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Original article

Preoperative patient anxiety level before and after informed consent for general anesthesia

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Abstract: *Background* — Informed consent anesthesia should be administered even in pediatric patients through their parents, thereby reducing anxiety.
Objective — This study aimed to determine the difference in anxiety level of the preoperative patient before and after given informed consent about general anesthesia.
Settings and Design — This was a quasi-experimental study with one group pre-test and post-test study design.
Material and Methods - Patients who were to undergo surgery with general anesthesia in PKU Muhammadiyah Gamping Hospital were the subjects in this study. There were 41 subjects selected as study samples using consecutive sampling. Anxiety level was assessed by the HRS-A scale (0.91 and 0.97). Statistical analysis used: All data were analyzed by the marginal homogeneity comparative test.
Results — A significant decrease in preoperative patient anxiety levels was observed after the patient was given general anesthesia informed consent ($p<0.05$), compared to levels before informed consent. Thus, giving informed consent before general anesthesia could decrease the subject's anxiety level in preoperative patients.
Conclusion — Thus, giving informed consent prior to general anesthesia could decrease the subject's anxiety level in preoperative patients.

Keywords: anxiety, general anesthesia, informed consent, reducing anxiety, anesthesia informed consent.

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Introduction

Informed consent is a process designed to show that the patient understands the risks and benefits of and is willing to participate in a clinical procedure [1]. Informed consent must be given by the patient before any medical procedure, including surgery and anesthesia. Surgery is a medical procedure using medical appliances and performed by a surgeon [2]. General anesthesia is a medicine administered by a physician anesthesiologist through a mask or an IV placed in the vein and will make it unconscious. Many of the body's functions will slow down or need help to work effectively [3].

Informed consent anesthesia should be administered even in pediatric patients through their parents, which may reduce anxiety [4]. Anxiety is an unexplainable and spreading feeling of worry, accompanied with an uneasy and helpless feeling [5]. Anxiety in the preoperative patient must be overcome or minimized as much as possible as this condition can trigger the adrenal gland to release epinephrine and norepinephrine. Both hormones increase heart rate, respiration rate, and blood pressure, leading to extended physical alterations that can hinder successful surgical procedures [6]. Informed consent requires establishing a strong bond of communication between doctor and patient. Every piece of information regarding the medical procedure can be delivered and understood without any difference in perception.

Anesthesia is necessary to ease patients's pain and a result, the work, time, and effort needed during surgery. There are three types of anesthesia: (1) local, (2) regional, and (3) general. General anesthesia reversibly suppresses the central nervous system, causing full body loss sensitivity to pain, reflex movements, and consciousness [7, 8]. Goldberger et al. noted that giving undetailed informed consent to electrophysiology patients could reduce their anxiety level [9]. This study will compare the anxiety level before and after giving informed consent for general anesthesia before a surgical procedure.

Material and Methods

Basic study design and subject selection

This study was a quasi-experimental study with one pre-test group and a post-test study design. This study's subjects were patients who underwent surgery under general anesthesia at PKU Muhammadiyah Gamping Hospital from October until the end of November 2016. A total of 41 subjects were selected based on inclusion criteria, i.e., patients with ASA I and II status who underwent surgery with general anesthesia. All subjects meeting

the inclusion criteria were included in the sample or consecutive sampling. The study subjects were pre-tested with a questionnaire about anxiety arising before being given informed consent and filling out the same questionnaire after signing informed consent.

Anxiety measurement

An anxiety measurement was quoted from Hawari using Hamilton Rating Scale for Anxiety (HRS-A), which consists of 14 components of symptoms, namely: (1) feeling anxiety, (2) tension, (3) fear, (4) sleep disturbance, (5) impaired intelligence, (6) feelings of depression (moody), (7) symptoms of somatic/physical (muscle), (8) symptoms of somatic/physical (sensory), (9) cardiovascular symptoms (heart and blood vessels), (10) respiratory symptoms (breathing), (11) gastrointestinal symptoms, (12) symptoms of urogenital (urinary and genital), (13) autonomic symptoms, (14) behavior (attitude) in the interview [10]. Evaluation of HRS-A used scoring system, ie: score 0 = no symptoms, score 1 = mild (one symptom), score 2 = moderate (two symptoms), score 3 = weight (more than two symptoms), score 4 = very heavy (all symptoms). If score was <14 = no anxiety, score 14-20 = mild anxiety, score 21-27 = medium anxiety, score 28-41 = severe anxiety, score 42-56 = panic [10]. Anxiety level was assessed by the HRS-A scale (0.91 and 0.97).

