

Shared Decision Making in Adult Strabismus Care

Ala Paduca¹, Corina Cardaniuc¹, Per Olof Lundmark², Jan Richard Bruenech², and Eugeniu Beschieru¹

¹Nicolae Testemiceanu State Medical and Pharmaceutical University

²University of South-Eastern Norway

July 16, 2020

Abstract

Background: In order to involve patients in collaborative decisions (SDM), they need to know the treatment options and determine the patient's preferences from the doctors. This process is a must to be evaluated in the Republic of Moldova. **Objective:** The study's aim was to evaluate Shared Decision Making in adult strabismus care from both patients' and physicians' perspectives. **Material and methods:** A prospective, transversal study was conducted. Sixty nine adult strabismus patients and their attending physician were asked to fill out the SDM-9 and SDM-9-DOC questionnaires related to their perception of SDM during the entire period of strabismus treatment. After treatment, patients were asked to describe their satisfaction level. **Results:** All the participants completed the questionnaire (mean age = 29.7 ± 6.9 years, 49.3% female and 50.7% male). The mean SDM-Q-9 score among the patients was 78.42% (IQR = 75.6–82.2%). The mean SDM-Q-Doc score was 86.7% (IQR 84.4–88.9%). The SDM-Q-Doc values were consistently higher than the SDM-Q-9 values (average difference of 6.7%). Female and yang patients reported a lower SDM score. Pearson correlation test revealed a positive significant correlation between both SDM-Q-9 score and patient satisfaction $t(69) = .28, p .02$. **Conclusions:** Our research pointed out blanks in assessing patient information needs as the main obstacles to SDM. Doctors are more confident in their belief that the information provided as well as deliberations and the shared decision process are performed at a high level compared to patients' expectations. These findings can serve as a springboard to further improve communication and SDM between patients and physicians, thereby raising patient satisfaction.

Introduction

Adult strabismus is a very complex, multi-dimensional disease which has a serious impact on sightseeing, self-perception, self-esteem and the social interactions of the patient¹. Important treatment options, including optical correction, prism prescription, correction, various surgical approaches and botox injections all of them are significant, each with the individual advantages and disadvantages². Therefore, the choice of therapy requires a careful examination, where the available scientific data, the experience of the clinician as well as the characteristics and preferences of the individual patient are balanced and together determine the decision³. However, all treatment options, including the option not to operate, should always have their advantages and disadvantages to make space for the patient's preferences.

In the meantime, it has been recognized that these principles are difficult to apply in daily clinical practice^{4,5}. To begin with, the clinicians' expertise may be restricted due to the absence of treatment experience or inaccessibility of certain treatment methods in hospital. Secondly, it is doubtful to what extent the patient's individual preferences are recognized as an ethical imperative, and to what extent the patients are actually actively involved^{4,5}. In this context, collaborative decision making (SDM) is seen as a model for clinical practice⁶. and was defined by Weston WW. in 2001 as being one of the key components of patient-centered care⁷. Interest in patient participation in SDM has increased in recent years⁸, which represents a shift from the paternalistic healthcare model to a person-centered health care approach. This patient-physician

alliance results in empowering patients to develop their autonomy^{9,10} and in finding better healthcare choices. According to Stiggebout AM et al. (2012), this approach brings more benefits in healthcare and fewer variations in practice.¹¹

Gartner et al. (2018) in a literature search identified 16 existing patient profiles related to SDM¹². A general nine-point decision-making questionnaire is one of the most commonly used tools to assess the extent to which doctors involve patients in the decision-making process. It consists of versions of the patient (SDM-Q-9) and the doctor (SDM-Q-Doc), which can be used to evaluate the patient's involvement in decision-making process from two points of view^{13,14}. It is often used in various clinical situations, including primary and special care¹⁵. Since 2009 it has been translated into many languages, including Romanian^{13,16}.

Although SDM has become a priority of health policy in many European countries in the past two decades¹⁷, there are no studies on the involvement of patients in medical decisions in the Republic of Moldova.

