶

Preparation of the herbal eye mask

1. Take 10ml of black grapes seeds extract in beaker.
2. Add 100ml of distilled water and heated on 10min.
3. Added 5ml of isabgol extract and add 2ml of mint extract and stir properly.
4. Then after added isabgol and mint extract then added propyl paraben and stir properly.
5. Then the solution was containing a gel base little by little.
6. Then add 2ml of beet root extract as coloring agent and stir.
7. The herbal gel is molded according to the shape is adapted to the under eye area.

8. after 10min cool solution then put the gel in mask and seal.



Fig No:6- Herbal Eye Mask

Testing and evaluation of herbal eye mask:

1) pH Meter

A pH meter is a scientific instrument that measures the hydrogen- ion activity in water based solutions, indicating its acidity or alkalinity expressed as pH. The surface pH of herbal gel mask was measured using pH meter portable. The pH value of this herbal mask was determined by using digital pH value of this activated grapes seeds of eye mask was found to be 5.89.



Fig No:7- pH Meter

2) Organoleptic

The preparations were observed for size, shape, color, and odor as well as changes in color and odor changes.

3) Quantitative Analysis

The developed product was physically evaluated using a group of 10 people. A questionnaire was prepared based on the used of the reusable diaper and eco-friendly product. People's review about the product is taken as the major aspects and other details like positive and negative feel of the product was also question below.

4) Estimation of weight and size

Evaluation of the weight and thickness of the mask, mask were taken and weighed one by one. The weight of herbal mask was measured using a digital scale, while the length, width, and thickness of the herbal mask were measured using a caliper.



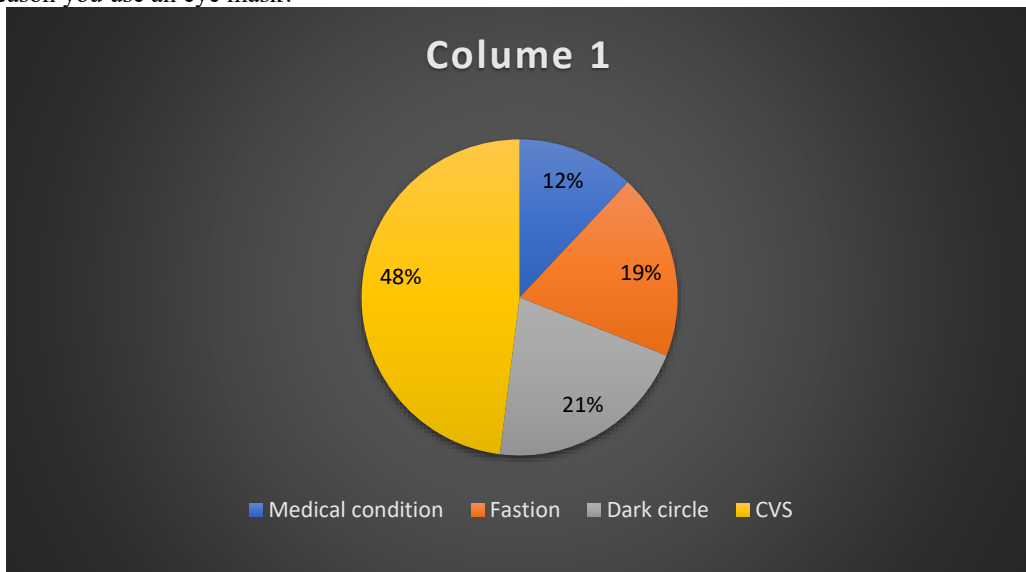
5) Homogeneity test:

All herbal gel preparation developed were tested for their homogeneity visually. The homogeneity test was carried out by applying the herbal gel eye mask formula on the object glass. The herbal was placed on a slide then covered with a deg glass to see the clarity and presence of aggregate in the herbal gel mask preparation.

