

ÜÇÜNCÜ BASAMAK HASTANELERDE ORTOPEDİ VE TRAVMATOLOJİ BÖLÜMÜNDE SIK KULLANILAN BİLGİLENDİRİLMİŞ ONAM (RIZA) FORMLARININ OKUNABİLİRLİĞİ YETERLİ Mİ ?

IS THE READABILITY OF INFORMED CONSENT FORMS COMMONLY USED IN
ORTHOPAEDICS AND TRAUMATOLOGY DEPARTMENTS IN TERTIARY
HOSPITALS SUFFICIENT ?

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ÖZET

AMAÇ: Ameliyatlardan önce hasta ve doktoru arasında aydınlatılmış onam formları adeta bir sözleşmedir. Onam formları hasta tarafından okunabilir ve anlaşılabilir olmalıdır. Okunabilirlik düzeyi tüm metinler için anlaşılabilirlik açısından önem arz etmektedir. Bu çalışmada üçüncü basamak bir hastanede alınan ortopedik cerrahi onam formlarının okunabilirlik düzeyini araştırdık.

GEREÇ VE YÖNTEM: Üçüncü basamak tıp fakültesi hastanesinde, Ortopedik cerrahi öncesi kullanılan 28 tane onam formlarının kelime, hece, harf ve karakter sayıları tespit edildi. Ateşman ve Bezirci-Yılmaz formülleri ile okunabilirlik puanları tespit edildi. İstatistiksel analizler SPSS 26.0 paket programı kullanılarak yapıldı.

BULGULAR: Ateşman ölçeğine göre $OP=51,35 \pm 4,62$ ve Bezirci-Yılmaz ölçeğine göre $OP= 11,16 \pm 1,81$ olarak ölçülmüştür. Ateşman ölçeğine göre onamların okunabilirliği için lise seviyesi 11-12 yıllık eğitim gerekmektedir, Bezirci-Yılmaz ölçeğine göre ortaöğretim (lise) düzeyinde eğitim gerekmektedir.

SONUÇ: Üçüncü basamak hastanelerde kullanılan ortopedik cerrahi onam formlarının lise eğitim düzeyinde birikim gerektirecek durumda olduğu saptandı. Türkiye'deki ortalama okuma yılı olan yaklaşık 6 yıllık eğitim gerektiren düzeye bu onam formlarını sadeleştirilmesini öneriyoruz.

ANAHTAR KELİMELEER: Ortopedi ve Travmatoloji, Onay Formu, Okunabilirlik Düzeyi.

ABSTRACT

OBJECTIVE: Informed consent forms are almost a contract between the patient and his/her physician before surgery. Consent forms should be readable and understandable by the patient. The level of readability is important for understandability of all texts. In this study, we investigated the readability level of orthopaedic surgical consent forms obtained in a tertiary care hospital.

MATERIAL AND METHODS: The number of words, syllables, letters and characters in 28 consent forms used before orthopaedic surgery in a tertiary medical faculty hospital were determined. Readability scores were determined with Ateşman and Bezirci-Yılmaz formulae. Statistical analyses were performed with SPSS 26.0 package programme.

RESULTS: $RS=51.35 \pm 4.62$ according to Ateşman scale and $RS= 11.16 \pm 1.81$ according to Bezirci-Yılmaz scale. According to Ateşman scale, 11-12 years of high school level education is required for the readability of consents, while according to Bezirci-Yılmaz scale, secondary (high school) level education is required.

CONCLUSIONS: It was determined that orthopaedic surgery consent forms used in tertiary hospitals required high school education level knowledge. We recommend that these consent forms be simplified to the level that requires approximately 6 years of education, which is the average number of years of education in Turkey.

KEYWORDS: Orthopaedics and Traumatology, Consent Form, Readability Level.

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INTRODUCTION

The quality of texts increases when they can be read and understood. Texts that are not understood by the audience they address are of little value. Some scientific scales evaluate the comprehensibility of written texts through the level of readability (1).

With the widespread use of the internet in today's world, it has become easier for people to access all kinds of information. In the field of health, patients can easily access all information about their diseases and treatment approaches to written and visual materials via the internet. However, there is so much information on the internet that their reliability is questioned. Detailed informed consent forms obtained before surgical procedures are the most reliable official texts. They are reliable official documents that create legal responsibility between the patient and the surgeon.

In today's world, the workload of orthopaedics and traumatology department has increased due to the increase in population and industrialisation. Especially trauma and elective surgeries have increased considerably in recent years. Patients want to know why surgery is necessary, which surgical procedure will be performed and the risks of this procedure by getting information about their disease. The patient should be informed in detail by his/her physician. Otherwise, legal problems may arise. It is very important that the patient is informed that orthopaedic surgeries may have some risks in the preoperative, operative and postoperative period and that they are performed with the full consent of the patient.