Our goal was to examine the involvement of patients and physicians in the SDM process in the treatment of strabismus; the correlation between patient satisfaction and postsurgical outcome.

Methods

This study was implemented in the Republic of Moldova Republican Clinical Hospital from January 2017 to July 2019. Among the participants were adult patients with manifest strabismus who needed a surgical correction and, where more than one techniques was enforceable (simetry surgery, asimetric surgery, ajustable stitch) and their doctor. Patients were enrolled in this study if they met the following criteria: (1) 18 years and older, (2) a confirmed diagnosis of manifest strabismus through orthoptic examination, and (3) Romanian communicative skills and presented the written agreemnet. The exclusion criteria were as follows: (1) severe cognitive impairment and (2) study involvement disapproval. The patients were informed about the study by their healthcare provider. They were thoroughly informed and assured that refusing to participate would not affect their treatment in any way.

This study was conducted in accordance with the principles of the Helsinki Declaration. Board of Directors for Medical Ethics, State University of Medicine and Pharmacy " Nicolae Testemitanu" approved the study.

All patients underwent a detailed ocular examination and orthoptic evaluation before being subjected to strabismus surgery.

Before the study, patients basic demographic data on age, gender, diagnosis and number of consultation needed to reach a joint patient - doctor decision were registered. After the final consultation the patients completed the SDM-Q-9 questionnaire. In this previously approved questionnaire, the SDM level is assessed subjectively by evaluating the nine phases of the decision-making process from the patient's perspective on a 6-point Likert scale ranging from 0 (not at all) to 5 (fully applicable). The doctor also filled out the SDM-Q-Doc questionnaire immediately after the consultation. This questionnaire was developed to measure the behavior of SDM from a doctor's perspective and addresses the same problems as SDM-Q-9 for patients¹⁴. Romanian version had good internal consistency with 0.96 as the Cronbach α coefficient¹⁸.

After treatment, patients were asked to rate their satisfaction with the surgical outcome as excellent, good, fair, and bad using the Face-Q scale (a 4-point scale)¹⁹. Fig. 1

Statistical Analyses

The SDM-Q-9 and SDM-Q-Doc scores (which were between 0 and 45) were transformed into percentages to make simple the results exposition (0% = no SDM behavior; 100% = ideal SDM behavior). This conversion into percentages is close to the other researches on this topic^{13, 20} Multiplication of the score by 20/9.

It was applied a detailed analysis using the Statistical Package for Social Sciences, Version 26 (IBM SPSS Inc.). Descriptive statistics were expressed as mean and standard deviation (SD) or median with a range or inter-quartile range (IQR). A Pearson test was conducted to evaluate the correlation among variables and a

paired sample t test to compare two questionnaires score. Therefore the statistical significance was defined as $p < 0.05$

Results

Sixty nine patients took part in the study with mean age of 29.7 ± 6.9 years (ranged between 18-68 years old). (48 patients- 18-30 years, 31-40 - 13 patients, 41-50 - 5 patients, 51-60 -2 patients and 1 patient - 60-70 years old). Female represented 49.3%, male -50.7%. Fifty four (78.3%) patients were diagnosed with esotropia and 15 (21.7%) with exotropia.

The mean SDM-Q-9 score among the patients was 78.42% (IQR = 75.6-82.2%). The SDM-Q-9 score ranged between 100-90% was not assigned by any patient, 90-80% was given by 35 (50.7%) patients and 80-70% by 29 (42%) patients, and 70-60% by 5 (7.2%) patients. All the SDM-Q-9 had an average score of 3.9. Table 1.

Mean SDM-Q-Doc score was 86.7% (IQR 84.4-88.9%). Six questionnaires (8.7%) had a score ranging between 100-90%, and the remaining (91.3%) a score ranging between 90-80%. All SDM-Q-Doc issues showed an average score of 4.3. Table 1

The SDM-Q-Doc values were systematically higher than the SDM-Q-9 values (average difference 6.7%).