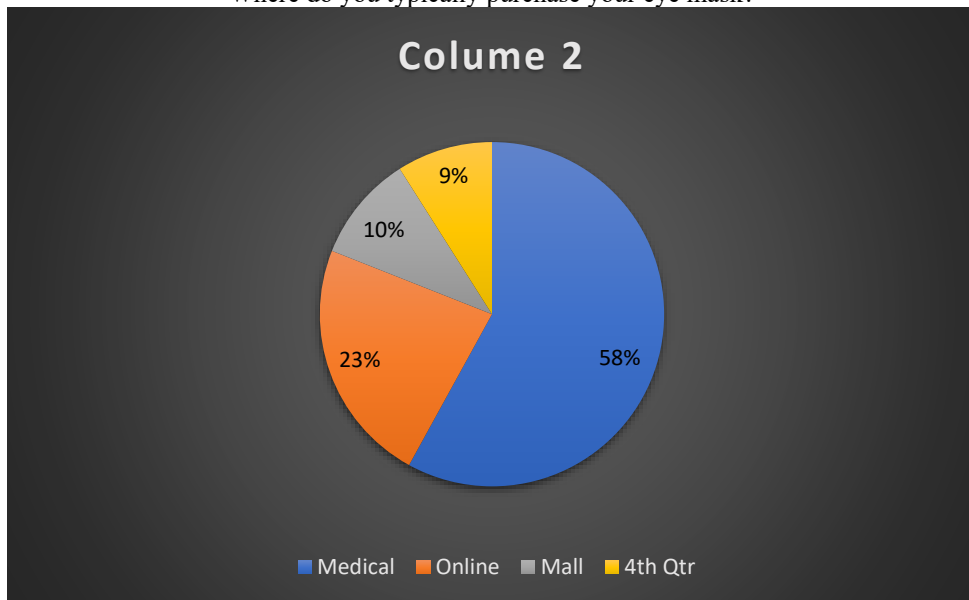
Eye mask product survey questionnaire

- 1) What is primary reason you use an eye mask?
- 2) Where do you typically purchase your eye mask?
- 3) How do you feel wearing this eye mask?
- 4) What material do you prefer for your eye mask?
- 5) Did you face side effects by using this eye mask?

What is primary reason you use an eye mask?

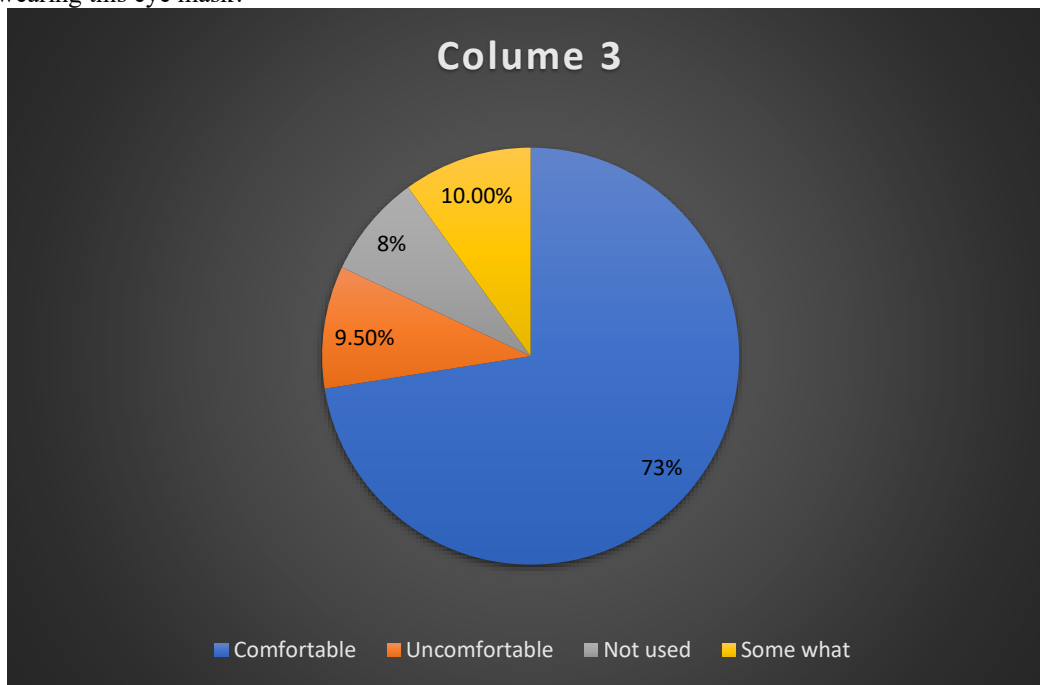


Where do you typically purchase your eye mask?





How do you feel wearing this eye mask?



Future Scope

- This product is very good source for computer vision syndrome, dark circle, eye irritation and also gives cooling effect. If this gives good result of course it will have sales rate because of these benefits also it is budget friendly the ingredients used this sleeping eye mask like grapes seeds isolation, isabgol isolation, Aloe vera extract, mint extract, and beet root as coloring agent is also budget friendly. Also it is very essential in today's life style.
- To sell this product it is good to make a tie-up with famous cosmetic or beauty companies. It is not that easy to have a tie-up with famous beauty or cosmetic company. Step by step process will give successful output.

Summary and Conclusion

Eye mask is a best product for reducing computer vision syndrome and reduce dark circle. In this modern world most of the people using time in their mobile phones. So their will get irritated and it will cover with dark circles. This eye mask will be really helpful for them to get rid of dark circles and reduce their irritation in their eyes. Regular use of this mask will gives a good result. In this study, it was found that using earplugs and eye masks for patients in an intensive care unit during the night was effective in improving patient's computer vision syndrome and reducing dark circle and problems in vital signs.

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Developed Eye mask

