

# Anesthesiologists' perception of patients' anxiety under regional anesthesia

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**Abstract:** The aim of this survey is to report anesthesiologists' perception of patients' anxiety under regional anesthesia, its frequency, effects and causes, and the strategies employed to reduce it. Electronic questionnaires were sent to all grades of anesthesiologists in Nottingham, UK. The response rate for the survey was 79%. Over half of the anesthesiologists in our region believe that anxiety during regional anesthesia is not common. Surgery and anesthesia, followed by block failure were reported by anesthesiologists as the most common causes of patients' anxiety. Frequently employed techniques to manage anxiety were communication or sedation. Most respondents felt that regional anesthesia provides good analgesia and patient satisfaction. However, 20% felt that regional anesthesia is painful or unpleasant for patients, perhaps explaining the reluctance by some anesthesiologists to perform regional anesthesia.

**Keywords:** regional block, regional anesthesia

## Introduction

Having surgery is a stressful event in a patient's life. Anxiety is common pre-operatively, with a prevalence of up to 80%.<sup>1-3</sup> Common causes of patients' anxiety are fear of surgery, anesthesia and complications (eg, pain and nausea), previous unpleasant experience of anesthetics or surgery or a predisposing personality.<sup>4-7</sup> Previous "good" experiences (of anesthetics or surgery) invariably mean a more relaxed patient.<sup>8</sup>

Patients' expectations of the attitude and behavior of the staff toward them are another important factor that may affect their anxiety and overall hospital experience. If patients are unduly anxious and apprehensive about their operation, their physical recovery, well-being, and overall experience may be negatively affected. Many studies have investigated different interventions and their effect on patients' anxiety. These interventions include pharmacological anxiolytics,<sup>9</sup> distraction therapy,<sup>10</sup> and provision of information.<sup>11-13</sup>

Anesthesiologists' have a variable perception of patients' anxiety. Controversy exists on the ability of anesthesiologists to assess and predict patients' anxiety before surgery. Badner et al<sup>14</sup> reported that anesthesiologists are frequently inaccurate when assessing patients' anxiety and that they usually tend to underestimate it.<sup>14</sup> They recommended using more objective measures of anxiety (eg, visual analog scale) rather than relying on the assessment of the care provider. Nurses also inaccurately assess patients' anxiety, the commonest inaccuracy being overestimation.<sup>15</sup>

In contrast to Badner, anesthesiologists (using their clinical judgment) were found to accurately predict patients' anxiety.<sup>16</sup> However, this study only examined a restricted group of patients (obstetrics) and a modest correlation was found. Huppe

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et al<sup>17</sup> concluded that reliable estimation of anxiety is best sourced from patients.

With the growing number of surgical procedures that are performed under regional anesthesia; studies are emerging investigating patients' anxiety undergoing procedures under regional anesthesia and our ability to assess and predict pre-operative anxiety of patients having regional anesthesia.

In the present survey, we report how anesthesiologists perceive patient anxiety, its frequency, effects and causes, and their management strategies towards anxious patients having surgery under regional anesthesia. We wished to identify the variation in the current attitude of a group of anesthesiologists in the UK and to discuss this variation in the context of current evidence.

## Methods

The survey was reviewed by the local research ethics committee (LREC), who deemed that formal LREC application was unnecessary for this survey. The survey was carried out as part of a larger randomized controlled study designed to investigate improving patients' anxiety regarding regional anesthesia.

## Design

The questionnaire (appendix) was primarily designed to report the findings of some common problems facing anxious patients under regional anesthesia and the how anesthesiologists deal with them in accordance with anesthetic practice in the UK. The survey was set up as an on-line electronic questionnaire ([www.surveymonkey.com](http://www.surveymonkey.com)). The questions in this survey consisted of a series of closed statements answered "Yes" or "No". In addition, some questions were answered using a grading scale (1 = never/rarely, 2 = often, 3 = always). Anesthesiologists were instructed to report their opinions on how they perceive patients' anxiety, its frequency and causes. Additionally, from a list of anxiety management strategies, respondents were instructed to select which technique they routinely use to alleviate their patients' anxiety. Respondents were also asked about their perception of patients' satisfaction following regional anesthesia. Finally, anesthesiologists were encouraged to add any comments as free text.