The postoperative patient satisfaction was reated as excellent by 12 (17.4%) patients, good by 27 (39.1%) , fair by 24 (34.8%) and poor by 6 patients (8.7%). Figure 1

A paired-sample t-test was carried out to establish the differences among SDM-Q-9 and SDM-Q-DOC scores of the patient and doctor. The test revealed a significant difference between the total score for SDM-Q-9 (M=78.4; SD=4.82) and for SDM-Doc (M=86.8; SD =2.23 at t (68) 13.7, $p < .001$) as well as for first item score, fifth, sixth, seventh, eighth and ninth items scores. A significant difference between the general decision of patients and practitioners on other points was not established. Table 2

Pearson's test revealed a low negative correlation between patient's gender and SDMQ-9 score $r(68) = -.12$, $p .31$ and patient's age and SDM-Q-9 score $r(68) = -.23$, $p .61$. Females and yang patients reported a lower SDM-Q-9 score. Table 3. Pearson test revealed a positive significant correlation between SDM-Q-9 score and patient satisfaction $t(69) = .28$, $p .02$.

In 15 (21.4%) cases 2 consultations were required before the shared decision was reached, in 27 (38.6%) cases -3, in 25 (35.7%) cases -4 and in 2 (2.9%) cases -5 consultations. We also reveald a positive significant correlation between patient age and number of consultations $t(69) = .45$, $p = .00$.

Discussion

SDM comprises three main elements: the exchange of information (personal and medical) between the patient and the doctor, the discussion on diagnostic and treatment options and the building of consensus^{20, 21} .

In our study, we have identified concerns among patients about the SDM process related to the enough information delivery to take a decision about patient preferences. It was reported that the doctor has not always rated adequately or met their informational needs. This research showed relatively low scores to SDM-Q-9 items 5 (patients' information), 6 (patients' preference), 7 (weighing options), and 8 (shared decision). This means that doctors should actively invite patients to share their goals, expectations, and concerns to prevent misdiagnosis of patient preferences²², and that treatment decisions are currently limited to informing the patient, as found in previous studies²³. Our study showed that identifying and considering patient preferences is not common in treatment yet and that women's responses are lower than men's responses. Most patients indicated that their doctor had not informed them about all strabismus management options and that they would prefer to receive more information about the treatment (3.36 points). As a consequence Tamaris et al. raised the question of whether patients can really participate if they do not know all the options.²⁴ Our study showed that some patients believe that their doctors had not evaluated the level of information that they wanted to receive. In contrast, the doctor found that the information provided to patients was sufficient, and that the consultation process and joint decision-making process were satisfactory

(overall score SDM-Q-Doc 4.0). This raises a question (concern) about the possible lack of knowledge of health workers about what is actually a general decision-making process and how it should be carried out.

Charles CA et al. (2003) have shown that doctors do not always give recommendations on which treatment option they consider to be preferable.²⁵ The other authors have found that when developing a recommendation, many doctors do not disclose their personal opinions about optimal treatment, but, instead, focus on providing information about the risks and benefits of each option, with the patient choosing.²⁶⁻²⁸

One of the main components of SDM is determining patient values and preferences for different treatment options^{29,30}. Anyway, not all the doctors are ready to discuss patients' values and needs; otherwise, some feel like their clinical experience will be compromised if the patient disagrees with their recommendations. Therefore, this choice sometimes may not be the best one for the patient, after considering his values and needs.²² If patients disagree with the treatment recommendations, this may be due to a mismatch between their preferences and the perception of these preferences by doctors. Benbassat J et al. (1998) revealed that doctors' conclusions about patient values and preferences are often inaccurate, even for doctors with more clinical experience and a longer relationship between doctor and patient³¹. It is not astonishing, that Tamarisa et al. concluded that many patients got serious problems in SDM²⁴. The relatively low scores given by patients in our study regarding the shared decision process could be because there was no clear equipoise toward one of the existing treatment methods or there was time absence. The fact that SDM is a time consuming process has also been mentioned by other authors²⁹. Some patients need more time to assimilate and become aware of the information received from the doctor. Our study revealed a mean of 3.2 consultations required before a shared "patient- doctor" decision was reached. Young patients required fewer consultations compared to adults, which could be explained by their desire to regain the physical appearance, to improve the quality of life as soon as possible. Elder patients needed more time to decide. Furthermore, our results suggest that the higher the SDM score, which means higher patient involvement in their healthcare process, the higher is their satisfaction with the provided care. This fact demonstrates once more that by providing recommendations and performing the treatment in concordance with a patient's preferences, the healthcare and research agenda may become truly patient centered.

