TAKING CARE OF VISION OF PATIENTS WITH DIABETES: COMPARISON BETWEEN HOSPITAL AND OUTPATIENT CARE

***Kiril Slaveykov, **Maria Orbetsova, ***Ivan Tanev, **Liubima Despotova, *Kalina Trifonova, *Katya Peeva, *Stefan Vylkanov**

**Trakia University, Medical Faculty, Bulgaria, Stara Zagora, 6000,*

***Medical University-Plovdiv, Bulgaria, 4000*

****Medical Univeristy-Sofia, Bulgaria, 1000*

Corresponding author: Kiril Stefanov Slaveykov, kirilslaveykov@gmail.com, Stara Zagora 6000, Bulgaria

ABSTRACT

Introduction: Diabetes mellitus is one of the most often diseases of contemporary society. About 8,3% of elderly population is affected by it. Only in 2014 the disease caused the death of 4,9 million patients. The regular control and follow-up of patients plays a vital role in preventing its complications.

Aims and tasks: Assessing the change of satisfaction and knowledge of patients after hospital admission.

Methods and material: Anonymous questionnaires were handed out after examination of ocular fundi of patients with diabetes. Selected questions were thoroughly analyzed and compared.

Results and discussion: Filled and fit for analysis were 21 questionnaires of hospitalized patients and 18 of non-hospitalized patients. The admitted patients have at least basic information concerning their disease in 76 % of cases compared to 55,5% of ambulatory patients. The satisfaction between the two groups is similar – 95% vs 94%.

Conclusion: Only after the disease damages the patients' organs and hospitalization becomes more frequent do the patient become interested in it.

Keywords: *diabetes, hospital admission, vision*

Introduction: Diabetes mellitus is one of the most often diseases of the contemporary society. About 8,3% of elderly population is affected by it. Only in 2014 the disease caused the death of 4,9 million patients. The regular control and follow-up of patients plays a vital role in preventing its complications.

Patients' knowledge about the disease is one of the main factor contributing to compliance in treatment, early detection of negative consequences and seeking help in time. At the same time patient satisfaction levels are of upmost importance, since an unsatisfactory telescreening program could distance the patient and result in permanent damage which could have been preventable.

The importance of patient satisfaction is established and all new technologies must adhere to its call. This becomes without any doubt more important when telemedicine is involved. The first studies about satisfaction level from telemedicine date back to 1999 when Holle et al evaluate the implementation and benefits of new information and communication technolgoies in biomedicine [2].

As Rani et al show patient satisfaction level with new technology is usually high especially when their vision is threatened [5].

Improved access, reduced cost and waiting time as well as quick examination and the ability to consult with a specialist even in rural areas are the main reasons for the excellent acceptance and high satisfaction level of new technologies. Paul et al focus their 2006 study on rural areas and report higher levels of satisfaction compared to city environment [4].

The difference is even greater in developing countries. A study from 2013 in Africa from Kurji et al reports limited or no access to specialized healthcare in most rural regions which is the

basis for the tremendous success of the research and the extremely high satisfaction level [3]. The results are confirmed in a similar study from Sharma et al in South India [6].

While satisfaction level is usually high everywhere there is a difference between urban environment and rural settings, Welch et al report excellent acceptance of telescreening by the patients, yet their results are nowhere near as good as those preformed in developing countries [7].

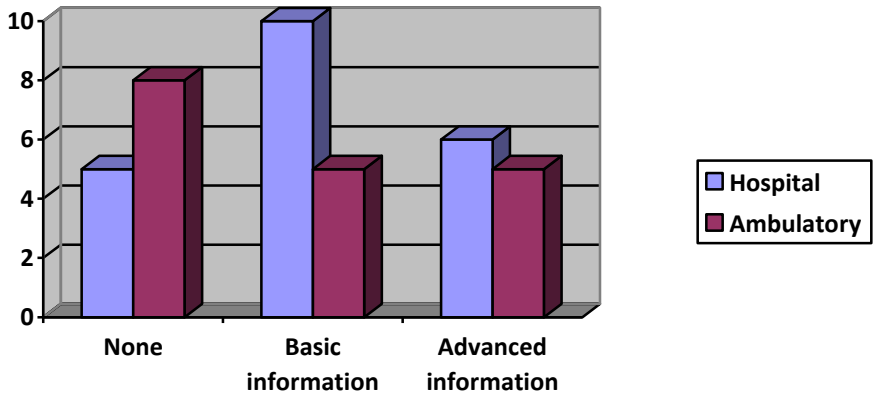
In a 2015 study from Bashshur et al researching the benefits of telemedicine in diabetes management all methods are accepted with a high satisfaction level, yet the team reports no increase in patient knowledge about the disease [1].