## Sample

The preliminary draft of the questionnaire was first distributed to 10 anesthesiologists in our department, testing for accuracy, layout and clarity. No problem with the questionnaire was found. The generated electronic link to access the survey was then sent to 130 anesthesiologists of different grades in Nottinghamshire, UK in February 2008. Anesthesiologists' email

addresses were obtained from the database of the Nottingham and East Midlands School of Anesthesia and Nottingham University Hospital NHS Trust. Background data, including age, gender, and grade of anesthesiologists were collected. Consent was implied by submission of the completed survey. All completed questionnaires were anonymized. A second reminder was sent after four weeks for those who did not reply to the first questionnaire.

## Statistics

Numbers (percentages) of respondents were calculated and presented for each item in the questionnaire. Additional weighted average responses (WAR) were also quoted. Data were stored and analyzed in Microsoft Excel 2007 (Microsoft Corporation, WA, USA).

## Results

Datasets for 111 anesthesiologists (of various grades) were obtained. The response rate for the survey was 79%. The majority of participants were middle grade (40%) and consultants (43%), aged more than 31 yr (83%). There were more males (67%) than females (Table 1).

### Respondents' views were summarized into four categories

The frequency of patients' anxiety and perception of regional anesthesia (Table 2)

Only one third of respondents felt that anxiety is common among patients having regional anesthesia, mostly in the pre-operative period (62%). Although a minority of anesthesiologists (23%) felt that patients' anxiety is a problem; nearly half of them probably still underestimate it.

Despite over half of anesthesiologists thinking that they are prepared to deal with anxious patients, they admitted that patients' anxiety may increase their own anxiety, and reduce the overall success rate of the block. Fewer felt that anxiety may affect their confidence in performing the block (35%).

**Table 1** Demographic data of the respondents

		n	(%)
Age	<=30	19	17.4
	31–40	50	45.9
	41–50	30	27.5
	>=51	10	9.2
Gender	Female	35	33.0
	Male	71	67.0
Grade	Specialist Training Year 1, 2, 3	18	17.3
	Specialist Registrar	41	39.4
	Consultant	45	43.3

**Notes:** n, number of respondents; %, percentages.

**Table 2** Anesthesiologist's perception of patients' anxiety, its frequency and effects during regional anesthesia

	Agree n (%)	Disagree n (%)
Patients' anxiety is common during regional anesthesia	36 (33)	74 (67)
Anxiety is mostly pre-operative	69 (62)	41 (38)
Patients' anxiety concerns me a lot	25 (23)	85 (77)
I underestimate patients' anxiety	49 (44)	61 (55)
I am always prepared to manage patients' anxiety	66 (60)	44 (40)
Patients' anxiety may affect my anxiety	59 (53)	51 (46)
Patients' anxiety affects my confidence performing regional anesthesia	39 (35)	71 (65)
Patients' anxiety may affect block success	63 (57)	47 (43)
Differing advice from surgeon and anesthesiologist increases patient anxiety	100 (90)	10 (9)

**Notes:** n, number of respondents who agree/disagree with the statements; %, percentages.

### Causes of patients' anxiety (Table 3)

Anesthesia (85%) and surgery (77%), followed by block failure (65%) were reported by anesthesiologists as the most common causes of patients' anxiety. Over two thirds of respondents thought that insufficient or detailed pre-operative anesthetic information may not contribute to increasing patients' anxiety.

Nearly two thirds of anesthesiologists felt that patients' misconception or misinformation about regional anesthesia from family, friends or surrounding media is another cause of patients' anxiety. Only a third of respondents (32%) reported that patients' recall of previous negative experience of the block, and any possible complication of the block, may increase patients' anxiety.

### Management strategies to reduce anxiety (Figure 1)

The commonest strategies employed by anesthesiologists to reduce patients' anxiety were communication with the

patient and reassurance (95%), giving sedation (82%) and the use of distraction techniques (eg, listening to music) (54%). Only 15%–20% of respondents felt that partner attendance with the patient or watching the operation through a camera in the operating theatre may help alleviate patients' anxiety.

Only one third of respondents thought that written information about the block or allowing patients to see their nerves while being anesthetized on the ultrasound screen may reduce fear and anxiety. A minority of respondents (10%) do not intervene to reduce the anxiety in anxious patients, or may implement relaxation techniques (eg, deep breathing, meditation). None of respondents postpone anxious patients' surgery and only 2% may convert to general anesthesia.

