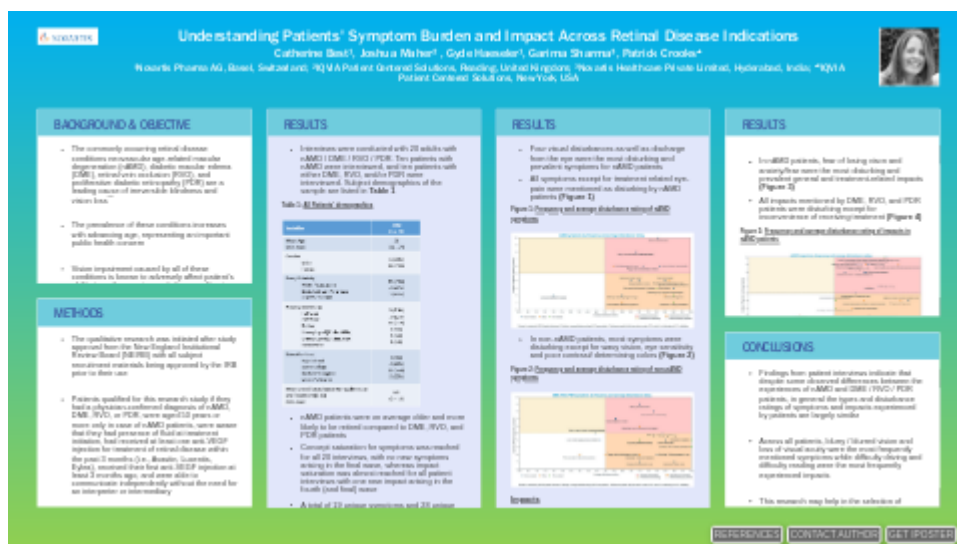


Understanding Patients' Symptom Burden and Impact Across Retinal Disease Indications



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PRESENTED AT:



BACKGROUND & OBJECTIVE

- The commonly occurring retinal disease conditions neovascular age-related macular degeneration (nAMD), diabetic macular edema (DME), retinal vein occlusion (RVO), and proliferative diabetic retinopathy (PDR) are a leading cause of irreversible blindness and vision loss¹⁻³
- The prevalence of these conditions increases with advancing age, representing an important public health concern
- Vision impairment caused by all of these conditions is known to adversely affect patient's ability to perform various activities, resulting in overall reduction in health-related quality of life⁴⁻⁷
- To better understand the disease experience of retinal disease patients, qualitative concept elicitation interviews were conducted to explore the retinal disease symptom characteristics and impacts

OBJECTIVE:

- This research aimed to understand and characterize patients' symptoms and their impacts across four retinal disease indications: neovascular age-related macular degeneration (nAMD), diabetic macular edema (DME), retinal vein occlusion (RVO), and proliferative diabetic retinopathy (PDR)

METHODS

- The qualitative research was initiated after study approval from the New England Institutional Review Board (NEIRB) with all subject recruitment materials being approved by the IRB prior to their use
- Patients qualified for this research study if they had a physician-confirmed diagnosis of nAMD, DME, RVO, or PDR, were aged 50 years or more only in case of nAMD patients, were aware that they had presence of fluid at treatment initiation, had received at least one anti-VEGF injection for treatment of retinal disease within the past 3 months (i.e., Avastin, Lucentis, Eylea), received their first anti-VEGF injection at least 3 months ago, and were able to communicate independently without the need for an interpreter or intermediary
- Trained interviewers from IQVIA conducted each patient interview via teleconference on the designated interview day
- An IRB-approved standardized interview guide was used to conduct the 60-minute interviews. The interview approach followed is aligned with recommended guidelines provided by the ISPOR Good Research Practices Task Force
- The semi-structured 1:1 interviews used open-ended questions to elicit reports of retinal disease symptoms and impacts
- During each interview, participants were asked to provide ratings of the level of disturbance of each concept on a 0-10 numeric rating scale (NRS, with 0 = “not disturbing at all” to 10 = “extremely disturbing”) for each symptom they experienced
- The interviews conducted were split into 4 “waves” of 5 participants to assess concept saturation, the point at which additional interviews do not contribute new unique concepts or information
- Concepts elicited for symptoms and impacts were defined as prevalent if these were reported by $\geq 50\%$ of patients and characterized as disturbing if the mean disturbance rating was ≥ 5.0

RESULTS

- Interviews were conducted with 20 adults with nAMD / DME / RVO / PDR. Ten patients with nAMD were interviewed, and ten patients with either DME, RVO, and/or PDR were interviewed. Subject demographics of the sample are listed in **Table 1**

