

Patterns of Subjective Refraction by Optometrists in India

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Abstract

Background: Deciding what will be the optimal glasses prescription for a patient is also an art. The judgement is based upon the patient's presenting visual complaint, the outcome of subjective refraction, and a determination of the reason for the patient's difficulties. This is exactly the same manner with which medical problems are addressed - history, examination, diagnosis and treatment decisions.

Aim: Aim is to find the Standardized Pattern/Protocol/method of Subjective refraction pattern of followed by Various Optometrists in India to obtain best correction for refractive error.

Methods: The survey was performed in mid-August to mid May 2022 for collects of data 2022 year in every state and cities of India by using the Google Survey Form, A questionnaire of form was sent through electronic (e-mail), WhatsApp, social medias and through links shared, randomly chosen the optometrist and organisations. Keeping all together with the request of this data collections had collection has been kept open from 24 March to 18 May 2022. Survey questionnaire was given among 720 Optometrists and a total of 357 eye care practitioners individually answered to complete the questionnaire survey form.

Results: More the 50 percent of eye care practitioner do follow the optimal practise.

Conclusions: This study documented on the current day scope of optometrists practising subjective refraction are involved in multiple modes of practise, based on the questionnaire responses we were noticed that there are many variations in the subjective techniques followed and few of them were contradictory to the standard protocol.

Keywords: Refractive Error; Spectacles; Vision

Introduction

In an objective refraction (often retinoscopy), the examiner's discretion alone determines the optimal optical correction [1]. Subjective refraction is based on the patient's ability to perceive changes in clarity. This procedure requires the patient's consent.

Subjective refraction can be considered as simply posing a series of repetitive queries to the patient, such as "Which is better, number one or number two?" However, when the refractionist knows what is occurring optically at each phase, the procedure becomes

intellectually demanding and exciting. Even with a perfectly executed retinoscopy or auto-refractor measurement, subjective refinement is required to determine the patient's optimal correction [2]. It is also an art to determine the optimal prescription for a patient's spectacles. The choice is based on the patient's presenting visual complaint, the outcome of subjective refraction, and an analysis of the patient's problem. This is precisely how medical problems are addressed: with a history, physical examination, diagnosis, and treatment selections [3]. Consequently, it is clear that subjective refraction and the prescription of eyeglasses require not just measurement but also problem solving. They are the means through which a patient's visual needs are satisfied and the best corrected visual acuity is determined. When conducted with an appreciation for the art and the patient's benefit, the practise is inherently joyful [4].

Methodology

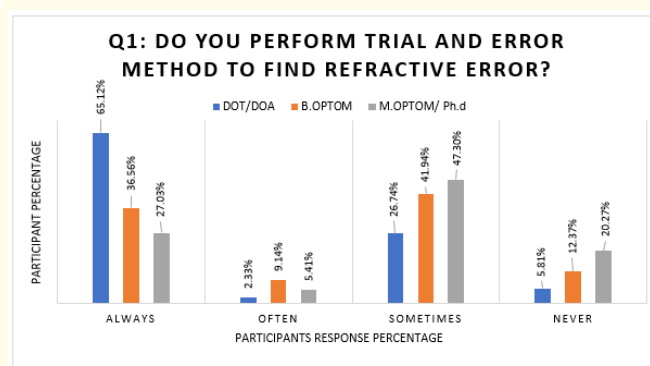
Reference period for this study is year of 2021-2022 and this study will trace the knowledge and practise pattern followed by optometrist in India. The survey was performed in mid-August to mid May 2022 for collects of data 2022 year in every state and cities of India by using the Google Survey Form, A questionnaire of form was sent through electronic (e-mail), Whats App, social medias and through links shared, randomly chosen the optometrist and organisations [5]. Keeping all together with the request of this data collections had collection has been kept open from 24 March to 18 May 2022. Survey questionnaire was distributed among 720 Optometrists and a total of 357 eye care practitioners personally responded to complete the questionnaire survey form, whereas 58.8 percent (210) were male and 41.2 percent (147) were female, 40.3 percent (144) responded through retails chain, 56.3 percent (201) of practitioners responded from hospitals and another 12.3 percent (44) percent were responded from universities (Academics) (Academics) 19.6 percent (70) have declared as individual practitioners, 1.4 percent (5) were non practising optometrists, 8.6 percent (30) were practising in various regions. The survey form was designed in two ways; the first one part designed personal information, Age, gender, working with organisation and Mail id is collected by google form (all the information is kept under high confidential) and another second part was designed to receive/collect the informative data which was mentioned in survey form [6]. The survey form underwent peer to peer face recognise process with mentor/guide before it was administrated. The including criteria was practitioners as an independent or registered, experienced, freshers, and organisations (clinics, hospital, retails optical chains and universities.) and non-

