Shared Decision-Making in Cosmetic Medicine and Aesthetic Surgery

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Abstract
Shared decision-making (SDM) invokes the bidirectional communication between physicians and patients required to involve the patient’s preference in the eventual treatment choice. This paper will explain what SDM is, why it is important, and how it is performed in clinical practice. It is an essential part of evidence-based medicine, as it helps determine whether the available evidence on the possible benefits and harms of treatment options match the patient’s characteristics and preferences. Cosmetic medicine and aesthetic surgery seem to be obvious fields of medicine in which SDM should be applied to achieve high-quality care.

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Primum non nocere is a phrase that has guided physicians for centuries. However, when treating patients there is always a risk of complications or side effects. This is even more obvious in cases of surgical procedures. Hence, it is essential to inform a surgical patient in detail about the expected and desired, but also the possible undesired outcomes and complications. This is particularly important when more than one equally effective treatment option is available, and is even more pertinent for elective treatments in which one seeks to improve the quality of life and well-being of a patient rather than to cure a disease or injury. For example, patients with varicose veins, a lumbar hernia, or an intermediate-sized abdominal aneurysm can be treated with surgical or non-surgical treatment options, each with their specific pros and cons. Under these circumstances it is the moral and ethical duty of the surgeon to try and engage the patient in shared decision-making (SDM).1,2

The concept of SDM was introduced over 30 years ago, demonstrating that clinicians underestimate their patients’ desire to be informed and to participate in the decision-making process.3 This notion culminated in 2010 in the so-called Salzburg statement, a manifesto formulated by an international group of healthcare providers, journalists, and editors of medical journals to highlight the essential role of patients in medical decision-making.4 A growing number of hospitals and other healthcare institutions have ratified this document to express their allegiance with this principle.

In aesthetic surgery there is no life-threatening disorder that needs to be cured. The purpose of cosmetic surgery is to improve a person’s well-being, and procedures are mainly prompted by the patient’s desire rather than a medical necessity. Because there are often multiple treatment options in cosmetic surgery, the value of SDM appears to be self-evident. The patient’s preference is a major determinant of the eventual treatment choice. However, patients can only make an informed choice if they are indeed well informed. This paper will describe how SDM can be applied in clinical practice and provide some tools to facilitate this process.

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SDM: WHAT IT IS AND WHAT IT ISN’T

SDM encompasses a two-way communication process in which the caregiver provides information about the patient’s condition, the treatment options—with their possible benefits and harms—and scientific uncertainties regarding the evidence for these outcomes. The patient, in turn, should inform their caregiver about their values and preferences regarding these options. The aim is to let patients take part in thinking, and even deciding, about treatment options together with their caregiver,1 which goes beyond a (one-way) informed consent.

Many attempts have been made to define SDM. Most of these include the following key characteristics5: (1) at least two parties (healthcare professional and patient) are involved; (2) both parties share information; (3) both parties take steps to build a consensus about the preferred treatment; and (4) an agreement is reached on the treatment to pursue.

Elwyn et al.6 has proposed a method for SDM to be practiced during a doctor-patient conversation when a treatment decision is to be made. They defined three phases in the conversation: (1) convey awareness that a choice is to be made and the patient can play a role in this (“choice talk”); (2) inform patients about treatment options and their pros and cons (“option talk”), often by integrating the use of decision support tools (see below); and (3) encourage patients to explore what matters most to them and to make a decision together (“decision talk”). Questions or remarks typical for these phases are: (1) “There are different ways to deal with your problem and I need your input to make a decision together”; (2) “What types of information do you prefer to explain these options?”; and (3) “What is most important to you when considering these options?”.

EXAMPLE OF SDM IN AESTHETIC SURGERY

Mrs. J. is a 32-year-old homemaker and mother of two children aged 7 and 3, who were breast-fed. Before she had children her breasts were “full,” but now she is concerned about the shape of her breasts, which she feels are empty and sagging.