### Patients' satisfaction with regional anesthesia (Table 4)

Almost all respondents felt that regional anesthesia provides good analgesia and patient satisfaction. They also thought that patients would have the block again if needed in the future (>94%). However, nearly 20% felt regional anesthesia is painful or unpleasant for patients. Respondents provided additional comments at the end of the survey. Their comments are summarized below (Table 5).

## Discussion

This survey revealed that over two thirds of respondents thought that anxiety is uncommon among patients having surgery while they are awake (having regional anesthesia); this is consistent with recent reports which showed a low rate of self-reported anxiety (36%) among regional anesthesia patients.<sup>18,19</sup>

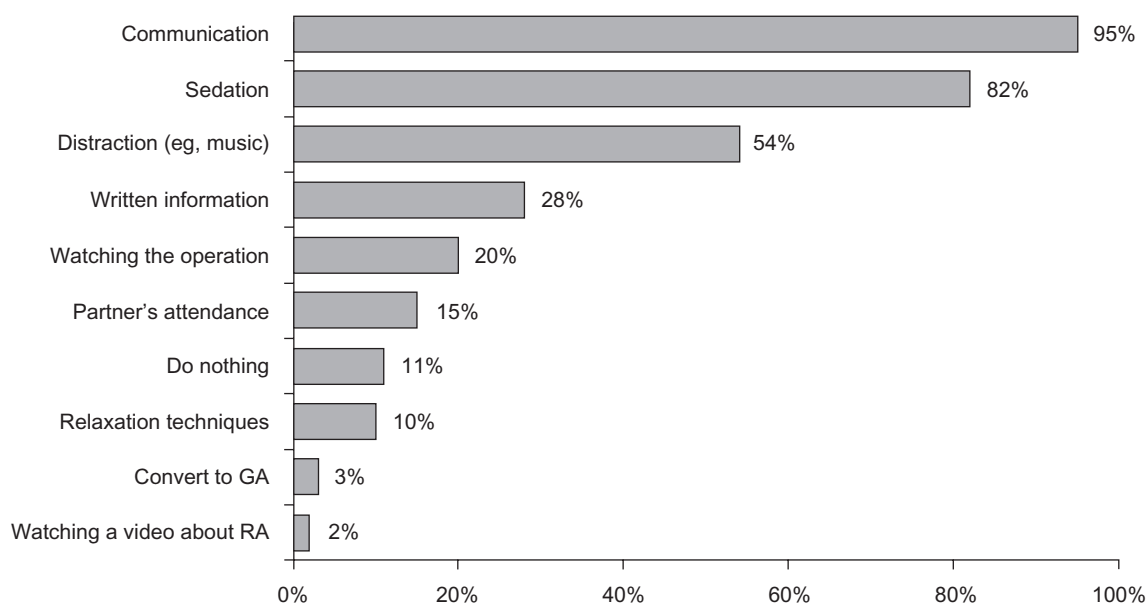
In the present survey, most surveyed anesthesiologists felt they are always prepared to manage anxiety; however, half of them admitted to underestimating it, and only a third can accurately predict it; in agreement with what was previously reported in that anesthesiologists are poor predictors of patients' anxiety and they usually tend to underestimate it.<sup>14</sup>

Anesthesia and surgery have been rated as the most common anxiety-provoking factors; similar findings have been reported by other studies.<sup>5–7</sup> Additional reported causes of anxiety may include inaccurate information conveyed to the patients from people, the internet, or advertising media. Patients may have been inaccurately informed by television or written stories that often exaggerate the frequency and impact of complications.

**Table 3** Causes of patient anxiety as anesthesiologists reported it

	WAR	n (%)
– Fear of anesthesia	2.5	94 (85)
– Fear of surgery	2.2	85 (77)
– Block not working	1.8	72 (65)
– Misinformation from lay people, family, friends, or surrounding media	1.5	65 (59)
– Needle-phobia	1.4	59 (54)
– Little pre-operative anesthetic information	0.9	41 (37)
– Recall of previous bad experience	0.7	36 (32)
– Fear of complications (pain/nerve damage)	0.7	32 (29)
– Detailed pre-operative anesthetic information	0.3	17 (15)

**Notes:** WAR = weighted average responses (1 = Never/ rarely; 2 = often; 3 = always); n = number of respondents who agree with the statements; % = percentages.