practitioners were omitted. After all Exclusions (Some responses did not have sufficient information Ex: Contact no was given instead to Years of experience and age) a total response of 346 were taken for Analysis.

Results

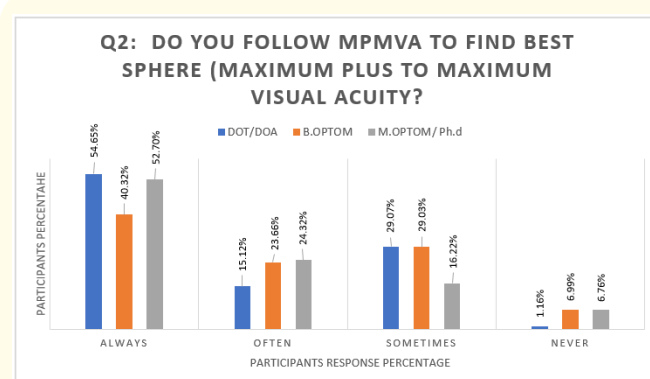
The data was entered into the total number of fifteen questions and analysed by plotting the Bar and graph to identify the subjective refraction practise patterns.

Q1: Do you perform trial and error method to find refractive error?



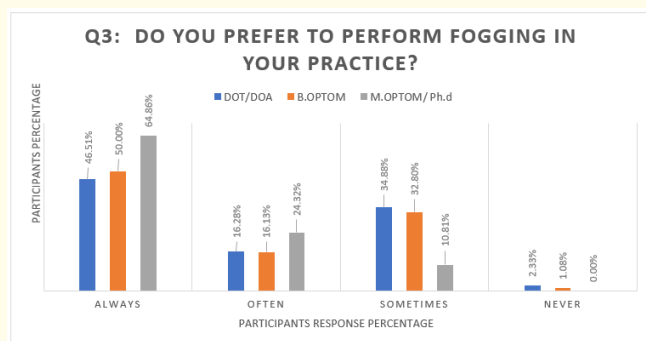
Graph 1: Showing percentage of participants performed trail and error method to find refractive error.

Q2: Do you follow MPMVA to find best sphere (Maximum plus to maximum visual acuity)?



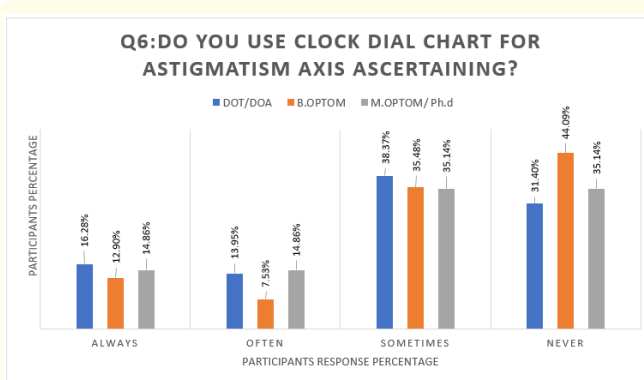
Graph 2: Showing percentage of participants followed MPMVP to find best sphere.

Q3: Do you prefer to perform fogging in your practice?



