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.

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 Hawai 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).

| 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         | 16 (41.0)                      | 14 (39.0)                     |

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 anesthesia, 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 Hospital which has allowed the selection of research subjects.

References
1. Badan Penguin Obat dan Makanan Republik Indonesia. Pedoman cara uji klinik yang baik di Indonesia. 3rd ed. Jakarta: Badan POM; 2016; 151 p. Indonesian. https://www.pom.go.id/new/files/CKB%202016.pdf
2. Dorland WA. Dorland’s illustrated medical dictionary. 32nd ed. Philadelphia, PA: Saunders/Elsevier. 2012; 2176 p. https://www.elsevier.com/books/dorlands-illustrated-medical-dictionary/dorland/978-1-4160-6757-8.
3. American Society of Anesthesiologists. General anesthesia. https://www.asahq.org/whensecondscount/anesthesia-101/types-of-anesthesia/general-anesthesia/
4. Rai E, Chen RYY, Nai CS, Hee HI. Evaluation of anesthesia informed consent in pediatric practice – An observation cohort study. J Anesthesiol Clin Pharmacol 2019; 35(4): 515-521. https://doi.org/10.4103/jaocp.jaocp_74_18.
5. Stuart GW. Buku saku keperawatan. 5th ed. Jakarta: EGC Publisher. 2006; 439 p. Indonesian.
6. Muttaqin A, Sari K. Asuhan keperawatan perioperatif konsep, proses, dan aplikasi. Jakarta: Salemba Medika. 2009; 622 p. Indonesian.
7. Pramono A. Buku Kuliah anestesi. Jakarta: Penerbit Buku Kodokteran EGC; 2014. 144 p. Indonesian. https://egcmmedbooks.com/buku/detail/2054/buku-kuliah-anestesi/
8. Hudetz AG. General anesthesia and human brain connectivity. Brain Connect 2012; 2(6): 291-302. https://doi.org/10.1089/brain.2012.0107.
9. Goldbergger JJ, Kruse J, Parker MA, Kadish AH. Effect of informed consent on anxiety in patients undergoing diagnostic electrophysiology studies. Am Heart J 1997; 134(1): 119-126. https://doi.org/10.1016/S0002-7812(97)00115-7.
10. Hawari D. Manajemen stres cemas dan depresi. 2nd ed. Jakarta: Balai Penerbit FKUI. 2011; 221 p. Indonesian.
11. Dahlan MS. Statistik untuk kedokteran dan kesehatan. 3rd ed. Jakarta: PT Arkans. 2011. 85 p. Indonesian.
12. Iskandar Y. Stress, anxietas dan penampilan. 1st ed. Jakarta: Dharma Graha Press. 1984; 101 p. Indonesian.
13. Nursalam. Konsep dan penerapan metodologi penelitian ilmu keperawatan. 2nd ed. Jakarta: Salemba Medika. 2008; 266 p. Indonesian.
14. Appulembang I. Provision of Informed Consent towards the Level of Anxiety in Pre-operation Patients at Mamuju District Public Hospital. Kesmas: National Public Health Journal 2017; 12(1): 33-37. https://doi.org/10.21109/kesmas.v12i1.1258.
15. Arifah S, Trise IN. Pengaruh pemberian informasi tentang persiapan operasi dengan pendekatan komunikasi terapeutik terhadap tingkat kecemasan pasien pre operasi di ruang bougenville RSUD Sleman. Jurnal Kebidanan 2012; 4(1): 140-219. Indonesian. http://doi.org/10.35872/jurkeb.v4i1.54.
16. Torres-Lagares D, Heras-Meseguer M, Azcárate-Vélazquez F, Hita-Iglesias P, Ruiz-de-León-Hernández G, Hernández-Pacheco E, et al. The effects of informed consent format on preoperative anxiety in patients undergoing inferior third molar surgery. Med Oral Patol Oral Cir Bucal 2014; 19(3): e270-e273. https://doi.org/10.4317/medoral.19480.
17. Baradero M, Dayrit MW, Siwadi Y. Keperawatan perioperatif: Prinsip dan praktik. Jakarta: EGC Publishing; 2008; 134 p. Indonesian.
18. House A, Stark D. Anxiety in medical patients. BMJ 2002; 325(7357): 207-209. https://doi.org/10.1136/bmj.325.7357.207.
19. Ruhiayem ME, Alshehri AA, Saade M, Shoabi TA, Zahoor H, Thawfeeq NA. Fear of going under general anesthesia: A cross-sectional study. Saudi J Anaesth 2016; 10(3): 317-321. https://doi.org/10.4103/1658-354x.179094.
20. Mavridou P, Dimitriou V, Manatangi A, Arnaoutoglou E, Papadopoulos G. Patient’s anxiety and fear of anesthesia: Effect of gender, age, education, and previous experience of anesthesia. A survey of 400 patients. J Anesth 2013; 27(1): 104-108. https://doi.org/10.1007/s00540-012-1460-0.
21. Torres-Lagares D, Heras-Meseguer M, Azcárate-Vélazquez F, Hita-Iglesias P, Ruiz-de-León-Hernández G, Hernández-Pacheco E, et al. The effects of informed consent format on preoperative anxiety in patients undergoing inferior third molar surgery. Med Oral Patol Oral Cir Bucal 2014; 19(3): e270-e273. https://doi.org/10.4317/medoral.19480.
22. Jalal HA, French JL, Foxall GI, Hardman JB, Bedforth NM. Effect of preoperative multimedia information on perioperative anxiety in patients undergoing procedures under regional anaesthesia. Br J Anaeth 2010; 104(3): 369-374. https://doi.org/10.1093/bja/aep002.

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