Table 1: All Patients' demographics

Variables	Total (n = 20)
Mean Age (min-max)	58 (39 – 74)
Gender	
Male	6 (30%)
Female	14 (70%)
Race / Ethnicity	
White / Caucasian	14 (70%)
Black / African-American	4 (20%)
Hispanic / Latino	2 (10%)
Employment Status	
Full-time	3 (15%)
Part-time	3 (15%)
Retired	11 (55%)
Unemployed (ST disability)	1 (5%)
Unemployed (LT disability)	1 (5%)
Homemaker	1 (5%)
Education Level	
High School	0 (0%)
Some College	4 (20%)
Bachelor's Degree	11 (55%)
Master's Degree	5 (25%)
Mean Overall Disturbance Rating of Disease and Treatment (0-10) (min-max)	6.8 (2 – 10)

- nAMD patients were on average older and more likely to be retired compared to DME, RVO, and PDR patients
- Concept saturation for symptoms was reached for all 20 interviews, with no new symptoms arising in the final wave, whereas impact saturation was almost reached for all patient interviews with one new impact arising in the fourth (and final) wave
- A total of 19 unique symptoms and 28 unique impacts of retinal diseases were reported during concept elicitation across all patient interviews

Symptoms

- The most frequently mentioned symptoms across all patients were **blurry / blurred vision** (19/20 patients, nAMD: 100% ; other indications: 90%), **loss of vision / visual acuity** (14/20 patients, nAMD: 60%; other indications: 80%), and **wavy / curved vision (metamorphopsia)** (13/20 nAMD: 80%; other indications: 50%) (**Table 2**)

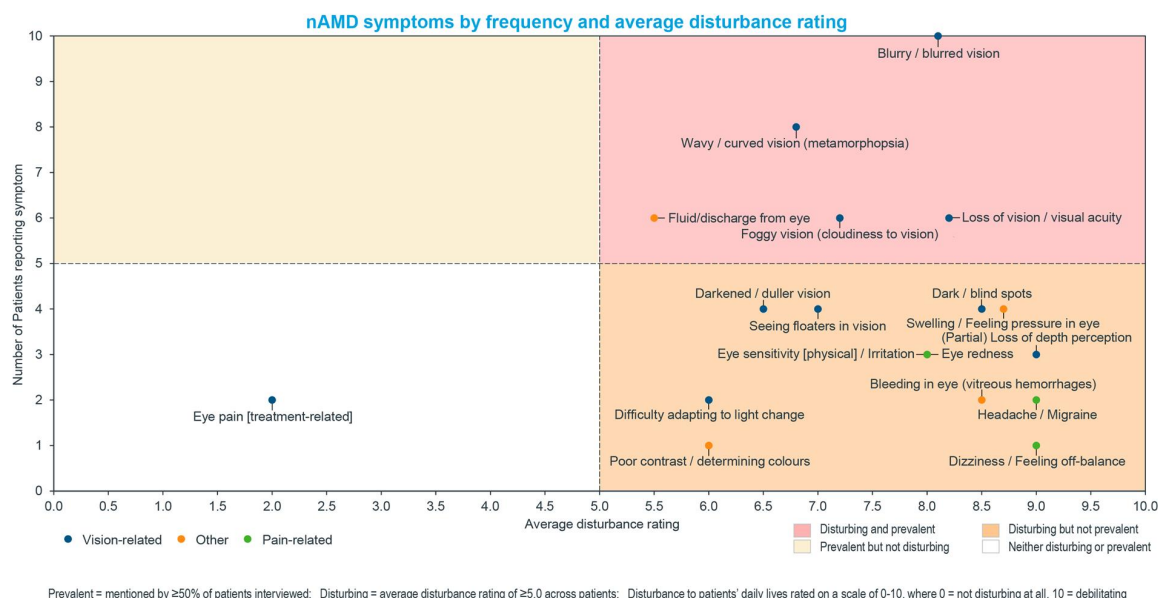
Table 2: Patient symptom experience quotes

