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Provider Use of Collaborative Goal Setting with Glaucoma Patients

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Abstract

Purpose—The purpose of this preliminary study was to describe the extent to which providers used collaborative goal setting and individualized assessment with patients who were newly prescribed glaucoma medications.

Methods—English-speaking glaucoma suspect patients from six ophthalmology clinics who were newly prescribed glaucoma medications had their medical visits video-tape recorded and were interviewed after the visits. The video-tapes were transcribed and coded to examine provider use of collaborative goal setting and individualized assessment.

Results—Fifty-one patients seeing 12 ophthalmologists participated. Providers gave patients glaucoma treatment options during 37% of the visits; only five providers gave patients treatment options Providers asked for patient treatment preferences in less than 20% of the visits; only two providers asked for patient treatment preferences. Providers were significantly more likely to ask African American patients for their preferences or ideas concerning treatment than non-African American patients (Pearson chi-square= 4.1, p=0.04). Providers were also significantly more likely to ask African American patients about their confidence in using glaucoma medication regularly than non-African American patients (Pearson chi-square=8.2, p=0.004). Providers asked about patient views about glaucoma in less than 20% of the visits; five providers asked patients their views on glaucoma and its treatment. Providers were significantly more likely to ask African American patients about their views of glaucoma than non-African American patients (Pearson chi-square=5.62, p=0.02).

Conclusions—Eye care providers often did not use collaborative goal setting or conduct individualized assessments of patient views of glaucoma when prescribing treatment for the first time.

Keywords

goal-setting; assessment; glaucoma; medications

Glaucoma is a chronic asymptomatic disease like high blood pressure is. In glaucoma, the goal is to reduce the intraocular pressure in the eye.¹ The American Academy of Ophthalmology Preferred Practice Pattern for Primary Open-Angle Glaucoma states that intraocular pressure can be lowered by medical treatment (e.g. medications, laser therapy, or incisional glaucoma surgery).² Medical treatment and laser therapy are the most commonly accepted initial interventions to lower IOP in glaucoma patients.³ Each topical class of glaucoma medications has different side effects profiles and some patients may tolerate certain side effects better than others.⁴⁻⁸ Additionally, eye drops are often difficult to administer.^{7,9,10} Therefore, it becomes important for providers to discuss different treatment options with patients because some may tolerate certain medications and dosing regimens better than others.¹¹

Wu et al.¹ found that glaucoma self-management behavior was significantly associated with vision-related quality-of-life. Self-management behavior is critical when managing chronic diseases.¹² Glaucoma is different than other chronic diseases in that eye drop instillation is usually needed and this is a lifelong disease in which many patients have to manage the condition over time by taking their prescribed eye drops with the ultimate goal of constant reduction of intraocular pressure and vision preservation.¹ This chronic nature of the disease is compounded by potential side effects.¹¹ One framework that has been applied to improving self-management behavior in individuals with chronic diseases is the Resources and Supports for Self-Management (RSSM).¹² This framework emphasizes two key components that are important for providers to use when patients are newly diagnosed with a chronic disease: (1) individualized assessment and (2) collaborative goal setting. Individualized assessment involves exploring the patient's personal and cultural perspective on the chronic disease and how it will impact their life.^{12,13} Conducting an individualized assessment with newly diagnosed glaucoma patients might be important to better understanding patients' views of glaucoma and glaucoma treatment options, which is important since these views could impact patient adherence. Collaborative goal setting involves empowering patients and asking for their input when treatment decisions are being made.¹² Collaborative goal setting is being applied in several different disease states such as cardiac rehabilitation,^{14,15} asthma,¹⁶ osteoporosis,¹⁷ psychiatry,¹⁸ and diabetes.^{13,19} Since there are different treatment choices for the initial treatment of glaucoma such as laser therapy or medications (prostaglandin analogs, beta-blockers), engaging in collaborative goal setting can help eye care providers pick the treatment options that are most favored by the patients.

To our knowledge, no one has previously examined the extent to which eye care providers utilize collaborative goal setting and conduct an individualized assessment when prescribing

glaucoma medications for the first time. Therefore, the purpose of our study was to conduct a preliminary study to examine: (a) the extent to which providers used collaborative goal setting and individualized assessment with patients who are newly prescribed glaucoma medications and (b) how patient age, gender, race, and literacy are associated with whether providers used collaborative goal setting and individualized assessment.