The most frequently used readability scales worldwide are Gunning fog (2) and Flesch-Kincaid (3). Since Turkish has a different root in terms of language structure, more than these scales is needed to give objective results. Ateşman (4) and Bezirci-Yılmaz (5) scales are much more objective in determining the readability level of Turkish texts. These scales provide an average objective score considering the number of sentences, words, syllables and letters in the text that are expected to be understood. Our study aimed to evaluate the readability level of infor-

med consent forms used in orthopaedics and traumatology clinics in tertiary care hospitals with the more used readability level scales in Turkey.

MATERIALS AND METHODS

In the study, 28 surgical informed consent forms related to the orthopaedics and traumatology department were obtained from the Quality Unit of Afyonkarahisar Health Sciences University Medical Faculty Hospital. The consent forms were divided into four groups: trauma surgery, hand surgery, arthroscopic surgery and elective surgery. These forms were evaluated with Ateşman and Bezirci-Yılmaz readability formulae.

Readability Scale Calculation

For the calculation of Ateşman readability scale, the calculation is made by taking the first 100 words of the text through the formula. Ateşman readability score (RS) is a scale between 0-100, which becomes easier to read as the score increases. It is calculated with the formula below.

$$RS = 198.825 - (40.175 \times X_1) - (2.610 \times X_2)$$

(RS: Readability Score, X₁: Total number of syllables/total number of words, X₂: Total number of words/Total number of sentences)

A comparison of Ateşman readability scores according to education level is shown and is taken as a reference in the evaluation (**Table 1**).

Table 1: The educational status equivalent of the readability score calculated with the Ateşman Readability Scale

READABILITY SCORE	EDUCATIONAL STATUS
90-100	It can be read by someone who is in the 4th grade of primary school and below.
80-89	It can be read by anyone studying at the 5th or 6th grade level.
70-79	It can be read by anyone studying at the 7th or 8th grade level.
60-69	It can be read by anyone studying at the 9th or 10th grade level.
50-59	It can be read by anyone studying at the 11th or 12th grade level.
40-49	It can be read by someone studying at the 13th or 15th grade level.
30-39	It can be read by someone with an undergraduate degree.
≤29	Can be read by anyone with a graduate degree

Bezirci-Yılmaz readability scale is developed according to the text's number of words and syllables. The higher the readability score, the harder it is to read and the lower the score, the easier it is to read. This scale uses the readability Score and Average Word Count (AWC). It is calculated with the formula below.

$$RS = \sqrt{AWC \times [(H_3 \times 0.84) + (H_4 \times 1.5) + (H_5 \times 3.5) + (H_6 \times 26.25)]}$$

(RS: Readability score, AWC: Average Word Count, H3: Average number of words with 3 syllables, H4: Average number of words with 4 syllables, H5: Average number of words with 5 syllables, H6: Average number of words with 6 or more syllables)

The education level equivalent of the readability score is shown and taken as a reference in the evaluation (**Table 2**). Formulas were calculated by the computer programme developed by Bezirci-Yılmaz.

Table 2: The educational levels equivalent of the readability score calculated with the Yılmaz-Bezirci Readability Scale

READABILITY SCORE	EDUCATIONAL STATUS
1-8	Primary School
9-12	Secondary School (High School)
13-16	Undergraduate
16+	Akademic level education

Ethical Committee

The study was conducted according to the decision of the Afyonkarahisar Health Sciences University Clinical Research Ethics Committee dated 02.12.2022 and numbered 2022/16.

Statistical Analysis

Categorical variables were presented as percentage and frequency. Continuous variables were expressed as mean and standard deviation. ANOVA test was used to compare continuous variables between groups. Statistical analyses were performed with SPSS 26.0 package programme.

RESULTS

A total of 28 informed consent forms were used in the study. Orthopaedic surgery consents were divided into four groups as trauma surgery consents (n=11), arthroscopic surgery consents (n=6), hand surgery consents (n=9) and elective surgery consents (n=2). According to the Ateşman readability scale, the consent form's readability score, 11-12 years of education level (high school) is required for the readability of the consent forms. According to the Bezirci-Yılmaz readability scale, it is 11.16 ± 1.81 . The appropriate education level is secondary high school (**Table 3**).

Table 3: Average scores of orthopedic surgical consents calculated according to Ateşman and Bezirci-Yılmaz readability scales and corresponding education levels

	NUMBER	MINIMUM	MAXIMUM	MEAN (Standard Deviation)	EDUCATIONAL STATUS
ATEŞMAN	28	43,68	59,71	51,3507±4,6238	11-12 years
BEZİRCİ YILMAZ	28	7,63	13,79	11,9163±1,8135	Secondary School (High School)

When the readability level of the consent forms was compared between the groups, it was found that hand surgery consent forms were the consent forms that required the highest level of education. The comparative scores of the consent form groups according to Ateşman and Bezirci-Yılmaz scales are shown in **Figure 1**.