This study has some limits. Firstly, the small number of the participants limits generalization to all patients and physicians involved in strabismus nursing. Only one physician was involved in the study. A more representative sample of doctors, or a sample of doctors and patients from multiple regions, may produce different results than the one we received.

Conclusion

Our research pointed out blanks in assessing patient information needs as the main obstacles to SDM. Doctors are more confident in their belief that the information provided as well as deliberations and the shared decision process are performed at a high level compared to patients' expectations. These findings can serve as a springboard to further improve communication and SDM between patients and physicians, thereby raising patient satisfaction.

References

1. Wang Z, Ren H, Frey R, Comparison of the Adult Strabismus Quality of Life Questionnaire (AS-20) with the Amblyopia and Strabismus Questionnaire (ASQE) among adults with strabismus who seek medical care in China. *BMC Ophthalmol* . 2014;14:139.Published 2014 Nov 22. doi:10.1186/1471-2415-14-139
2. Stager DR Sr, Stager DR Jr, Beauchamp GR. Treatment option for adult strabismus. *Therapy*. 2007;4(3): 311-317.
3. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. 1996. *Clin Orthop Relat Res* . 2007;455:3-5
4. Grosset KA, Grosset DG. Patient-perceived involvement and satisfaction in Parkinson's disease: effect on therapy decisions and quality of life. *Mov Disord* . 2005; 20:616-9.doi:10.1002/mds.20393

