

FROM THE COVER

WHAT'S MISSING IN PATIENT EDUCATION

A different approach better serves patients with diabetic retinopathy

By Albert J. Augustin, MD

The treatment of chronic or progressive retinal disorders such as diabetic retinopathy varies depending on the extent of the disease.

In most cases the reasons for patients to lose vision is not due an inability to treat their disease, but to a lack of awareness. Raising awareness about chronic or progressive eye diseases is an important element for both, early diagnosis and treatment.

To control or prevent deterioration of vision, appropriate education is mandatory. This helps to encourage the patients at risk to enter treatment in time. To ensure

success developing educational materials that are regionally and culturally appropriate is required.

KAP

KAP (knowledge-attitude-practice) is a method to collect specific information about what is patient-known, believed and done in relation to a particular topic. The knowledge is referred to as the community's understanding of any given topic. Attitude refers to their feelings toward the subject as well as preconceived ideas that they may have toward it. Practice is the way in which they demonstrate their knowledge and attitude through their actions.

A study by Khalaf et al.¹ has been conducted to determine the level of knowledge, attitude, reported practice and to identify the impact of an educational programme on a diabetic population. An interview questionnaire was designed by the researchers after reviewing the related literature to assess the details regarding socio-demographic data, knowledge, attitude, reported practices, and degree of adherence to antidiabetic medication. This was followed by an exhaustive educational programme, conducted in a diabetic clinic. The teaching time was scheduled according to availability of the participant and the coordination between the research-

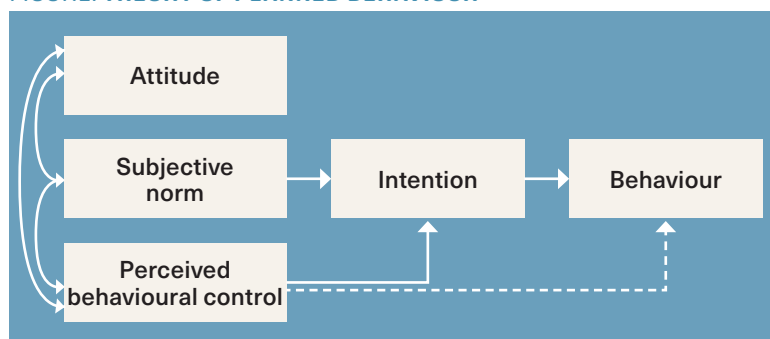
ers and participants. Teaching methods and materials were simple such as lecture, picture, video, and discussion. Media handouts regarding diabetic retinopathy were prepared and distributed to every participant at the end of the programme. The contents of the programme was divided into sessions, including introduction about diabetes, definition, signs and symptoms, risk factors, complications and prevention of diabetic retinopathy.

The results were less than encouraging. In light of results of the study by Khalaf et al.¹, 16.5% of the study group did not know the type of diabetes they had. Among those who knew, 20.5% had type 1, and 63% had type 2 diabetes. This finding was not in line with Giloyan et al.², who found that even about 62.9% of participants did not know the type of diabetes they were suffering from, while only 2.9% of them knew they had type 1, and 34.2% had type 2 diabetes. This discrepancy is probably related to the level of education of the study population and the level of awareness about diabetes.

Furthermore, about half of the studied group was obese, with BMI 31.3kg/m². These results were in agreement with Cheung and Wong³ who reported that many eye diseases such as cataract, glaucoma, and diabetic retinopathy have been linked with obesity.

The results of the study by Khalaf et al.¹ disclosed that only 11.1% of participants measured their blood glucose regularly. This might be attributed to the fact that participants lacked information about necessary details such as importance of measuring blood sugar persistently.

FIGURE. THEORY OF PLANNED BEHAVIOUR



This result is similar to that reported by the study conducted by Balasubramanian et al.⁴, who studied awareness and practices of eye effects among people with diabetes in rural India. They reported that 88.6% tested their blood sugar at least once every three months.

These results show that even basic knowledge about the disease entity is missing on a bigger scale.

Regarding ophthalmological consultations the results are somewhat incongruent, probably explainable by demographic factors. In the study by Khalaf et al.¹, 60% of studied sample consulted eye specialists and 35.4% of them have had eye examinations at least within one year. This could be explained by the fact that patients were aware of the effect of DM on their eyes. The study agreed with Mwangi and coworkers⁵, who reported that 50% of all the respondents went for eye check-ups. Of the 50% who went for eye checkups, 27% of them went once a year. Also, it agrees with Al Zarea,⁶ who observed that about 95% of all the participants went for regular ocular examinations. However, these results are not in agreement with those of Prabhu et al.⁷ who reported that only 16.5% of diabetic patients were referred for an eye examina-

tion by their physicians.