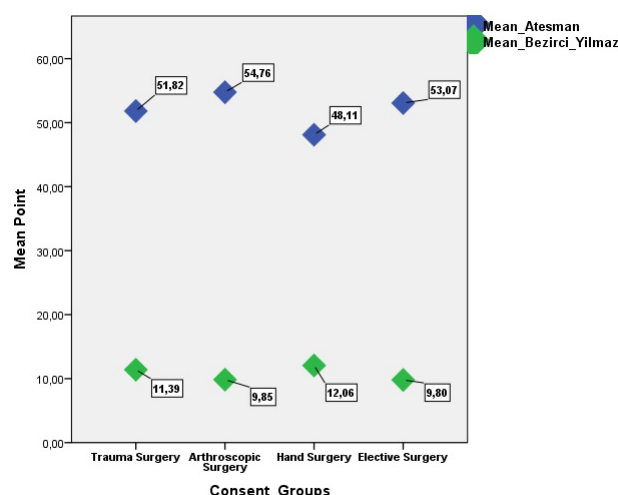


Figure 1: Comparative scores of consent form groups according to Bezirci-Yılmaz and Ateşman scales

When the consent forms were evaluated in groups according to the results of these two inversely curved scales, the readability levels were similar in general according to both scales. If we look at the consent form groups in detail, the consent form of the hand surgery group received the lowest score with a mean score of 48.11 according to the Ateşman scale and the readability level was evaluated as readable by a person educated at the 13th or 15th grade level.

The same group of forms received the highest score with a mean score of 12.06 according to the Bezirci-Yılmaz scale. It were evaluated as readable by someone educated at the secondary (high school) level. Education levels corresponding to the mean scores across groups are shown in detail (**Table 4**).

Table 4: Education levels of orthopedic surgery consent form groups corresponding to the average scores calculated according to the Ateşman and Bezirci-Yılmaz readability scales

	BEZİRCİ YILMAZ		ATEŞMAN	
	NUMBER	SCALE	NUMBER	SCALE
TRAUMA SURGERY	11.39	Secondary School (High School)	51.82	At 11 th or 12 th grade level
ARTHROSCOPIC SURGERY	9.85	Secondary School (High School)	54.76	At 11 th or 12 th grade level
HAND SURGERY	12.06	Secondary School (High School)	48.11	At 13 th or 15 th grade level
ELECTIVE SURGERY	9.80	Secondary School (High School)	53.07	At 11 th or 12 th grade level

DISCUSSION

In today's world, the number of orthopaedic surgical procedures is increasing rapidly with industrialization and population. People's access to information has become easier today through the internet. Patients research the internet before the surgical procedure is applied to them and obtain some information. However, confusion arises since there is a lot of correct and incorrect information on the internet. Informed surgical consent forms are the official documents containing the most serious and reliable information. It can be defined as a legal contract between the patient and the physician.

Most malpractice lawsuits are related to complications that develop after surgery. To avoid this situation, the patient should learn the procedure in detail before the operation and be aware of the negative situations that may develop. This information should be in a simple and plain language that the patient can read and understand. The comprehension of consent forms can gain an objective value through readability scales.

Formula readability scales based on more than 40 accepted word and syllable counts from the scientific world are shown (6). In 2004, the definition of readability was first introduced in the United States of America and many readability scales were introduced. In English, the most preferred and trusted scale in medical inventory is the Flesch Kincaid Index (3). However, since their adaptation to Turkish is not very good, Ateşman and Bezirci-Yılmaz scales are more valuable in evaluating the readability level of Turkish medical sources.

The readability level has been investigated in many studies to determine whether drug leaflets are easily understandable by the patient

except for surgical consent. Sarı et al. measured the readability level of antihypertensive drug leaflets and found that people with 11-12 years of education could understand what they read (7).

The readability of the informed consent forms of the Turkish Society of Cardiology was evaluated in a study by Dural et al. They found that those with a high school education could understand these consent forms and suggested that the consent forms should be simplified to require 6 years of education (8).

In a study evaluating the readability of informed consent forms obtained before otorhinolaryngology surgeries, it was suggested that the readability of consent forms was limited due to the insufficient average education period and health literacy in our country and that consent forms should be reviewed (9).

The readability level of informed consent forms in surgical departments that perform all invasive procedures such as anaesthesia, ophthalmology, neurosurgery, general surgery, dentistry, etc. has been demonstrated by studies (10-13). As a result of the studies, it was determined that the average schooling age in our country is insufficient for the readability of surgical consent forms. It was suggested that surgical consent forms should be simplified.

The education levels of countries are associated with average years of schooling and expected years of schooling. Yeşilyurt et al. found that the average schooling year of the Republic of Turkey was 6.51 and the expected schooling year was 11.03 (14). According to the studies, our country's schooling age is insufficient for the readability of surgical consent forms.

Our literature search found no publication related to the readability level of orthopaedics and traumatology and surgical consent forms. In our study, we determined that the readability level of most of the orthopaedic surgical consent forms should be at the high school level (12 years of education), and the consent forms related to hand surgery should be at higher education level (13-15 years of education). Our country's educational level needs to be improved to read and understand these consent forms. The surgi-

cal consent forms should be simplified in a way that does not put the physician in unfavorable situations regarding medico-legal aspects.

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