

Cognizance of Color Blindness in University-Girls-Hostel Residents

Muhammad Imran Qadir*, Asma Rasheed & Syed Bilal Hussain

Institute of Molecular Biology & Biotechnology, Bahauddin Zakariya University, Multan, Pakistan.
Correspondence to (Muhammad Imran Qadir) - mrimranqadir@hotmail.com*



DOI: <https://doi.org/10.46759/IIJSR.2022.6305>

Copyright © 2022 Muhammad Imran Qadir et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Article Received: 12 May 2022

Article Accepted: 17 August 2022

Article Published: 21 September 2022

ABSTRACT

The main purpose of the study was awareness about color blindness, its causes and impact on health in university-girls-hostel residents. Eighty students joined in this study. All the students of Bahauddin Zakariya University Multan Khadija hall girl's hostel were involved in that study in which they were asked about color blindness it provides answers like is color blindness a viral infection or a bacterial disease, metabolic disease. Any one of you your family and friends have ever suffered from this disease? How can we treat it with the use of medicines or surgery? It is shifted genetically or by blood transfusion contact. Which they were asked about color blindness disease type and it's diagnose and how it can be controlled either by surgery or medicines or no need of its treatment and how it spreads and family friends history of this disease. A survey was done by the awareness about color blindness its reasons and effect on health. A survey was done by the awareness about color blindness its reasons and effect on health. The statistical analysis was done by using MS word. Above study showed that majority of students said that AIDS is a bacterial disease rather than fungal disease. 67.5% of students claimed it as a bacterial disease but 36.25% said that it is not a genetically transferred disease. 53.75% of students had this disease.

Keywords: Color blindness, Genetically inherited, Wavelength sensitive, Color vision deficiency, Retinal or brain damage.

1. Introduction

Color blindness, also named as color vision deficiency, in this disease the decreased ability to or differentiate in color occurs. It becomes difficulties for a patient to do simple task like clothing, choosing, traffic lights, reading, visual acuity also decreased and also become uncomfortable in bright light environment. It is genetically inherited. Men have more chances to develop this disease because the gene responsible for this disease is located in X chromosome while in female one defective X chromosome is compensated by another X chromosome as men has only one X chromosome. Other responsible factors for this disease are physical damage to the eyes or other brain parts. Its diagnosis is done by a test named as Ishihara color test another genetic test is also performed. At present time no cure is available for color blindness.

However some type of lenses is being used which enhance color recognizing ability. Common form of this disease is green and red from of color blindness. It affects 0.5% female and 8% male. As age increases this disease develops gradually. Some people with color blindness cannot discriminate between blue and green. Dichromate cannot differentiate between red and green. They become confused with traffic lights. Such person also cannot differentiate between green a grubby white lamp. Flash light also cause problem in such patients. Color blindness can have from of or partial depends upon clinical appearance.

In majority of color blindness discrimination between red green and yellow becomes difficult. Red green color coding can be improved by immune fluorescent imaging. In this method red color is replaced with magenta and green with turquoise which improves vision. There are two different kinds of inheritically-transferred color blindness partial or complete which result in total removal of three different cone system. If one cone is effected it is called Dichromic. Mostly middle long wavelength cone system cause most frequent color blindness in which

patient cannot differentiate between red green and yellow. Complete color blindness called monochromic in which a patient cannot discriminate between black and white. Dichromate's have vision problem which effect daily life the terms related to this disease are protanopia, deuteranopia, and trianopia which mean inability to see. They are inherited and cause red green color blindness. They are sex linked and mostly effect male than female. A red green color blind person transmits this disease to all his daughters.

In blue yellow color blindness it becomes difficult for effected person to differentiate between bluish hues and yellowish hue as well as green hues. In it a person short wavelength sensitive cone system becomes inactive which is called protanopia. It mainly found in male than females and is sex linked disease. In total color blindness total inabilities to see is present it also known as amnesia. Other causes of color blindness are retinal or brain damage by accidents or traumas which cause brain swelling. Retina is also damaged by exposure of ultraviolet light. This is the degenerative disease of eyes. Patients having diabetes or vitamin A deficiency also have chances to develop that disease. This disease is diagnosed by ishihara color test in which usually numbers are involved that is done in children's which are learning numbers.

Another test named as Farnsworth-Mensal 100 hue is also performed to check out color blindness in such patients which are at early stage of that disease and not at severe stage and usually it is done in 30% color deficient persons. Green red color blindness is checked by HRR color test in which plates are used for color detection. There is no cure for color deficiency now days. Another option which provides control up to some limit is use of spectacles lenses which improve color discrimination ability. Lenses used specific wavelength to improve cone anomaly which stimulate red and green cone and improves vision. Awareness campaigns are important area of research in health sciences [1-2].