METHODS

Procedure

English-speaking adult glaucoma suspect and glaucoma patients were enrolled at six geographically distinct ophthalmology clinics located in four states. Two sites were private offices and four were affiliated with academic ophthalmology departments. At each site, clinic staff referred eligible patients to research assistants who were based at the clinics. Written patient and provider consent was obtained. The research assistant administered the Mental Status Questionnaire after consent was obtained. This 10-item scale assesses patients' competence to participate in the research. It has approximately the same sensitivity and specificity as the Folstein Mini-Mental Status Examination, but it is easier and faster to administer.²⁰ Patients who make at least five errors were ineligible. Two patients were ineligible.

Providers completed a short demographic questionnaire after providing consent. The patient's medical visit was video-tape recorded. Video-tapes were kept if they fit into one of two criteria: (a) the patient was diagnosed with glaucoma and glaucoma medications were prescribed for the first time or (b) patients were already on glaucoma medications. Patients were interviewed after their medical visits. This manuscript focuses on those 51 individuals who were prescribed glaucoma medications for the first time. The study was approved by the following institutional review boards: University of North Carolina, Duke University, Emory University, and the University of Utah.

Measurement

Socio-Demographic Characteristics—Patient age was measured as a continuous variable. Self-reported patient race was measured as a categorical variable (White, African American, Asian, Native American, and Hispanic). We then recoded into African American and non-African American since the majority of the non-African American patient sample was White (91 %). Gender was measured as a dichotomous variable. Each patient received the Rapid Estimate of Adult Literacy in Medicine (REALM). This is a validated, rapid screening instrument designed to identify patients who have difficulty reading common medical and lay terms that are routinely used in patient education materials.²¹ We choose the REALM because it has high face validity and high criterion validity, it has been well received by patients, and it only takes two to three minutes to administer and score.²¹ Patient scores on the REALM correspond to reading levels, which were dichotomized (score of 0-60=eighth grade and below, 61-66=ninth grade and above). Whether the patient has insurance and whether the patient has prescription drug insurance were measured as a dichotomous variables (yes/no).

Physician age and years since graduating from medical school were measured as continuous variables and physician gender was measured as a dichotomous variable. However, since physician age and years since graduating from medical school were so highly correlated (Pearson correlation = -0.94 , $p=0.000$), we only used physician age in our analyses. Self-reported physician race was measured as a categorical variable (White, African American, Asian, Native American, and Hispanic).

Communication Measures—Medical visit video-tapes were transcribed into text verbatim with identifiers removed. A detailed coding tool was developed over a one-year period using aspects of the key resources and supports for self-management model (RSSM) as a guide.^{12,13,19} The transcripts were reviewed by a research assistant who met twice a month with the investigators to develop and refine the coding rules.

Using the coding tool for transcribed medical visits, coders recorded whether the provider participated in the following aspects of collaborative goal setting: (a) patient is given choices about treatment, (b) provider asks for preferences or ideas on treatment, (c) provider asks patient to talk about treatment goals, and (d) patient helps set treatment goals. The coders also recorded whether the provider conducted the following aspects of an individualized assessment: (a) asks the patient about their views of glaucoma and/or its treatment, asks the patient about how glaucoma will impact their life, (b) asks about confidence in using glaucoma medication regularly, and (c) asks about intention to adhere to glaucoma medications.

Three research assistants coded 25 of the same transcripts throughout the study period to assess inter-coder reliability which was calculated using inter-rater correlations. Inter-rater reliability was 0.82 for giving the patient treatment choices and 0.92 for the doctor asking for patient preferences for treatment. There was not enough variability to calculate reliability for whether the provider asked the patient to discuss treatment goals and whether the patient helped set the treatment goals because these communication behaviors occurred so infrequently, but there was 100% agreement among the coders. Inter-rater reliability was 0.80 for whether the provider asked the patient about their views about glaucoma or its treatment and 0.70 for whether the patient felt confident in taking medication regularly. There was not enough variability to calculate reliability for whether the provider asked the patient how glaucoma might impact their life and the patient's intention to adhere to treatment because each occurred so infrequently, but there was 100% agreement among the coders.

Analysis

We set the a priori level of statistical significance at $p < 0.05$. We first present descriptive statistics and describe the extent to which physicians utilized collaborative goal setting and individualized assessment with patients. We also present qualitative examples of the communication techniques used by providers for collaborative goal setting and individualized assessments with their patients. Finally, we present the extent to which each physician used collaborative goal setting and individualized assessment.

RESULTS

Fifteen physicians who cared for glaucoma patients agreed to participate in the study; one physician refused to participate for a participation rate of 94%. Fourteen physicians were White and one was African American. Ten physicians were male (66.7%). Physician age ranged from 26 to 66 years (mean 40.8 years, standard deviation 11.7 years). Twelve of these physicians cared for the 51 patients who were newly prescribed glaucoma medications.