**Figure 1** Anesthesiologists' management strategies to reduce patients' anxiety.

Interestingly, most anesthesiologists believe that too much or too little information seems to have a small effect on patients' anxiety; this leaves anesthesiologists with the quandary of what is the appropriate amount of information to be conveyed to patients without increasing their anxiety.<sup>20,21</sup>

Patients are usually concerned about anesthetic complications (eg, pain and nerve damage); this has been found to be associated with the increased levels of anxiety.<sup>4,5</sup> However, less than one third of respondents think patients' fear of complications may increase their anxiety. This may suggest inaccuracy among anesthesiologists by underestimating patients' fear due to any possible complications. Although

these studies examined anxiety in patients having general anesthesia; lack of data about patients' anxiety during regional anesthesia makes it difficult to compare these findings.

Anesthesiologists felt that talking to patients and reassuring them, is the most effective method in reducing patients' anxiety. Indeed, a confident, professional and friendly relationship with the patient reduces anxiety. Seeing patients well in advance (as opposed to keeping them uninformed, then, one hour before surgery giving them all information and asking them to decide) with adequate explanation of the benefits and risks, along with constant communication and reassurance throughout the procedure, would establish rapport, build confidence and trust, and alleviate fears. Such patients do not usually feel pressurized.<sup>22</sup> Respondents' comments have suggested that simple reassurance and the affirmation that the patient always "has the option to go to sleep if needed", is usually enough to allay most anxieties.

Anesthesiologists often give sedative drugs or advise patients to listen to music of their preference, either pre-operatively or during the operation. All of these measures are well established methods to reduce patients' anxiety,<sup>9,10</sup> and patients usually gain benefit from them.<sup>23</sup> Several respondents commented upon the effectiveness of using anatomy slides and an orthopedic spine model to demonstrate how/where spinal/epidural needles are inserted, emphasizing they do not go into the cord itself.

Although viewing an anesthetic film about regional anesthesia pre-operatively or watching the operation intra-operatively has been shown to decrease patients' anxiety;<sup>19,24</sup>

**Table 4** Patients' experience with the block from anesthesiologists' perspective

	Anesthesiologists' perspective	
	WAR	n (%)
Patients experience pain during surgery	1.1	7 (6)
Patients experience pain during the block	1.2	20 (18)
Patients find the block unpleasant	1.2	22 (20)
Patients have adequate pain relief after surgery	2.1	104 (94)
Patients are satisfied with the block	2.1	107 (96)
Following regional anesthesia, patients would have a block again	2.1	108 (97)

**Notes:** WAR = weighted average responses (1 = Never/ rarely; 2 = often; 3 = always); n = number of respondents who agree with the statements; % = percentages.

**Table 5** Respondents' comments

<b>Anesthesiologists' concerns</b>	<p>Regional anesthesia strongly tests trust between patient and doctor</p> <p>Many anxious patients can still feel touch when they see you touching</p> <p>The block is best tested when patients cannot see you doing it</p> <p>Anxious patient who is not taken seriously is likely to get more worked up</p> <p>Even nervous patients are satisfied "that was nothing like as bad as I expected. I would have that again"</p> <p>For trainees, it is difficult; not knowing what equipment will be available, what the attitude of the staff, and what the patients are told</p>
<b>Improving anxiety</b>	<p>Hold their baby at cesarean surgery</p> <p>Talking to another patient who has already been through it</p> <p>Saying prayers if they are religious</p> <p>Encouraging patients to be honest about any anxiety or misgivings</p> <p>Realization that the block actually is working takes care of the others</p>
<b>Causes of anxiety</b>	<p>Poorly prepared patients, badly written pamphlets or internet sites</p> <p>The thought of being awake during surgery</p> <p>Anxious patients are generally young, or naturally more anxious</p> <p>Dislike of their numb and heavy feeling; breathlessness with a T4 block</p> <p>Religious, cultural (exposure in front of strangers) and language barriers</p> <p>Waiting time pre-operatively, or canceling the surgery</p>

only a minority of the respondents agreed that these two interventions were helpful to lessen patients' anxiety. This may have added to the controversy regarding the efficiency of these methods,<sup>25,26</sup> and the availability of these educational materials in our hospitals. These figures may be similar to those found in a study by Hyde et al<sup>23</sup> who reported more than two thirds of patients preferred not to watch the operation.