The main purpose of the study was awareness about color blindness, its causes and impact on health in university-girls-hostel residents

2. Material and Method

Eighty students joined in this study. All the students of Bahauddin Zakariya University Multan Khadija hall girl's hostel were involved in that study in which they were asked about color blindness it provides answers like is color blindness a viral infection or a bacterial disease, metabolic disease. Any one of you your family and friends have ever suffered from this disease? How can we treat it with the use of medicines or surgery? It is shifted genetically or by blood transfusion contact. Which they were asked about color blindness disease type and it's diagnose and how it can be controlled either by surgery or medicines or no need of its treatment and how it spreads and family friends history of this disease.

3. Study Design

A survey was done by the awareness about color blindness its reasons and effect on health.

Statistical Analysis

The statistical analysis was done by using MS excel.

4. Results

Percentage of students feedback calculated in table number of 1,2,3 and 4 separately. 55% of students claimed it as a viral disease and 45% said that it is not a viral disease 67.5% said that it is a bacterial disease 62.5% of students said that it is a fungal disease. 37.5% of students opposed it. 63.5% of students thought it is a genetically transmitted disease but 36.25% of students disagree with it. The student's percentage who said that color blindness is metabolic disease is 66.25%. But 33.75% have opposed it. Most of the students think that color blindness is transmitted by blood transfusion. But less number of students think that it is not so. 53.75% of students said that color blindness can be transferred from parents to offspring's. But 46.25% of students are not in favor of that statement. 50% of students said that color blindness can be treated by medicine. But 50% are not in favor of that opinion. Less number students have opinion that color blindness can be treated through surgery. But major students have opposite opinion. 48.75% students claimed that color blindness don't need but 51.25% students opposed it.

Table 1. Survey for awareness of color blindness etiology

Color blindness is	Yes	No
1. Viral infection	55%	45%
2. Bacterial infection	67.5%	32.5%
3. Fungal infection	62.5%	37.5%
4. Genetic disorder	63.5%	36.25%
5. Metabolic infection	66.25%	33.75%

Table 2. Survey for evaluation of views about color blindness transmission

Ever have color blindness	Yes	No
1. Yourself	53.75%	46.25%
2. Your family member	57.5%	42.5%
3. Your relative	61.25%	38.75%
4. Your neighbor	65%	35%
5. Your friend	47.5%	52.5%

Table 3. Survey for evaluation of views about color blindness transmission

Color blindness transferred	Yes	No
1. Blood transfusion contact	43.75%	56.25%
2. From parents to children	53.75%	46.25%

Table 4. Survey for evaluation of views about color blindness hope

Color blindness may be treated by	Yes	No
1. Medicines	50%	50%
2. Sargery	42.5%	57.5%
3. No need of treatment	48.75%	51.25%

5. Discussion

Above study showed that majority of students said that color blindness is a bacterial disease rather than fungal disease. 67.5% of students claimed it as a bacterial disease but 36.25% said that it is not a genetically transferred disease. 53.75% of students had this disease. Awareness about diseases gives a way to avoid diseases [3-5].

6. Conclusion

The female students residing in hostel of Bahauddin Zakariya University were not all aware about color blindness.

Declarations

Source of Funding

This research did not receive any grant from funding agencies in the public, commercial, or not-for-profit sectors.

Competing Interests Statement

The authors declare no competing financial, professional, or personal interests.

Ethical Approval

Ethical approval for this study was obtained from Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University, Multan, Pakistan.

Consent for publication

The authors declare that they consented to the publication of this research work.

Availability of data and material

The authors are willing to share the data and material according to relevant needs.

References

- [1] Qadir MI, Javid A. (2018). Awareness about Crohn's Disease in biotechnology students. *Glo Adv Res J Med Medical Sci.*, 7(3): 062-064.
- [2] Qadir MI, Saleem A. (2018). Awareness about ischemic heart disease in university biotechnology students. *Glo Adv Res J Med Medical Sci.*, 7(3): 059-061.

[3] Laura PA, Dolores LF, Pedro GF, Luis PH. (2022). Undergraduate nursing students' knowledge of Alzheimer's disease and related dementias care. *Journal of Professional Nursing*, 39: 101-8.

[4] Akther T, Nur T. (2022). A model of factors influencing COVID-19 vaccine acceptance: A synthesis of the theory of reasoned action, conspiracy theory belief, awareness, perceived usefulness, and perceived ease of use. *PLoS One*. 17(1): e0261869.

[5] Benz K, Trapp R, Voss M, Hanisch M, Geisthoff U, Jackowski J (2022). Awareness and Knowledge of Rare Diseases in German Dentists, Dental Specialists and Oral and Maxillofacial Surgeons: A Country-Wide Survey. *Medicina*, 58(8): 1114.