Eighty-six percent of eligible patients participated in the study (N=279). Eighteen percent of patients (N=51) were prescribed glaucoma medications for the first time and this analysis focuses on these individuals. Table 1 presents the patient demographics. Thirty-five percent of the sample was male and 27.5% were African American.

Provider Use of Collaborative Goal Setting

Table 2 presents the extent to which providers engaged in collaborative goal setting. Providers gave patients choices about treatment during 37% of the visits (N=19). As shown in Table 3, only five providers gave patients treatment choices. Out of the 19 visits where providers gave patients treatment choices, 13 of these visits were with one provider. Collaborative goal setting could involve providers giving patients a choice of medications versus other treatment options such as laser therapy or it could involve giving the patient a choice between medications. An actual example of the provider giving the patient several treatment options is presented below (D=doctor, P=patient).

D-And the two options that are kind of first line treatment are laser or eye drops.

D-Um, the benefit of the laser is that it would um, not require you to put something in your eye every day.

P-(Nods head yes).

D-Um and its pretty well tolerated laser. And it works pretty well.

D-Most people do respond.

P-(Nods head yes).

D-But some people don't respond.

D-Um, the downside of the laser is that it wears off over time.

D- So about five years probably fifty percent or maybe a little bit more of people aren't responding to the laser.

P-(Nods head yes).

D-And then you have to think about the next step which would be to repeat the laser or to um, go to eye drops. Okay?

D-So um, and then the other option is drops.

D-The benefit of eye drops is um, you know, it's not permanent.

D-Um in the sense that we can stop them and the fact is they're reversible.

D-Um the downside to them is that they can have side effects. And that does require you to take the drops on a regular basis. Okay?

P-(Nods head yes).

D-So there are, there's four main kinds of drops that we, that we can give just for glaucoma. And two of them are dosed just once a day so those are the ones I typically start with because it's easier to remember to do something once a day rather than more than once a day.

P-(Nods head yes).

So what do you think?

P-I mean I'll go with the drops but uh, why would you even take them more than once a day though?

D-So, the, the two other drops that aren't once a day are either two or three times a day. And the reason they're dosed that way is because the uh, timeframe which they soak in and sort of soak out of the body, kind of wear off, is shorter. So it um, they, they just don't last a whole day. They don't cover your treatment for a whole day so you have to dose them more often.

P-Okay.

In contrast, below is an example of a provider not giving a patient a choice about glaucoma treatment options. In the excerpt below, the doctor tells the patient he/she is going to use Travatan and does not present any alternatives. The doctor continues to talk without giving the patient a chance to say anything other than "Okay".

D-One of the issues is that glaucoma doesn't have any symptoms. It doesn't hurt and people don't know they have it. And it's a slow gradual disease. And one of the best things to do is head it off before it starts. By using eye drops to lower your eye pressure, um, we know that we can arrest the progression of the disease. At the very least slow it down, but mostly we just stop it from getting worse. Okay?

P-Ok.

D-Um, so when we talk about taking eye drops, you're going to use Travatan to lower your eye pressure. This is a drug that um, you take once a day. You're gonna take it in both eyes, and we sort of recommend that you take it before bedtime at night. Because I've said most people's eye pressures are highest in the morning. And this works best a few hours after you take it, so it helps us control that high spike up in the morning so, keep your pressures more consistent as well as just lowering it.

P-Ok.

Providers were significantly more likely to give younger patients (t -test= -2.20 , $p=0.03$) and male patients (Pearson chi-square= 3.98 , $p=0.04$) choices about glaucoma treatment. These borderline statistically significant results should be interpreted with caution. Providers gave 55% of male patients choices about glaucoma treatment compared to 27% of females. Health literacy and race were not significantly associated with whether the provider gave patients choices about treatment.

The provider asked for patient preferences or ideas about treatment in less than 20% of the visits. As shown in Table 3, only 2 providers asked patients for their preferences or ideas concerning treatment. Providers were significantly more likely to ask African American patients for their preferences or ideas on treatment than non-African American patients (Pearson chi-square= 4.1 , $p=0.04$). These borderline statistically significant results should be interpreted with caution. Providers asked 35.7% of African Americans their treatment preferences compared to 11% of non-African Americans.

