

Article ▶ The Impact of Nystagmus on the Assessment of Personality Traits and Attractiveness

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ABSTRACT

Background: Nystagmus is a repetitive, involuntary, rhythmic eye movement which may have physiological or pathological causes. However, no studies on the effect of nystagmus on social prejudice have been conducted to date.

Methods: Research participants (n=163) were asked to rate one of two 45-second videos presenting a part of an interview for the position of an editor in a local newspaper. The only difference between the two clips was that they presented a female who either had or did not have an induced optokinetic nystagmus. The participants were asked to rate the candidate with regard to 11 personality features using a scale from 1 to 5.

Results: After Bonferroni correction, statistically significant differences were observed with regard to communication skills, competence level, dependability, intelligence, and organizational skills. For sincerity, leadership skills, attractiveness, emotional stability, honesty, and sense of humor, the differences were not statistically significant.

Conclusions: Individuals with nystagmus are being judged with regard to fundamental characteristics which are paramount not only for professional opportunities but also in many other significant areas of everyday life.

Keywords: nystagmus, quality of life, optokinetic nystagmus, facial anomalies, social bias

Introduction

Nystagmus is a repetitive, involuntary, rhythmic eye movement which may have physiological or pathological causes. Pathological nystagmus may be divided into congenital and acquired. The former is usually associated with albinism, amblyopia, fusion maldevelopment nystagmus syndrome, or congenital retinal eye disease, or it may be idiopathic in nature. Acquired nystagmus may be the consequence of Down syndrome, hydrocephalus, stroke, or Multiple Sclerosis, but it may also belong to a different neurological type.¹ According to the latest epidemiological research conducted in Great Britain, nystagmus develops in 0.24% of the population.¹ Presently applied treatment methods include surgery, pharmacotherapy, botulinum toxin injections, prismatic glasses, and contact lenses. There are several treatment objectives, such as improving visual acuity, reduction of oscillopsia, correction of compensatory head position, and reduction of nystagmus amplitude and frequency.

Noticeable ocular changes are a very common finding, which make the face look far from average and disrupt facial symmetry. Both facial symmetry and an average-looking face are components of attractiveness,²⁻⁴ which are interpreted by the evolutionary psychologist as information about the quality of human genes.⁴⁻⁶ No studies on the effect of nystagmus on social prejudice have been conducted to date. However, the results of studies concerning the quality of life in nystagmus patients⁶⁻⁸ and their functioning related to this ocular condition are available.⁸

The impact of strabismus on the perception of individuals in terms of their health, interpersonal skills, intelligence,

attractiveness, and their ability to achieve success has been well documented.^{9,10-13} Individuals with strabismus, another noticeable condition to employers, are also perceived as inferior to other candidates without this health issue.^{9,10} This led the authors of this study to the hypothesis that the presence of nystagmus could also result in social prejudice.

Methods

Two 45-second videos were presented to a group of research participants. Both videos presented a part of a job interview for an editor position at a local newspaper. The same female was shown in each video (Figure 1). Each video was prepared in the same way. The only difference between them was that the female shown in one of the videos had optokinetic nystagmus. In other words, in each video, the female looked the same, she gave identical answers to each question, and she was wearing the same clothes. The videos also had the same background.



Figure 1. Photography from the clip that we used in this study.

Optokinetic nystagmus was induced with a custom-made device which was not visible in the recording. It was a special optokinetic cylinder attached to an old-style record player, which ensured stable rotation and allowed experimenters to set rotation speed at a level that helped induce the strongest possible nystagmus. During both of the videos, the woman was looking at the optokinetic cylinder placed on camera level, so as to give an impression that she was looking at the interviewer. The only difference between the two videos was that in one case, the cylinder was moving in order to cause optokinetic nystagmus, while in the other case, the cylinder was still. The study was performed according to the tenets of the Declaration of Helsinki. One hundred and sixty-three subjects took part in the experiment and were unaware of the purpose. The mean age of the subjects was 34.3 years (range: 18 to 73 years). Seventy-eight of them were randomly assigned to rate the video presenting nystagmus and 85 were shown the other video that presented the same woman without this condition.

After watching the video, the research participants were asked to rate the presented female as a job candidate in relation to her 11 personality traits using a scale from 1 to 5. A score of 1 indicated that a person displayed a given trait only to a small extent, and a 5 indicated that the trait was displayed to a major extent. Ten of the traits used in the experiment were adapted from another questionnaire used in researching social prejudice towards strabismic patients.¹² Additionally, the participants were asked to rate the woman's attractiveness. At the conclusion of the study, the nature of the experiment was explained to the respondents, and each was given an opportunity to withdraw their answers. None of the respondents withdrew their answers.

Results

The researchers applied a Student's t-test for separate variables with Bonferroni correction. $P < 0.05$ was adopted as statistical significance level. The results are presented in Table 1. After Bonferroni correction, statistically significant differences were observed with regard to communication skills, competence level, dependability, intelligence, and organizational skills. For sincerity, leadership skills, attractiveness, emotional stability, honesty, and sense of humor, the differences were not statistically significant.

Discussion

The results indicate that induced nystagmus had significant impact on the perception of human characteristics. Inferred from this, people with nystagmus are potentially being judged with regard to fundamental characteristics, which are paramount not only for professional opportunities but also in many other significant areas of everyday life. It means that they may face certain difficulties with achieving their objectives despite being properly qualified.

Table 1. The Evaluation of a Person's Traits in Natural and Optokinetic Nystagmus Conditions

	Nystagmus	No nystagmus	P-value
Communication skills	2.89	3.42	0.003
Competence	3.1	3.67	0.0003
Dependability	2.98	3.72	0.0001
Emotional stability	3.23	3.52w	0.13
Honesty	3.25	3.72	0.0074
Sense of humor	2.35	2.8	0.01914
Intelligence	3.27	3.86	0.0007
Leadership skills	2.93	3.42	0.0064
Organizational skills	3.02	3.58	0.0016
Attractiveness	2.73	3.25	0.0068
Sincerity	3.4	3.57	0.32

There are some limitations to the interpretation of our study. Optokinetic nystagmus differs in amplitude and frequency from other types of nystagmus. In each patient's case, nystagmus manifests itself differently, depending on type and severity of the illness. Both the severity of symptoms and the type can influence the results presented in this study. Optokinetic nystagmus was chosen because it gave the possibility of control upon all other variables. In the case of pathological nystagmus, it is very difficult to find a person whose nystagmus can be fully suppressed. Even if it were possible, the conditions in which the video was made would probably have to be changed. In the result of so doing, the videos would differ from each other.

Participants in this research evaluated only a female, and therefore it is hard to estimate how a person's gender impacted the results. In the case of strabismus, more pronounced prejudice was observed when females underwent evaluation.^{10,11} Gender potentially affects the prejudice level in a similar manner in subjects with nystagmus.

The research concerning the impact of ocular disorders on social prejudice conducted to date has not analyzed the difference between perception of a face presented in a static two-dimensional picture and a moving face showed in a video clip. The studies indicate no correlation in perception of attractiveness of the same person presented in a photo or a video. That suggests that the observers may have used different criteria in either case.¹⁴⁻¹⁶ Although not all experiments confirmed this phenomenon,^{16,17} it is possible that the earlier results of research concerning the impact of strabismus on prejudice in which the subjects assessed only faces presented as static pictures may not reflect a regular, everyday life situation.

Conclusion

People with nystagmus are being judged with regard to fundamental characteristics that are paramount not only for professional opportunities but also in many other significant areas of everyday life. Further research is inevitable in order to establish how the type and severity of nystagmus influence the previously mentioned phenomenon.

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