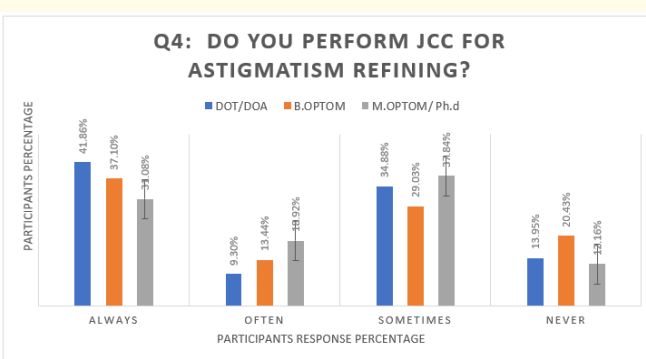
Graph 3: Showing percentage of participants preferring fogging in their practices.

Q6: Do you use clock dial chart for astigmatism axis ascertaining?



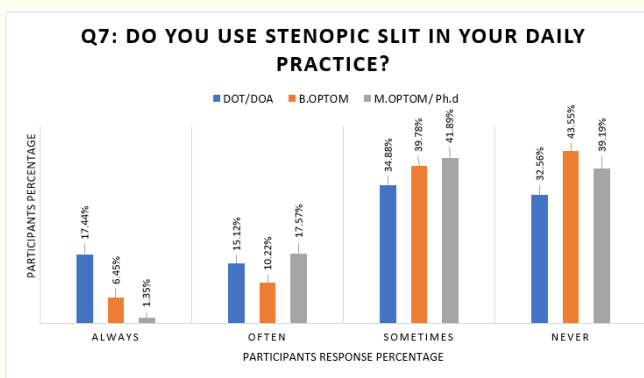
Graph 6: Showing percentage of participants prefer to use clock dial chart Astigmatism for axis refining.

Q4: Do you perform JCC for astigmatism refining?



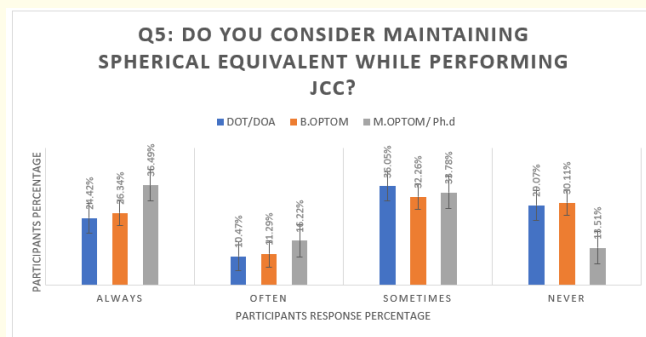
Graph 4: Showing percentage of participants to perform JCC for astigmatism refining.

Q7: Do you use stenopic slit in your daily practice?



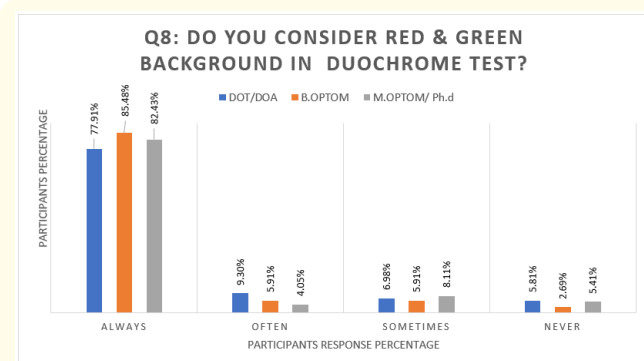
Graph 7: Showing percentage of participants prefer to use stenopic slit on daily basis.

Q5: Do you consider maintaining spherical equivalent while performing JCC?