She consults a plastic surgeon with the request for a breast augmentation. Mrs. J. reports she is using a cup B bra and wants larger breasts, requesting “a cup D.” She is healthy and has no family history of breast cancer. On physical examination she is a skinny woman: height 175 cm, weight 60 kg, BMI 19.6. The breast examination reveals a normal shaped chest wall and symmetric breasts with grade I ptosis; the upper pole is empty, on palpation there are no abnormalities, and the pinch test in the upper pole is 1.5 cm. When asked about her preference, she wants a natural shape.

The plastic surgeon explains to Mrs. J. that there are several treatment options and choices to be made. Choosing the best option requires taking into account her body build and her preferences. Mrs. J. gladly accepts this invitation.

The surgeon further explains her breasts may be enlarged using implants; these may be inserted through the armpit, the nipple margin, or the inframammary fold. It is pointed out to her that her nipple is too small to be used, but Mrs. J. is invited to express her preference about the other two options. As she does not want a scar in her axilla, she prefers the inframammary insertion option.

The second choice to be made is whether the breast implant is positioned above or under the pectoral muscle. She has little tissue in the upper pole, so her surgeon explains that if the implant were placed in a pre-pectoral position, it might be more visible. Alternatively, it could be placed partially under the muscle in a dual plane. Then the breast might look more natural, but the breast implant might animate upon muscle contraction.

The implant type is also discussed. The surgeon explains why his preference is to use textured cohesive gel implants; cohesive implants are either round or anatomic, and the anatomic implants are considered to give a more natural shape. The surgeon admits, however, that the evidence for this is not conclusive.7,8 The patient asks the surgeon about the option of using saline-filled implants like her mother had. The surgeon informs her that deflation of these implants occurs in 13.8% of cases within ten years, and explains that this means that 1 out of every 7 patients will spontaneously lose the volume in one of their breasts.9

Her plastic surgeon further informs her about the risks of using silicone implants: the procedure has its own chances of success and short-term and long-term risks. He asks her how she would like to be informed about these, as some prefer numbers, and others graphical aids. Mrs. J. knows she is quite visually oriented, so she prefers to have some illustrations. Hence, her surgeon illustrates the pros and cons (ie, seroma, capsular contracture10) by means of figurine charts (Supplementary Figure 1).

Third, Mrs. J. is informed about the option of lipofilling. She is told this will probably require more than one procedure, as she has limited donor sites. Hence, using anatomic implants seems the best option to both. Together they measure the expected implant size using external sizers.

Finally, Mrs. J. weighs the pros and cons of the different available treatment options. They decide to opt for a dual plane augmentation with anatomic implants with a volume of 275 cc.

One month later she undergoes the procedure with good result. At her one-year follow-up, she is satisfied about the informed choices she has been able to make together with her doctor.

SDM: WHY DO WE NEED IT?

In general, healthcare professionals tend to focus on the patient’s disorder or complaint and make their care decisions predominantly according to their own preferences and
values, based on the benefits they are aware of and given their expertise and/or available evidence. Patients treated by general surgeons are rarely explicitly invited to express their point of view and to participate in the decision-making about their care.\textsuperscript{11-13} As a consequence, doctors often remain unaware of patient’s beliefs and concerns about the disease or treatment plan. In cosmetic or aesthetic surgery the patient is likely to present his or her problem or even a treatment preference, which should be used as a primer for SDM.

Arguments in favor of SDM are, firstly, that patients and surgeons do not always have the same opinion about what the best treatment choice should be, which may lead to a so-called “preference misdiagnosis”: when the patient’s preference is not properly clarified (misdiagnosis), the treatment choice may not be in agreement with this preference.\textsuperscript{12} Patients may even want treatments (all too often found on the internet) that may not be the best option according to the doctor’s view. SDM may result in a better alignment of the treatment choice with the patient’s preference.