Regarding the knowledge of diabetic retinopathy, the results are shattering. Srinivasan NK et al.⁸ observed that only 4.5% of studied sample had good knowledge about retinopathy. Also, Geethadevi et al.⁹ found that 60.8% had no knowledge of diabetic retinopathy and Panigrahi et al.¹⁰ reported that 69.0% of the study population had poor knowledge of diabetic retinopathy. This implies that a significant proportion of diabetic patients have poor knowledge of DR and that there is a need for an educational programme about DR.

Concerning the relation between participants' knowledge in pre/post tests and socio-demographic characteristics, the results of the study by Khalaf et al.¹ revealed the lowest mean knowledge score, 5.20 ± 0.1 was seen in illiterate respondents while in educated respondents it was 5.74 ± 0.2 and became 16.56 ± 1.8 and 16.69 ± 1.8 respectively in post-test (questionnaire and educational programme), with a statistically significant relation ($P < 0.001$). This further supports the proposition that education is important in creating awareness and education plays a significant role in improving patients' information.

TPB

According to the TPB (Theory of Planned Behaviour), a patient's attitude is his or her favorable or unfavorable evaluation to perform a particular behaviour that has been formed through his or her mental perceptions or past experiences. Due to the important role of patients with chronic retinal disorders in adopting health behaviours to prevent progression or complications, the importance of performing educational interventions based on appropriate behavioural theories for these patients is a significant key factor.

Prevention care in the exemplary case of a patient with diabetes would include blood sugar control, regular visits to an ophthalmologist and timely eye examinations, adherence to a medication plan and to an adequate diet.

In a study by Hosseini et al.¹¹ eye care behaviours in patients with diabetes have been taught based on TPB constructs and the effect of this training measured by assessing the behaviour and blood sugar levels. The educational programme consisted of 4 consecutive sessions with the first focusing on improving patients' awareness of diabetes, familiarity with the structure of the eye and proper eye care. The second session focused on patients' attitudes and subjective norms, including teaching them about the importance and benefits of proper eye care and the negative consequences of not taking caring of it. The third session focused on perceived behavioural control, familiarising patients with the barriers to retinopathy and improving patients' intentions to take proper care of their eyes. In the

TABLE 1.

Comparison of the intervention and control groups, concerning TPB before and after the intervention

Group Variable	Control		Intervention		P-value ^a
	Mean	SD	Mean	SD	
Knowledge					
Before	4.4	1.8	4.3	1.6	0.634
After	4.5	1.8	7.9	1.9	0.001
P-value ^b	0.775		0.001		
Attitude					
Before	32.17	2.05	32.19	2.37	
After	32.64	2.42	35.56	4.30	
P-value ^b	0.335		0.001		
Subjective norm					
Before	21.04	3.84	20.90	4.49	0.870
After	16.22	3.61	21.11	4.4	0.001
P-value ^b	0.095		0.049		
Knowledge					
Before	10.28	3.19	11.04	2.82	0.226
After	8.31	2.70	11.26	2.80	0.001
P-value ^b	0.367		0.092		
Knowledge					
Before	25.78	2.76	25.5	3.8	0.80

^a Independent t test

^b Paired t test

TABLE 2.

Comparison of the intervention and control groups, concerning FBS and HbA1C before and after the intervention

Group Variable	Control		Intervention		P-value ^a
	Mean	SD	Mean	SD	
FBS					
Before	163.11	34.15	159.17	35.29	0.167
After	161.59	45.11	121.54	44.25	0.001
P-value ^b	0.089		0.001		
HbA1C					
Before	7.36	1.43	7.41	1.44	0.872
After	7.23	1.32	6.54	1.29	0.005
P-value ^b	0.099		0.043		

^a Independent t test

^b Paired t test

fourth session, patients' retinopathy preventive behaviours were improved, including regular measurements of blood sugar, adherence to a proper diet, taking the medication regularly and visiting an ophthalmologist in given intervals.

The evaluation was conducted 3 months after finalising the educational programme by using a questionnaire and measuring the blood sugar levels including HbA1C.

As a result, a significant difference could be shown between the intervention and control groups in terms of TPB constructs and preventive behaviours as well as the measured blood sugar levels.

This study, consistent with the results of other studies,¹²⁻¹⁴ clearly showed that the training of patients with diabetes based on TPB promoted preventive behaviours of ocular complications and improved control of FBS and HbA1C in the patients, regardless of ethnic origins.

Of particular significance, however, is the extent of the educational programme with this study clearly showing that changing patients' attitudes requires a longer intervention and individual personal training. Presenting educational booklets should not be used as the only way to teach and change the attitude as could be evaluated in a study by the Ottawa Hospital Research Institute,¹⁵ amongst others.

Conclusions

Teaching patients based on TPB rather than traditional methods such as handing out booklets does improve the preventive behaviour. It is highly recommended to use educational approaches in which patients participate and are

actively involved and to use visual media such as short videos to make the training more effective. ■

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