Aims and tasks: Assessing the change of satisfaction and knowledge of patients after hospital admission.

Methods and material: Anonymous questionnaires were handed out after examination of ocular fundi of patients with diabetes. Selected questions were thoroughly analyzed and compared.

Results and discussion: Filled and fit for analysis were 21 questionnaires of hospitalized patients and 18 of non-hospitalized patients.

Fig. 1

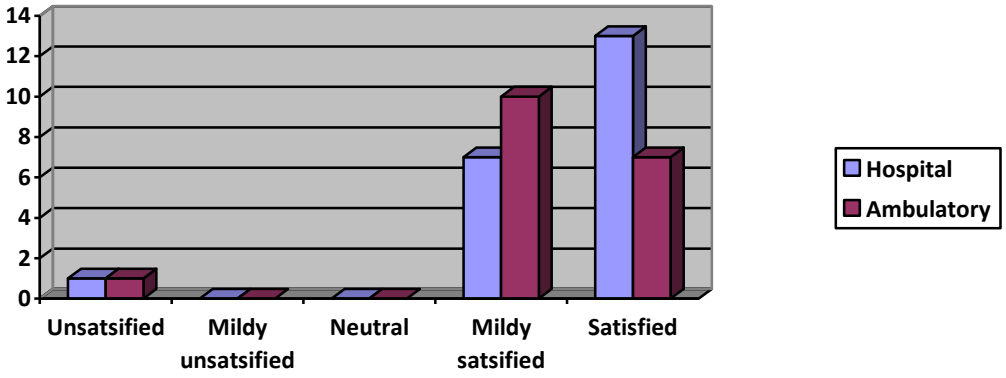


Patient information is a major concern when dealing with chronic progressive diseases. The question about information on diabetes was open and answers were grouped into three categories – no information, basic information (good blood sugar level, required yearly examination) and advanced (diets, examination by other specialist, treatment). The hospitalized patients have at least basic information concerning their disease in 76,1% of cases compared to 55,5% (fig.1) of ambulatory patients.

Concerning is the fact that 23,9 % of the hospital patients and 44,5 % of the ambulatory patients have next to no information about their disease.

There are no standards about satisfaction level evaluation and different studies use different means. We gave the patient an opportunity to grade their satisfaction level from 1 (worst) to 5 (best) and in a follow up open question to explain what they based their grade on. [Fig. 2]

Fig. 2



The satisfaction level between the two groups is similar – 95% for hospital and 94% for ambulatory patient report greater satisfaction than from standard examination.

Answers from the follow up question were grouped into three categories – easier access, lower cost and faster examination. [Table 1]

Table 1

Benefit	Hospital patient	Ambulatory patient
Easier Access	16	14
Lower cost	0	13
Faster examination	12	11

Both groups point out the faster examination time and easier access as main benefits for their grade, with the ambulatory group having lower cost of the screening procedure as an additional benefit.

Conclusion: Patient satisfaction level is of major importance when implementing new technologies. The presented screening method shows excellent satisfaction level and offers and opportunity for easier access and lower costs, while motivating patients to increase their knowledge on the subject.

References:

1. Bashshur, Rashid L., et al. "The empirical evidence for the telemedicine intervention in diabetes management." *Telemedicine and e-Health* 21.5 (2015): 321-354.

2. Holle, Rolf, and Gudrun Zahlmann. "Evaluation of telemedical services."*Information Technology in Biomedicine, IEEE Transactions on* 3.2 (1999): 84-91.

3. Kurji, Khaliq, et al. "Improving diabetic retinopathy screening in Africa: patient satisfaction with teleophthalmology versus ophthalmologist-based screening."*Middle East African journal of ophthalmology* 20.1 (2013): 56.

4. Paul, Pradeep G., et al. "Patient satisfaction levels during teleophthalmology consultation in rural South India." *Telemedicine Journal & e-Health* 12.5 (2006): 571-578.

5. Rani, Padmaja Kumari, et al. "Patient satisfaction with tele-ophthalmology versus ophthalmologist-based screening in diabetic retinopathy." *Journal of telemedicine and telecare* 12.3 (2006): 159-160.

6. Sharma, Tarun, et al. "Telescreening for Diabetic Retinopathy in South India."*Digital Teleretinal Screening*. Springer Berlin Heidelberg, 2012. 137-142.

7. Welch, Garry, Andrew Balder, and Sofija Zagarins. "Telehealth Program for Type 2 Diabetes: Usability, Satisfaction, and Clinical Usefulness in an Urban Community Health Center." *Telemedicine and e-Health* 21.5 (2015): 395-403.