Second, SDM is an essential constituent of the definition of evidence-based medicine (EBM), which states that a treatment decision should be based on clinical expertise, available evidence, and the situation and preference of the patient.\textsuperscript{14,15} Both EBM and SDM deserve a better implementation in daily clinical practice.\textsuperscript{16} Fortunately, recent initiatives attempt to improve critical appraisal skills and evidence-based practices by plastic surgical residents.\textsuperscript{17} However, this may be impeded by the fact that training and certification of plastic surgeons differ by country.\textsuperscript{18}

Third, if SDM is applied, patients appear to be more satisfied and more compliant with the treatment they have agreed upon,\textsuperscript{19-21} which may reduce the risk of litigation.\textsuperscript{22} Moreover, in the surgical realm patients tend to prefer the less invasive treatment option.\textsuperscript{23}

**SDM IN AESTHETIC SURGERY**

In aesthetic surgery, an ongoing lobby seems to promote cosmetic interventions that are not supported by sufficient scientific evidence or guidelines.\textsuperscript{24} Moreover, cosmetic surgery recipients do not inevitably feel younger than their years, or better about themselves than those who have not pursued surgery.\textsuperscript{25} Similarly, most women undergoing mastectomy for breast cancer do not desire breast reconstruction.\textsuperscript{26} Furthermore, even screening tests, like MRI for silicone breast implantation rupture, seem neglected as a topic for SDM.\textsuperscript{27} From these examples it appears that SDM is not yet universally applied in aesthetic surgery.\textsuperscript{1,11,12,28} However, the traditional practice, in which the clinician paternalistically advises the patient what to do, no longer conforms to modern legal or ethical standards of care, in which the patient is seen as an equal who should take part in decision-making.\textsuperscript{1} To assist in SDM, various methods have been described to obtain data to understand population preferences, for example regarding the incision location for breast augmentation surgery.\textsuperscript{29}

A recent Cochrane review assessed interventions to improve the adoption of SDM by healthcare professionals.\textsuperscript{30} It was found that there was no specific type of intervention that was the most effective in increasing SDM behavior by healthcare professionals. However, they stated that SDM interventions that actively target patients, healthcare professionals, or both are better than no intervention at all. Unfortunately, to our knowledge, none of the interventions included in this review have yet been implemented in the areas of cosmetic medicine or aesthetic surgery.

**RELUCTANCE TOWARDS SDM**

A commonly perceived barrier to the use of SDM is the misconception that it may lengthen the initial or decision-making consultation.\textsuperscript{31} However, future time savings may offset this investment, as patients likely require fewer or shorter follow-up consultations when properly informed from the beginning.

Clinicians frequently claim they already apply SDM in their patient encounters, as they explain the treatment options and their benefits and possible harms, and subsequently ask the patient’s informed consent. However, this is still a one-way communication, which does not invoke the patient’s preferences or engage the patient in SDM.

In aesthetic surgery, preoperative consultation is recognized to be important, including the psychological issues of patients who seek cosmetic procedures.\textsuperscript{32,33} Many physicians think they are doing a pretty good job when explaining things and exploring their patient’s preferences. However, this is usually below the ideal level, as most are inclined to over-assess their own abilities.\textsuperscript{34,35} For example, they may explain all the ins and outs of the advised treatment option, without comparing this with any alternative options (including doing nothing). Also, they may not ask the patient to what extent they want to be involved in SDM.

**EXPLAINING RISKS AND BENEFITS**

Doctors have a legal and ethical obligation to inform their patients about the benefits and risks of a treatment. These include the alternative treatment options and the prognosis. Evidence for the effectiveness of available treatment options is needed to explain to the patients the benefits of these options. It is equally important to know the evidence on the adverse effects (harm) of these treatments. Next, it is important to convey this evidence clearly and understandably. This can be hard for doctors as well as for patients, who may have limited health literacy.
Verbal Tools

When presenting the risks of surgical interventions, doctors might say, “the risks of this type of surgery are low” or “this is a common procedure I have done many times.” For most patients, this may be neither clear nor convincing. Hence, this evidence should be communicated numerically. The surgeon may use percentages, but these can also be hard to grasp.36

The best way of conveying risks is absolute proportions. For instance, “90 out of 100 patients like you will benefit from surgery” and “3 out of 100 patients like you will suffer from a wound infection due to surgery.” More advanced means of presenting risks are the number needed to treat or number needed to harm. These indicate the number of patients who need to be treated to attain one extra beneficial or adverse outcome, respectively. Obviously, the benefit should outweigh the possible harm for a treatment to be a realistic option, particularly in planned cosmetic surgery.