Providers Conducting an Individualized Assessment about Patient Views on Glaucoma and Its Treatment

Table 2 also illustrates the extent to which providers conducted individualized assessments. Providers asked patient views about glaucoma and/or its treatment during only 16% of visits. One provider stated to a patient, "Glaucoma can be treated but I think the first question is: What is Glaucoma? How would you explain that to someone?" As shown in Table 3, only five providers asked patients about their views on glaucoma and its treatment. Providers were significantly more likely to ask African American patients about their views of glaucoma and/or its treatment than non-African American patients (Pearson chi-square= 5.62 , $p=0.02$). They asked 36% of African American patients about their views on glaucoma and/or its treatment compared to 8% of non-African American.

Providers asked about patient confidence in using glaucoma medication regularly during 5.9% of visits. One provider asked a patient "Do you feel like you're going to be confident to do this every day?" As shown in Table 3, only two providers asked about patient confidence in using glaucoma medications regularly. Providers were significantly more likely to ask younger patients about their confidence in using glaucoma medications regularly than older patients (t -test= -2.09 , $p=0.04$). Providers were also significantly more likely to ask African American patients about their confidence in using glaucoma medication regularly than non-African American patients (Pearson chi-square= 8.2 , $p=0.004$). These borderline statistically significant results should be interpreted with caution. Providers asked 21% of African American patients and no non-African American patients about their confidence in using glaucoma medications on a regular basis. Providers did not ask about how glaucoma would impact the patient's life during any visits. Providers did not ask about the patient's intention to adhere to glaucoma medications in the future during any visits.

DISCUSSION

Collaborative goal setting did not occur very often when patients were newly started on treatment for glaucoma. Providers were significantly more likely to ask African American patients about their treatment preferences than non-African American patients. This may be because providers were aware that glaucoma is the leading cause of irreversible blindness among African Americans²² and prior work has found that African Americans are less adherent to their glaucoma medications than White patients.^{9,23,24} However, the results of our preliminary study need to be interpreted with care, because very few providers even engaged in collaborative goal setting.

Providers did not ask patients about treatment goals nor engage any patients in helping to set treatment goals during any of the visits. Providers should consider communicating with patients about their treatment goals. Collaborative goal setting or shared decision-making is important because it allows the patient to be a partner in setting treatment goals which can motivate them to better manage their glaucoma by following the agreed upon treatment plan and may drastically improve adherence.¹²

Rarely did providers conduct individualized assessments with patients. Individualized assessments allow providers to explore the patient's perspective on glaucoma and how it will impact their life.^{12,13} They were significantly more likely to ask African American patients about their views of glaucoma and about their confidence in using glaucoma medications regularly than non-African American patients. This could be because prior work has found that African Americans are less adherent to their glaucoma medications than White patients.^{9, 23,24} Providers should make sure to ask all patients, regardless of their race about their views about glaucoma as well as its treatment.

Providers did not ask any patients how glaucoma impacted their lives. This is important for providers to ask about since patients newly diagnosed with glaucoma will have to live with the condition and start regularly using the treatment for it or have surgery. Understanding the patient's perspective about how glaucoma will impact their life can help providers know what needs to be done to help the patient live with and self manage their glaucoma.

Also, providers should assess patient confidence in using medication regularly and patient intention to adhere in the future. This could help providers understand potential barriers that a patient may have to starting treatment. If a patient is not confident in using glaucoma medication regularly or if they do not intend to adhere, these are important factors for the provider to know about, because the provider might then consider treatment options.

The Resources and Supports for Self-Management (RSSM)¹² emphasizes two key strategies that are important for providers to use when patients are newly diagnosed with a chronic diseases-individualized assessment and collaborative goal setting session. One way to ensure this is to cover the following with patients when newly prescribing treatment for glaucoma: (a) ensure a shared understanding of the patient's illness, (b) present treatment options, (c) discuss the patient's values and lifestyle factors, and (d) present a clear statement of recommended treatment options and encourage patient choice.^{25,26} The American Academy of Ophthalmology's Preferred Practice Pattern for Primary Open-Angle Glaucoma states

“the patient and ophthalmologist together decide on a practical and feasible regimen to follow in terms of dosing, cost, and adherence in the context of the patient's age and preferences”.¹¹ Involving patients in decision-making has been associated with a reduction in health care costs and utilization.²⁷ Future research should investigate whether other types of eye care providers such as optometrists or osteopathic physicians are more likely to use collaborative goal setting and conduct individualized assessments when prescribing treatments to patients.