It is unusual or often not practical to have the patient's partner in attendance during a surgical procedure except in obstetrics where it is routine (at the mother's request). Anesthesiologists, in our survey, do not think partner attendance may help in improving patients' anxiety. In the literature, this has also shown a small positive effect on patients' anxiety, but was not considered to be clinically important.<sup>27</sup>

Despite all available measures adopted by anesthesiologists to help patients feel calm and less anxious, there is still a significant number of anesthesiologists who do nothing to manage anxious patients. Probably, these respondents underestimate anxiety, or do not consider it as a problem that needs to be solved.

Anesthesiologists felt that high levels of patients' anxiety may decrease the success rate of the block. Patients' anxiety was previously found to increase the failure rate of regional anesthesia.<sup>28</sup> This could be due to the direct effect of patients' anxiety on their anxiety and confidence in performing the block.

It is believed among anesthesiologists that regional anesthesia provides excellent anesthesia/analgesia; and that this will improve patients' satisfaction. As a result, most patients would have a similar block if needed in the future. However, fewer patients (18%–20%) still experience some

degree of pain and discomfort during the block procedure,<sup>29</sup> possibly due to differences in patients' perception of pain, or practitioners' experience. This may explain the reluctance by some anesthesiologists to perform regional anesthesia.

## Conclusion

Anesthesiologists in our region reported that anxiety during regional anesthesia is uncommon and that surgery and anesthesia, followed by block failure are the most common causes of patients' anxiety pre-operatively. The most commonly employed techniques to manage anxiety were communication followed by sedation. Virtually all respondents felt that regional anesthesia provides good analgesia and patient satisfaction. However, approximately 20% felt that the procedures are painful or unpleasant for patients, perhaps explaining reluctance by some anesthesiologists to perform regional anesthesia.

## Disclosure

The authors report no conflicts of interest in this work. The work was not supported by any external funding.

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## Appendix

### Anesthesiologists' perception of patients' anxiety under regional anesthesia

1. How concerned are you that anxiety is a problem during regional anesthesia (a lot, a little, none)?
2. What proportion of your patients undergoing regional anesthesia are anxious patients (most, some, none)?
3. In your opinion, what is the most concerning time for patients undergoing regional anesthesia (pre-op, intra-op, post-op)?
4. Do you feel prepared to react toward differing types of anxious patients' behaviors during regional anesthesia (always, sometimes, never)?
5. Does differing advice from surgeon and anesthesiologist regarding the various anesthetic techniques increase patients' anxiety (yes, no)?
6. How accurately do you think you assess your patients' anxiety prior to regional anesthesia (overestimate it, underestimate it, correctly estimate it).
7. Does patient anxiety have any effect on your anxiety (yes, no)?
8. Does patient anxiety have any effect on your level of confidence in performing the block (yes, no)?
9. Does patient anxiety have any effect on the success of the block itself (yes, no)?
10. How important is patient satisfaction to your practice (high, low)?
11. How often do you track your patients' satisfaction after a procedure under regional anesthesia (never, often, always)?
12. How often do you use the following techniques to alleviate patients' anxiety?  
*Please rate your answer (never/rarely, often, always).*
  - Do nothing
  - Give sedation
  - Written information/leaflet.
  - Postpone the operation
  - Communication/reassurance/tell a joke
  - Convert to general anesthesia
  - Distraction (eg, music, read a book)
  - Partner's attendance (partner/friend/relative)
  - Patients watching a video about regional anesthesia
  - Patients watching the procedure via operating camera
  - Encourage them to use relaxation techniques (eg, deep breathing/meditation)
  - In peripheral nerve blockade, patients seeing their nerves while being anesthetized on ultrasound screen.
13. What are the causes of patients' anxiety? (*never/rarely, often, always*).
  - Needle-phobia
  - Fear of unknown
  - Fear of the surgery/anesthesia
  - Recall of previous bad experience
  - Fear of complications (pain/nerve damage)
  - Regional anesthesia might make operation less successful
  - Giving patients detailed anesthetic information pre-op
  - Giving patients little anesthetic information pre-op
  - Misinformation from lay people, family, friends, and surrounding media.
14. Regarding the block, do you think...? (*never/rarely, often, always*)
  - Patients find the block unpleasant
  - Patients remember the events during the block
  - Patients experience pain during the block
  - Patients experience pain during surgery
  - Patients have adequate pain relief after surgery
  - Following regional anesthesia, patients would have a block again
  - Patients are satisfied with the block.
15. Please add any further comments.....

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