Graphical Tools

Because most of us are visually oriented, graphical tools may help in conveying benefits and risks of surgical treatments, particularly in circumstances of low health literacy.37,38 Some of these tools are bar charts, natural frequency trees, figurine charts, or comparisons of medical risks with risks in daily life (Figure 1 and Supplementary Figure 1).10,39,40

Decision Aids and Option Grids

In general, patients will not be able to recall much of the information they hear during a short consultation appointment.41 To improve the recall, decision aids have been developed to help patients and health care professionals engage in SDM. These decision aids provide information on the disease, the treatment options, and their associated outcomes. They also contain some questions to assess the patient’s knowledge about their disease and treatment options, and some questions that help the patient understand their preferences. The decision aid can be provided as a brochure or via a website, enabling patients to (re-)read this with their partners or family at their own leisure. Decision aids are designed to support the communication between patients and healthcare professionals and are not meant to replace the regular consultation.

The effectiveness of decision aids to promote SDM has been shown in a large Cochrane systematic review.20 In another systematic review on surgical interventions by Knops et al,42 decision aids were found to improve the patient’s knowledge of the treatment options. Furthermore, patients experienced less decisional conflict and were more likely to choose a conservative, or less invasive, treatment option after having used a decision aid. Also, a uniform information source in the form of a decision aid can lead to a reduction of practice variation and unnecessary or unwanted therapeutic procedures, and thus save costs.19

Decision aids have been developed for a wide range of scenarios in medicine and surgery. For example, multiple decision aids concerning breast cancer surgery have been developed and already been tested in randomized clinical trials.33,44 Although decision aids seem very suitable for cosmetic medicine, they are still scarce. Examples in aesthetic and reconstructive surgery are whether or not to have a breast augmentation or a blepharoplasty, to operate on a child with microtia or an umbilical hernia, or to have breast reconstruction after breast cancer surgery. Decision aids for most of these considerations are available online.35,46

As an alternative for decision aids, a so-called “option grid” can be used. This decision tool consists of answers to frequently asked questions about treatment options and can be used in the consulting room by the doctor and patient to discuss the treatment options and their pros and cons.47 In aesthetic surgery, few decision tools are available. An example of a simple decision tool for breast reconstruction surgery is available on the website of the option grid collaborative (Supplementary Figure 2).48

DISCUSSION

Although aesthetic and cosmetic surgery seems the preeminent realm for SDM, this paradigm has not pervaded every plastic surgeon’s consulting room yet. Admittedly, the
extent of its application is hard to fathom and may vary among and within different centers. SDM behavior can be supported by explaining the risks and benefits of the different treatment options with the use of graphical risk charts or decision aids. Unfortunately, decision tools available for use in cosmetic medicine and aesthetic surgery are currently sparse. The development of these tools should be encouraged to foster SDM in this realm. This should go hand in hand with research focusing on the outcomes of such surgery, because available evidence is limited for many treatment options and their outcomes in aesthetic surgery. This uncertainty should also be communicated and taken into account when making treatment decisions.

The mere availability of decision support tools will not achieve much if the attitude of caregivers and the culture in hospitals is not inclined towards SDM. This may require additional training of present and future doctors in how to communicate risks and involve patients in SDM. Nevertheless, this paper attempts to provide the basic definition, rationale, and tools for SDM, and to overcome any reluctance to apply SDM in clinical practice, since it is a moral and ethical obligation to our patients.

CONCLUSIONS

SDM is essential in EBM. The fields of cosmetic medicine and aesthetic surgery are well suited for SDM because multiple treatment options exist. Furthermore, the patient’s values and opinions are of major importance in the decision to undergo aesthetic treatments and should therefore also be paramount in the decision-making process regarding the treatment.

Supplementary Material

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