5. Nijhuis FA, van Heek J, Bloem BR, Post B, Faber MJ. Choosing an advanced therapy in Parkinson's Disease; is it an evidence-based decision in current practice? *J Parkinsons Dis* . 2016;6:533–43.doi:10.3233/JPD-160816
6. Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice.*J Gen Inter Med* . 2012 27:1361–7. doi:10.1007/s11606-012-2077-6
7. Weston WW. Informed and shared decision-making: the crux of patient-centered care. *CMAJ* . 2001; 165: 438– 9.
8. Elwyn G, Lloyd A, May C, et al. Collaborative deliberation: a model for patient care. *Patient Educ Couns* . 2014;97(2):158-164. doi:10.1016/j.pec.2014.07.027
9. Coulter A, Collins A. Making Shared Decision-Making a Reality. King's Fund; London: 2011; 40p. www.kingsfund.org.uk
10. Schuler M, Schildmann J, Trautmann F, et al. Cancer patients' control preferences in decision making and associations with patient-reported outcomes: a prospective study in an outpatient cancer center.*Support Care Cancer* . 2017;25(9):2753-2760. doi:10.1007/s00520-017-3686-8
11. Stiggelbout AM, Van der Weijden T, De Wit MP, et al. Shared decision making: really putting patients at the centre of healthcare.*BMJ* . 2012;344:e256. Published 2012 Jan 27. doi:10.1136/bmj.e2566.
12. Gartner FR, Bomhof-Roordink H, Smith IP, Scholl I, Stiggelbout AM, Pieterse AH. The quality of instruments to assess the process of shared decision making: A systematic review. *PLoS One* . 2018;13(2):e0191747. Published 2018 Feb 15. doi:10.1371/journal.pone.0191747
13. Kriston L, Scholl I, Holzel L, Simon D, Loh A, Harter M. The 9-item Shared Decision Making Questionnaire (SDM-Q-9). Development and psychometric properties in a primary care sample. *Patient Educ Couns* . 2010;80(1):94-99. doi:10.1016/j.pec.2009.09.034
14. Scholl I, Kriston L, Dirmaier J, Buchholz A, Harter M. Development and psychometric properties of the Shared Decision Making Questionnaire—physician version (SDM-Q-Doc). *Patient Educ Couns* . 2012;88(2):284-290. doi:10.1016/j.pec.2012.03.005
15. Rencz F, Tamasi B, Brodszky V, Gulacsi L, Weszl M, Pentek M. Validity and reliability of the 9-item Shared Decision Making Questionnaire (SDM-Q-9) in a national survey in Hungary. *Eur J Health Econ* . 2019;20(Suppl 1):43-55. doi:10.1007/s10198-019-01061-2
16. www.patient-als-partner.de/media/sdm-q-9_romanian_version.pdf
17. Mackenbach JP, Valverde JR, Artnik B, et al. Trends in health inequalities in 27 European countries. *Proc Natl Acad Sci U S A* . 2018;115(25):6440-6445. doi:10.1073/pnas.1800028115
18. Baicus C, Balanescu P, Zeh S, et al. Characteristics of shared decision making in Romania from the patient perspective: A cross-sectional multicentric study. *J Eval Clin Pract* . 2019;25(6):1152-1159. doi:10.1111/jep.13257
19. Sharma SD, Kwame I, Almeyda J. Patient aesthetic satisfaction with timing of nasal fracture manipulation. *Surg Res Pract* . 2014;2014:238520. doi:10.1155/2014/238520
20. Rodenburg-Vandenbussche S, Pieterse AH, Kroonenberg PM, et al. Dutch Translation and Psychometric Testing of the 9-Item Shared Decision Making Questionnaire (SDM-Q-9) and Shared Decision Making Questionnaire-Physician Version (SDM-Q-Doc) in Primary and Secondary Care. *PLOS ONE*. 2015;10:e0132158.
21. Shay LA, Lafata JE. Where is the evidence? A systematic review of shared decision making and patient outcomes. *Med Decis Making* . 2015;35(1):114-131. doi:10.1177/0272989X14551638
22. Mulley AG, Trimble C, Elwyn G. Stop the silent misdiagnosis: patients' preferences matter. *BMJ* . 2012;345:e6572. Published 2012 Nov 8. doi:10.1136/bmj.e6572
23. Couet N, Desroches S, Robitaille H, et al. Assessments of the extent to which health-care providers involve patients in decision making: a systematic review of studies using the OPTION instrument. *Health Expect* . 2015;18(4):542-561. doi:10.1111/hex.12054
24. Tamirisa NP, Goodwin JS, Kandalam A, et al. Patient and physician views of shared decision making in cancer. *Health Expect* . 2017;20(6):1248-1253. doi:10.1111/hex.12564
25. Charles CA, Whelan T, Gafni A, Willan A, Farrell S. Shared treatment decision making: what does

it mean to physicians?. *J Clin Oncol* . 2003;21(5):932-936. doi:10.1200/JCO.2003.05.057

26. Periyakoil VS, Neri E, Fong A, Kraemer H. Do unto others: doctors' personal end-of-life resuscitation preferences and their attitudes toward advance directives. *PLoS One* . 2014;9(5):e98246. Published 2014 May 28. doi:10.1371/journal.pone.0098246

27. Tucker Edmonds B, McKenzie F, Panoch JE, Wocial LD, Barnato AE, Frankel RM. "Doctor, what would you do?": physicians' responses to patient inquiries about periviable delivery. *Patient Educ Couns* . 2015;98(1):49-54. doi:10.1016/j.pec.2014.09.014

28. Teno JM, Gozalo PL, Bynum JP, et al. Change in end-of-life care for Medicare beneficiaries: site of death, place of care, and health care transitions in 2000, 2005, and 2009. *JAMA* . 2013;309(5):470-477. doi:10.1001/jama.2012.207624

29. Lang E, Bell NR, Dickinson JA, et al. Eliciting patient values and preferences to inform shared decision making in preventive screening. *Can Fam Physician* . 2018;64(1):28-31.