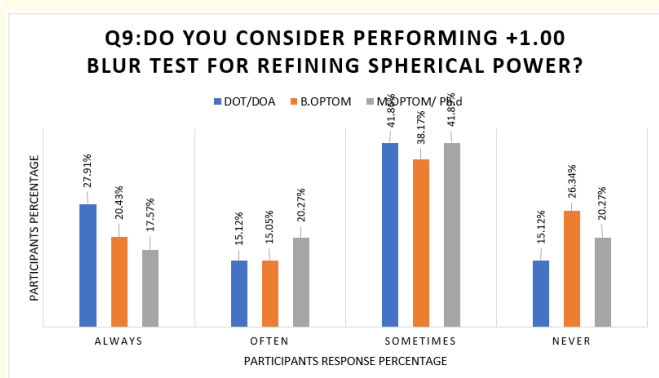
Graph 5: Showing percentage of participants prefer to maintain spherical equivalent before doing JCC.

Q8: Do you consider red and green background in Duochrome test?



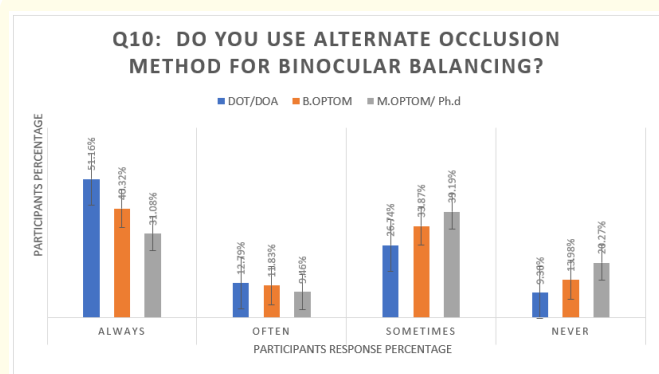
Graph 8: Showing percentage of participants consider to perform duochrome while doing subjective refraction.

Q9: Do you consider performing +1.00 blur test for refining spherical power?



Graph 9: Showing percentage of participants consider to perform +1.00 blur test for refining spherical power.

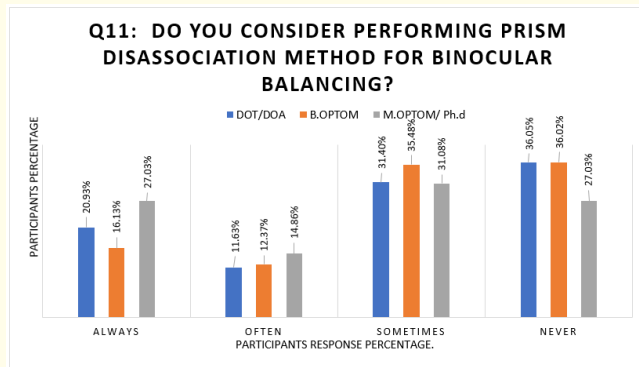
Q10: Do you use alternate occlusion method for Binocular balancing?



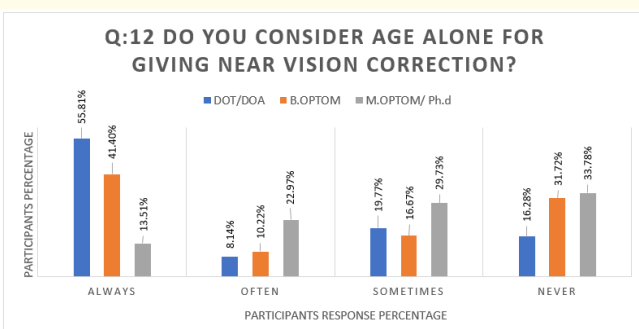
Graph 10: Showing percentage of participants prefer alternate occluding for binocular balancing.

Q11: Do you consider performing prism disassociation method for Binocular balancing?

Q12: Do you consider age alone for giving near vision correction?