Key Symptoms	Example Quotes
<u>Blurry/ Blurred vision</u>	
Quote 1–PT9 (nAMD)	I noticed that in one of my eyes, the left eye, <i>it was kind of blurry in the center, like a blurry spot...</i> Then I also noticed that blurry spot, it kind of changed a little bit, <i>sometimes it would get more blurry or more distorted</i> , and it seemed like it would slightly correct itself, back more toward being normal but it didn't go away
Quote 2– PT1 (nAMD)	It's not like I look out of my eyes and I'm just blurry like I've got a sheet covering me. <i>It's more of I just get blurry spots at times. It's kind of sporadic.</i> I guess you could say that's bothersome because, as much as I don't want it to be constant, when I do have it, it's frustrating.
Quote 3–PT17 (RVO)	Most of it was <i>the blurry vision like you can't see straight.</i> You can't see very good. It's something like... You know what I was doing? <i>I was closing one eye and I'd see better.</i> Like I'd see with the right eye. When I closed right eye, that when I was thinking there's something wrong. I'm not supposed to have this in one eye because my other eye is normal vision. So blurry, that's what I had.–
Quote 4–PT18 (PDR)	I was working part time at a children's store and I noticed that the cash register, <i>to see things was a little fuzzier.</i> That's one of the things I noticed. When I did the eye chart, obviously, with the left eye, my vision, I think, initially was 2200. <i>I just couldn't see anything and it really startled me</i>
<u>Visual acuity</u>	
Quote 1–PT8 (nAMD)	I would say <i>my vision is poor or not as it should be</i> , or I would say I'm having visual problems. I definitely wouldn't state something like, "I'm going totally blind," that probably would be overstating. Like I said, my side vision, peripheral or whatever you want to call it, it seems to be okay for now.
Quote 2–PT13 (nAMD)	I would say it's <i>[the loss of visual acuity]</i> definitely an 8. Because it's quite bothersome and I find that... I think the biggest concern is it would get worse... because it's going to get... more progressive, to where you eventually lose the ability to see from that eye, other than maybe shadows.–
Quote 3–PT17 (RVO)	I actually went to the doctor because I'd worn my contacts too long and I developed an ulcer, a corneal ulcer. <i>While doing the eye test, noticed that in my left eye I couldn't see the chart at all.</i> I saw changes in my eyes but I don't know, I thought for whatever reason that it was just part of the growing pains of being older.
Quote 4–PT4 (DME / RVO)	Problems seeing, to me, would be that <i>you couldn't make out what you were looking at</i> , or like if you were trying to read or something.
<u>Wavy vision</u>	
Quote 1-PT9 (nAMD)	My line of vision, I noticed that I was looking at television, and I noticed it <i>at the bottom of the television, it's straight, it's a straight line, it's what horizontal but yet it was looking crooked</i> , and I said, "My TV isn't broke, what is it?" There I realized really something was going crazy because I knew for a fact that the television wasn't crooked, it would be broken.

RESULTS

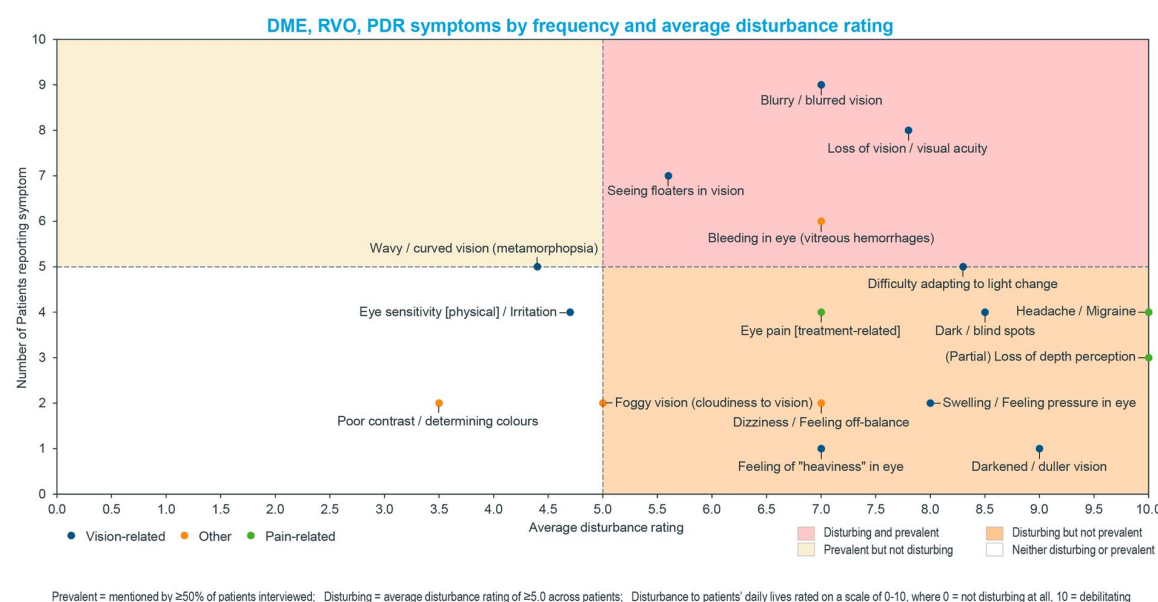
- Four visual disturbances as well as discharge from the eye were the most disturbing and prevalent symptoms for nAMD patients
- All symptoms except for treatment related eye-pain were mentioned as disturbing by nAMD patients (**Figure 1**)