30. Bomhof-Roordink H, Gartner FR, Stiggelbout AM, et al Key components of shared decision making models: a systematic review *BMJ Open* 2019;**9**: e031763. doi: 10.1136/bmjopen-2019-031763

31. Benbassat J, Pilpel D, Tidhar M. Patients' preferences for participation in clinical decision making: a review of published surveys. *Behav Med* . 1998;24(2):81-88. doi:10.1080/08964289809596384

Table 1 SDM-Q-9 and SDM-Doc Description

SDM-Q-9 description Item	SDM-Q-9 description Minimum - Maximum Score	SDM-Q-9 description Mean	SDM-Q-9 description Std. Deviation	SDM - Doc description Minimum - Maximum Score	SDM - Doc description Mean	SDM - Doc description Std. Deviation
Q 1	3 - 5	4,55	,53	4 - 5	4,03	,17
Q 2	3 - 5	4,19	,46	4 - 5	4,17	,38
Q 3	4 - 5	4,23	,42	4 - 5	4,20	,40
Q 4	4 -5	4,20	,40	3 - 5	4,14	,39
Q 5	2 - 4	3,19	,49	3 - 5	4,00	,17
Q 6	3 - 5	3,70	,58	4 - 5	4,94	,23
Q 7	2 - 4	3,36	,51	4 - 4	4,00	,00
Q 8	2 - 4	3,41	,52	4 - 5	4,58	,49
Q 9	4 - 5	4,54	,50	5 -5	5,00	,00

Table 2. Paired score SDM-Q-9 and SDM-Doc

Paired items	Paired items	Paired Differences Mean	Paired Differences Std. Deviation	Paired Differences 95% CI of the Difference Lower	Paired Differences 95% CI of the Difference Upper	t	Sig. (2-tailed)
--------------	--------------	-------------------------	-----------------------------------	---	---	---	-----------------

Pair 1	I made clear to my patient that a decision needs to be made - My doctor made clear that a decision needs to be made.	-,52	,58	-,66	-,38	-7,42	,000
Pair 2	I wanted to know exactly from my patient how he/she wants to be involved in making the decision - My doctor wanted to know exactly how I want to be involved in making the decision	-,014	,58	-,15	,12	-,21	,84

Pair 3	I told my patient that there are different options for treating his/her medical condition - My doctor told me that there are different options for treating my medical condition	-,03	,51	-,15	,09	-,47	,64
Pair 4	I precisely explained the advantages and disadvantages of the treatment options to my patient - My doctor precisely explained the advantages and disadvantages of the treatment options	-,06	,51	-,18	,06	-,94	,35

Pair 5	I helped my patient understand all the information - My doctor helped me understand all the information.	,81	,55	,68	,94	12,26	,000
Pair 6	I asked my patient which treatment option he/she prefers - My doctor asked me which treatment option I prefer	1,25	,58	1,11	1,39	17,87	,000
Pair 7	My patient and I thoroughly weighed the different treatment options - My doctor and I thoroughly weighed the different treatment options	,64	,51	,51	,76	10,31	,000

Pair 8	My patient and I selected a treatment option together. - My doctor and I thoroughly weighed the different treatment options	1,22	,70	1,05	1,39	14,36	,000
Pair 9	My patient and I reached an agreement on how to proceed - My doctor and I reached an agreement on how to proceed	,46	,50	,34	,58	7,67	,000

Note: df -68

Table 3. Correlations among variables

	1	2	3	4
Age				
Gender (F)	-,19			
SDM-Q-9 score	-,23	-,12		
Postoperative satisfaction	,29*	-,13	,28*	

Note. N= 69, * p< .05;

Hosted file

Fig 1 Postsurgical patients satisfaction.docx available at <https://authorea.com/users/342222/articles/469058-shared-decision-making-in-adult-strabismus-care>