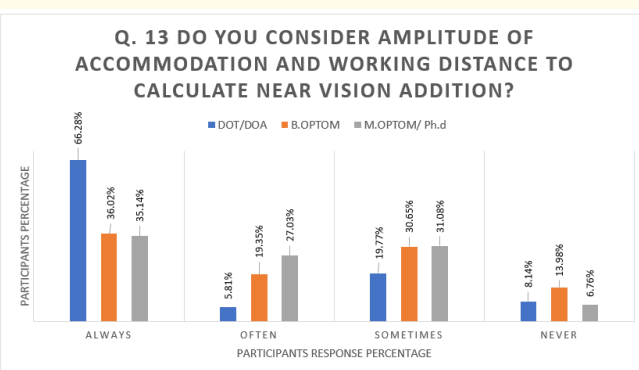


Graph 11: Showing percentage of participants consider to perform prism dis-association method for binocular balancing.



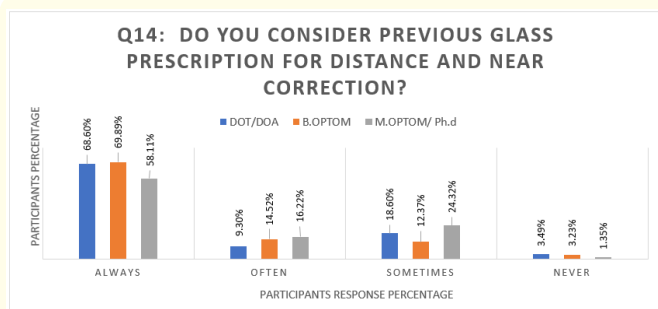
Graph 12: Showing percentage of participants consider their age alone for giving near correction.

Q13: Do you consider Amplitude of Accommodation and working distance to calculate near vision addition?



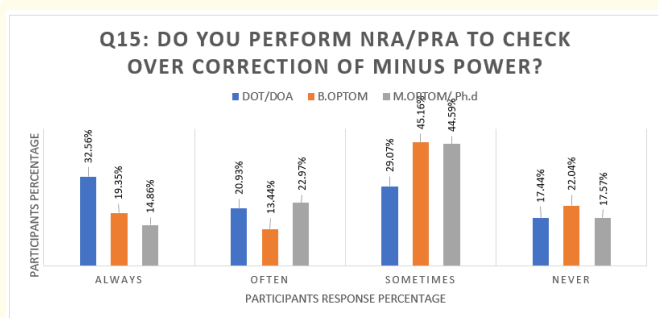
Graph 13: Showing percentage of participants consider to perform amplitude of accommodation and working distance to calculate near vision addition.

Q14: Do you consider previous glass prescription for distance and near correction?



Graph 14: Showing percentage of participants consider to check for previous glasses for distance and near.

Q15: Do you perform NRA/PRA to check over correction of minus power?



Graph 15: Showing percentage of participants consider to perform NRA/PRA to check over correction of minus lens.

Discussion

This is the first survey undertaken on the patterns of subjective refraction followed by optometrists in India. The strength of this survey lies in the quantity of respondents and the influence these results would have to be more specific for answering to the questions for a better future scope of optometry practise in India [7]. The current critical situation in many nations cannot wait for improvement but requires optometrist to take a huge step in improving knowledge and abilities. Although, received data shows appreciable responses where highest percentage of positive response seen in question 8 and question 3, that is, 85.48 percent

and 64.86 percent respondents always consider Duochrome balancing and fogging while doing subjective refraction followed by trial-and-error method 65.12 percent, MPMVA 54.65 percent and JCC for astigmatism refining 41.86 percent. The Least perform test include Clock dial chart 44.09 percent, Stenopic slit 43.55 percent and Prism dissociation method 36.02 percent. Other test results in between Often and sometimes. We discovered post graduate to be the most active responders followed by DOT/D.OA and B.Optom.

Conclusion

This study documented that optometrists practising subjective refraction today are involved in multiple modes of practise. Based on the questionnaire responses, we observed that there are numerous variations in the subjective techniques used, and a small number of them contradict the standard protocol. Optometrists are required to keep up-to-date with the importance of standard protocol for improved vision outcomes.

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