Figure 1: Frequency and average disturbance rating of nAMD symptoms



- In non-nAMD patients, most symptoms were disturbing except for wavy vision, eye sensitivity and poor contrast/determining colors (**Figure 2**)

Figure 2: Frequency and average disturbance rating of non-nAMD symptoms



Impacts

- The most commonly reported immediate impacts across all patients were **difficulty driving** (19/20 patients; nAMD: 100%; other indications: 90%), **difficulty reading** (18/20 patients; nAMD: 90% ; other indications: 90%), **difficulty participating in hobbies** (17/20 patients; nAMD: 90% ; other indications: 80%), and **difficulty using mobile phones** (16/20 patients; nAMD: 90% ; other indications: 70%) (**Table 3**)

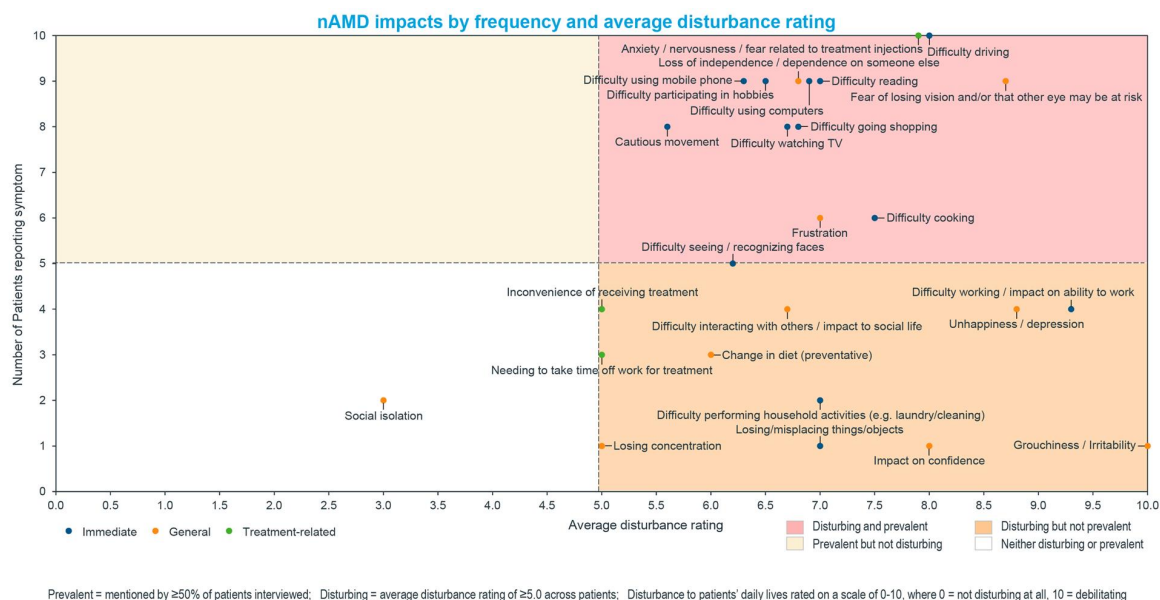
Table 3: Patient impact quotes

Key Impacts	Example Quotes
<u>Difficulty driving</u>	
Quote 1 -PT13 (nAMD)	"Okay, imagine driving in Manhattan or something and <i>you just can't see signs coming up fast on you</i> , if you don't know where you are going. That's when I knew something was wrong."
Quote 2- PT10 (DME)	"I just...it <i>hurts my eyes to see all the bright lights at night shining at my face</i> . I prefer to not drive at night. That's a preference, not necessarily a symptom."
<u>Difficulty reading</u>	
Quote 1-PT1 (nAMD)	"I just get blurry spots at times. It's kind of sporadic. I guess you could say that's bothersome because, as much as I don't want it to be constant, when I do have it, it's frustrating. <i>I may be in the middle of looking at a book or doing something and then I get this blurry spot and it takes me away from concentration.</i> "
Quote 2-PT15 (RVO)	"Well, after the treatment, obviously, I don't read. I don't do anything. But after the treatment, I think I see better. Plus I don't...I listen to the books that you can listen to. So that's what I do. I don't even read because it's not good for the eyesight anyway."
<u>Difficulty participating in hobbies</u>	
Quote 1-PT3 (nAMD)	I do <i>[feel self-conscious wearing the eye patch]</i> because people always will stare... <i>I don't play golf as often as I was playing, for that reason.</i> I have played it from time to time. But that's one of the things I noticed is that even with the patch; it seems like there's more strain that's put on that left eye. So that's definitely one of the things that I think I've cut back on.
Quote 2-PT16 (RVO)	Yeah, sewing. <i>To put the thread in the needle, sewing was a problem.</i> I stopped doing that some time ago. It's not the same. Your vision is not the same. You have to focus on everything, you have to pay more attention to everything than it was before.
<u>Difficulty using mobile phone</u>	
Quote 1-PT2 (nAMD)	"I use an iPhone. How can I say that? Yes, you <i>have to see things maybe two or three times to concentrate.</i> Like when I look at number I have to just make sure what I'm doing. Like very fine things twice or three times."
Quote 2-PT16 (RVO)	"Like I said, reading was a problem so it was a little bit hard to looking for something. From the Google or something it's hard, <i>especially on the phone where the letters are really small.</i> "

