

Commentary: Delphi method in ophthalmology: The guiding principles from experienced minds for ambiguous clinical situations

This issue of the Indian Journal of Ophthalmology (IJO) features an interesting study^[1] using a Delphi method for surgical management of proliferative diabetic retinopathy (PDR) in India.

The Delphi method (DMt) was mainly developed by the RAND Corporation (Santa Monica, California, USA) to “forecast the impact of technology on warfare” in the 1950s.^[2] According to the RAND Corporation, it “entails a group of experts who anonymously reply to questionnaires and subsequently receive feedback in the form of a statistical representation of the ‘group response,’ after which the process repeats itself. The goal is to reduce the range of responses and arrive at something closer to expert consensus.”

DMt supports the idea that a group decision is better than individual decisions.^[3] This is a structured and systematic technique that modulates a group’s communication process to approach a complex problem.^[3]

To employ the DMt, first, a problem question or related problem questions are systematically identified.^[3] The panel members are selected based on predefined objective criteria (knowledge, experience, or understanding of the topic). These experts are usually located in geographically different areas and each member does not know the exact response of another member (anonymity). The exact size may depend on the problem question(s); however, usually for practicality, most of the studies use around 10–100 panel members.^[3] For broad topics, a heterogeneous expert panel is preferred, and for focused/specific problems (like in this paper,^[1] “surgical management of PDR”), a homogenous expert panel (like “a group of 13 fellowship-trained, experienced, and prolific vitreoretinal surgeons”^[1] in this paper, though individual members may have differences of opinion) is usually invited.

Then, a structured questionnaire is sent (usually via email or online forms) to multiple experts or panel members. A “change agent” or “facilitator” or “leader” coordinates the responses and prepares an anonymized summary (often with statistical summary/percentage scores) of the responses and reasons the panel members provided for selecting a specific response. In the next round, the panel members are encouraged to revise their responses in light of the summary of responses. Such iterations with controlled feedback allow a democratic process of reaching a consensus that may be truly representative of the group’s opinion. Such rounds are continued till a predefined closing criterion (stability or results, achievement of consensus, or the number of rounds) is reached.

The origin of the DMt goes back to the ancient Greek era. The oracle of Delphi was uttered by Pythia, the highest priestess of the temple of Apollo at Delphi.^[3]

The advantages of DMt include anonymity of the participants (less peer pressure and less bias due to the dominance of specific member and group’s conformity), certified experts, multiple iterations, and controlled feedbacks (so that each participant’s opinion gets reflected in the final consensus), and less need for resources.

However, the possible limitations include lack of accountability of the members due to anonymity, probable conformity of opinion due to the pressure to converge opinions, bias due to poorly constructed questionnaire, biased results due to less experienced panel members, biased facilitator, and absence of strict quality control. However, guidance (CREDES) exists for the conduct of DMt-based studies for palliative care.^[4]

Uses of the DMt have been published in the field of ophthalmology and include definition of successful outcomes in strabismus surgery, diagnostic guidelines of pattern-related visual stress,^[5] classification of signs and symptoms of dry eye disease (DIDACTIC study) to develop treatment recommendations in dry eye disease (dysfunctional tear syndrome), the symptomatology associated with visual dysfunctions, diagnosis and management of non-paraneoplastic autoimmune retinopathy, use of dexamethasone intravitreal implants in diabetic macular edema (DME), and to propose interventions to reduce deficiencies in the real-life treatment of neovascular age-related macular degeneration.

In the current study,^[1] inclusion of a greater number of experts would have made the consensus stronger. The reduced waiting time of 1 month^[1] for “naive PDR with vitreous hemorrhage (VH), with no view of fundus and no traction on USG” (ultrasonogram) conforms to the current safety of vitreoretinal surgery compared to the times of diabetic retinopathy vitrectomy study.^[6] Recently, the protocol S^[7] of drcr.net found that “Among eyes with proliferative diabetic retinopathy, treatment with ranibizumab resulted in visual acuity that was non-inferior to panretinal photocoagulation (PRP) treatment at 2 years.” The PROTEUS study noted that regression of new vessels at 1 year was higher in ranibizumab with PRP (versus PRP alone).^[8] CLARITY trial^[9] noted that “Patients with proliferative diabetic retinopathy who were treated with intravitreal aflibercept had an improved outcome at 1 year compared with those treated with PRP standard care.” However, authors^[1] recommend that “In the Indian scenario, PRP alone is still the consensus, and AntiVEGF monotherapy is not recommended as yet” in PDR without DME, which may reflect the differences in retina practice worldwide.

Thus, the Delphi method provides a practical approach to complex clinical problems and has the potential to improve clinical practice.

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References

1. Sengupta S, Sindal MD, Shanmugam PM, Bhende P, Ratra D, Nagpal M, *et al.* A Delphi method based consensus statement for surgical management of proliferative diabetic retinopathy in India. *Indian J Ophthalmol* 2021;69:3308-18.

2. Delphi Method [Internet]. Available from: <https://www.rand.org/topics/delphi-method.html>. [Last accessed on 2021 Oct 08].
3. Nasa P, Jain R, Juneja D. Delphi methodology in healthcare research: How to decide its appropriateness. *World J Methodol* 2021;11:116-29.
4. Jünger S, Payne SA, Brine J, Radbruch L, Brearley SG. Guidance on conducting and REporting DELphi Studies (CRÉDES) in palliative care: Recommendations based on a methodological systematic review. *Palliat Med* 2017;31:684-706.
5. Evans BJW, Allen PM, Wilkins AJ. A Delphi study to develop practical diagnostic guidelines for visual stress (pattern-related visual stress). *J Optom* 2017;10:161-8.
6. Early vitrectomy for severe vitreous hemorrhage in diabetic retinopathy. Four-year results of a randomized trial: Diabetic Retinopathy Vitrectomy Study Report 5. *Arch Ophthalmol* 1990;108:958-64.
7. Writing Committee for the Diabetic Retinopathy Clinical Research Network; Gross JG, Glassman AR, Jampol LM, Inusah S, Aiello LP, Antoszyk AN, *et al.* Panretinal photocoagulation vs intravitreal ranibizumab for proliferative diabetic retinopathy: A randomized clinical trial. *JAMA* 2015;314:2137-46.
8. Figueira J, Fletcher E, Massin P, Silva R, Bandello F, Midena E, *et al.* Ranibizumab plus panretinal photocoagulation versus panretinal photocoagulation alone for high-risk proliferative diabetic retinopathy (PROTEUS Study). *Ophthalmology* 2018;125:691-700.
9. Sivaprasad S, Prevost AT, Vasconcelos JC, Riddell A, Murphy C, Kelly J, *et al.* Clinical efficacy of intravitreal aflibercept

versus panretinal photocoagulation for best corrected visual acuity in patients with proliferative diabetic retinopathy at 52 weeks (CLARITY): A multicentre, single-blinded, randomised, controlled, phase 2b, non-inferiority trial. *Lancet* 2017;389:2193-203.

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