This study has several limitations. Our preliminary results should be interpreted with care, because a limited number of providers engaged in individualized assessments. Providers and patients both knew the visit was being recorded but they did not know the study hypotheses. Selection bias could be another limitation since the ancillary staff did not track the characteristics of the patients who declined to speak with the research assistant to learn more about the study. Another limitation is the small sample size (51 patients seeing 12 providers) and the limited use of collaborative goal setting and individualized assessment by only a few providers, which caused us to be unable to conduct multivariable analyses. However, a strength of the sample is that it is comprised of patients who were newly diagnosed with glaucoma and prescribed glaucoma medications. Another limitation is that we did not ask patients if they wanted to be involved in treatment decisions so we could not examine how this was associated with provider communication behaviors. Despite these limitations, the study presents new information on the extent to which collaborative goal setting was used and the extent to which providers conducted individualized assessments on patient views of glaucoma when patients were newly diagnosed with glaucoma and prescribed glaucoma medications for the first time.

CONCLUSION

In this preliminary study, eye care providers did not often use collaborative goal setting or conduct individualized assessments of patient views of glaucoma and its treatment when prescribing treatment for the first time to glaucoma patients.

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Table 1

Patient characteristics who are newly started on a glaucoma medication (N=51).

	Percent (N)
Gender	
Male	35.3 (18)
Female	64.7 (33)
Race	
African American	27.5 (14)
Non-African American	70.6 (36)
Missing	1.9(1)
REALM	
Eighth grade or lower	11.8 (6)
Ninth grade or higher	88.2 (45)
Has health insurance	
Yes	96.1 (49)
No	3.9 (2)
Has prescription drug insurance	
Yes	94.1 (48)
No	5.9 (3)
Range; Mean (Standard Deviation)	
Age in years	25-93; 63.7 (15.9)
Years of education	7-25; 15.6 (3.8)

REALM=Rapid Estimate of Adult Literacy in Medicine

Table 2

Extent to which physicians engaged in collaborative goal setting and individualized assessment with patients who were prescribed glaucoma medications for the first time (N=51)

	Percent (N)
Collaborative goal setting	
Patient is given choices about treatment	37.3 (19)
Provider asks for preferences or ideas on treatment	17.6 (9)
Provider asks patient to talk about treatment goals	0 (0)
Patient helps set treatment goals	0 (0)
Individualized assessment	
Asks patient about views of glaucoma and/or its treatment	15.7 (8)
Asks the patient about how glaucoma will impact their life	0 (0)
Asks about confidence in using medication regularly	5.9 (3)
Asks about intention to adhere in future	0 (0)

Table 3

Characteristics of patients who were newly prescribed a glaucoma medication and use of collaborative goal setting and individualized assessment by physician.

Clinic Provider	% female patients	% African American patients	% patients given choice about treatment	% patients where provider asks for preferences or ideas about treatment	% patients where provider asks views of glaucoma and its treatment	% patients where provider asks about confidence in using medication regularly
Clinic A						
Provider A1 61 year-old Male	87.5% (7/8)	0% (0/8)	0% (0/8)	0% (0/8)	12.5% (1/8)	0% (0/8)
Provider A2 31 year-old female	100% (1/1)	0% (0/1)	100% (1/1)	0% (0/1)	0% (0/1)	0% (0/1)
Provider A3 28 year-old female	100% (2/2)	100% (2/2)	0% (0/2)	0% (0/2)	50% (1/2)	100% (2/2)
Clinic B						
Provider B1 34 year-old male	50% (4/8)	0% (0/8)	37.5% (3/8)	0% (0/8)	25% (2/8)	0% (0/8)
Provider B2 66 year-old male	0% (0/2)	0% (0/2)	0% (0/2)	0% (0/2)	0% (0/2)	0% (0/2)
Provider B3 35 year-old female	100% (4/4)	0% (0/4)	0% (0/4)	0% (0/4)	0% (0/4)	0% (0/4)
Clinic C						
Provider C1 35 year-old female	100% (1/1)	0% (0/1)	0% (0/1)	0% (0/1)	0% (0/1)	0% (0/1)
Provider C2 45 year-old male	100% (1/1)	0% (0/1)	0% (0/1)	0% (0/1)	0% (0/1)	0% (0/1)
Clinic D						
Provider D1 35 year-old female	25% (1/4)	50% (2/4)	25% (1/4)	0% (0/4)	50% (2/4)	25% (1/4)
Provider D2 46 year-old male	50% (7/14)	50% (7/14)	92.8% (13/14)	57.1% (8/14)	14.3% (2/14)	0% (0/14)
Clinic E						
Provider E3 42 year-old male	100% (4/4)	75% (3/4)	25% (1/4)	25% (1/4)	0% (0/4)	0% (0/4)
Clinic F						
Provider F1 49 year-old male	50% (1/2)	0% (0/2)	0% (0/2)	0% (0/2)	0% (0/2)	0% (0/2)