RESULTS

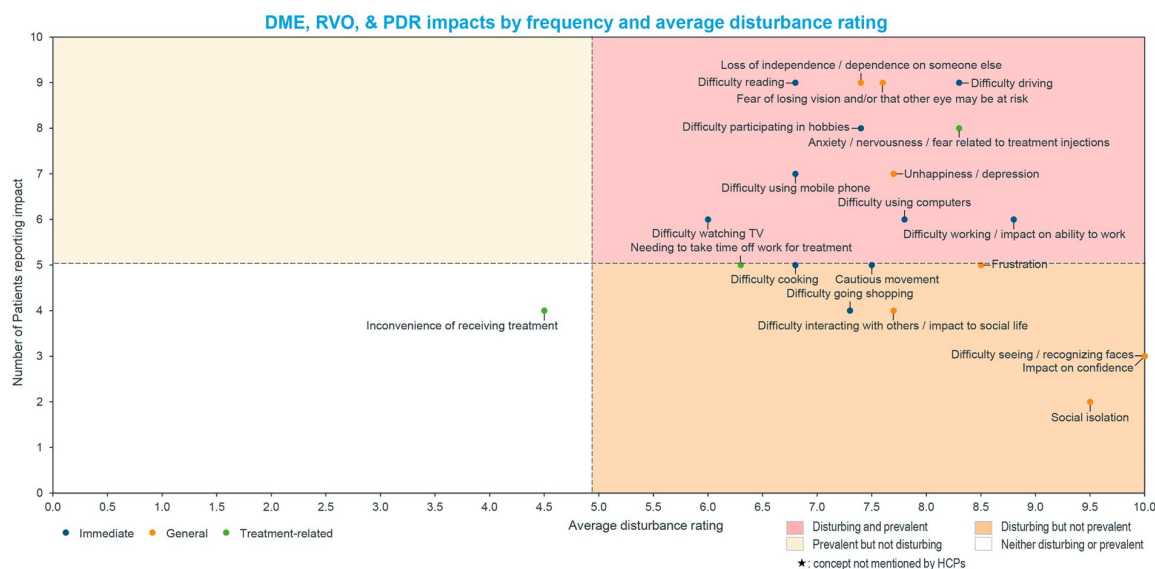
- In nAMD patients, fear of losing vision and anxiety/fear were the most disturbing and prevalent general and treatment-related impacts (**Figure 3**)

Figure 3: Frequency and average disturbance rating of impacts in nAMD patients



- All impacts mentioned by DME, RVO, and PDR patients were disturbing except for inconvenience of receiving treatment (**Figure 4**)

Figure 4: Frequency and average disturbance rating of impacts in non-nAMD patients



- All general and treatment-related impacts categorized as disturbing and prevalent in nAMD were also categorized as such in the other retinal disease conditions

CONCLUSIONS

- Findings from patient interviews indicate that despite some observed differences between the experiences of nAMD and DME / RVO / PDR patients, in general the types and disturbance ratings of symptoms and impacts experienced by patients are largely similar
- Across all patients, blurry / blurred vision and loss of visual acuity were the most frequently mentioned symptoms while difficulty driving and difficulty reading were the most frequently experienced impacts
- This research may help in the selection of suitable patient-reported outcome (PRO) measures for inclusion in future clinical trials in nAMD, DME, RVO, and/or PDR. It may potentially also inform the development of a new composite PRO that measures relevant patient symptoms and their impact on health-related quality of life for use across all four of these indications

REFERENCES

Mitchell J, Bradley C. Quality of life in age-related macular degeneration: a review of the literature. *Health and quality of life outcomes* 2006;4:97-97.