Data analysis

All statistical calculations were conducted using SPSS. Data were analyzed by marginal homogeneity comparative test. The Shapiro-Wilk test assessed the data distribution. The differences between the two categorical groups were conducted using the marginal homogeneity test. A *p-value* <0.05 was considered statistically significant.

Results

The subject in inclusion criteria

A total of 41 subjects who met the inclusion criteria were considered this study samples; their age and sex distributions are provided in *Table* 1. Of all the subjects who met the inclusion criteria, 21 (51.2%) subjects were male, and 20 subjects (48.8%) were female. Females aged 36 to 55 were the most frequent in this study (12 subjects, 26.3%), and females aged 26 to 35-year-old were the least frequent subgroup, with only one subject (2.4%). No differences among age groups and genders were detected in this study (p>0.05).

Table 1. Subject distribution

Age Group	*Male*	*Female*	*Totals*
18–25	6	4	10 (24.4%)
26–35	4	1	5 (12.2%)
36–55	4	12	16 (39.0%)
>55	7	3	10 (24.4%)
	21 (51.2%)	20 (48.8%)	41 (100%)

Table 2. Number of subjects based on anxiety levels after informed consent

Anxiety Level	*Before informed consent, n (%)*	*After informed consent, n (%)*
Mild	9 (22.0)	9 (22.0)
Moderate	8 (19.5)	5 (12.2)
Severe	1 (2.5)	0 (0)
Total	41 (100)	41 (100)

The anxiety level of subjects

All patients were given The Hamilton Rating Scale for Anxiety (HRS-A) questionnaire to preoperative patients before and after providing the general anesthesia informed consent. *Table* 2 is presented the classification of anxiety levels based on the HRS-A (measurement, including 14 symptom components (feelings of anxiety, tension, fear, sleep disorders, intelligence disorders, depressed feelings, physical muscle symptoms, sensory, physical symptoms, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, urogenital symptoms, autonomic symptoms, and attitude disorders). Subjects with no symptom, one symptom, two symptoms, and more than two symptoms were categorized as normal, mild, moderates, and severe, respectively.

As shown in *Table* 2, the anxiety level significantly decreased in moderate and severe anxiety levels after giving informed consent (p<0.05). It indicated that an informed consent affected the level of anxiety in patient underwent anesthesia.

Discussion

Kelompok Psikiatri Biology Jakarta or KPBJ (Jakarta Biological Psychiatry Group) has developed HRS-A in the form of an Anxiety Analog Scale [12]. The HRS-A scale consists of 14 components, which are valid and reliable during the clinical trial (0.93 and 0.97). These scores show that the HRS-A scale in anxiety level assessment is valid and reliable [13].

This study revealed that patient anxiety level could be decreased by giving them informed consent before a medical procedure. About 24.4% of subjects had their anxiety level decreased. This result is in accordance with Appulembang (2017), in which patient anxiety levels were decreased by giving them informed consent before performing a medical procedure [14-16]. The subject educational background may have a role in lowering anxiety levels. Baradero (2008) stated that the higher the subject's educational background, the better the subject's understanding of the physician's information related to procedures, effects, benefits, and detriments before approving any medical procedure [17].

Pain sensations may influence an anxiety level increase in preoperative patients. Patients with pain complaints may be more anxious about its effects or respond more acutely to their pain sensations. Anxiety can be raised if a person feels threatened, such as fear of pain and during medical procedures [18]. Almost all patients undergoing surgery have fears and resulted in anxiety-induced anesthesia, especially women aged at 40 years of age [19, 20].

Communication between physician and patient during the informed consent process prior to general anesthesia could decrease preoperative patient anxiety levels. Torres et al. said that informed consent delivered by oral and written was better in reducing preoperative anxiety than video format in oral surgery [21]. In a patient with regional aesthesia, multimedia informed consent may reduce anxiety before surgery [22]. The patient feels that the interaction with the physician is a chance to share knowledge, feelings, and information to achieve an optimum result. Acquiring general anesthesia information may give more of a feeling of safety in a patient, because the patient knows that general anesthesia can relieve pain sensation during surgery procedure [16].

Conclusions

Our study results implied that giving informed consent to preoperative patients prior to administering general anesthesia could decrease their anxiety level.

Conflict of interest

The authors declare no conflict of interest.

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Ethical approval

This study was approved by the Ethical Review committee at the Faculty of Medicine and Health Science, Universitas Muhammadiyah Yogyakarta, Indonesia (No. 506/EP-FKIK-UMY/XII/2016).

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