

# Development and validation of a Questionnaire to study practices and diversities in Plexus and Peripheral nerve blocks

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## ABSTRACT

**Background and Aims:** Regional anaesthesia techniques are a part of perioperative medicine that affects both perioperative and long-term outcomes. We have a paucity of the data on the usage and practices of plexus and peripheral nerve blocks (PNBs). To the best of our knowledge, this is the first effort to validate a survey for plexus and PNBs. Subsequently, this questionnaire could be used for the survey to look for the trends and disparities in PNB practices and further to develop a national registry in the future. **Methods:** Thirty questions were prepared after evidence-based search and reviewed by experts for suggestions. Changes were done and the questionnaire with the grading sheet was sent to 19 experts. The responses were analysed to calculate the content validity index (CVI) item-wise (I-CVI), scale-wise (S-CVI), and modified kappa statistics. The I-CVI of 0.78 and an S-CVI/average of 0.90 was taken as acceptable with more than six experts. **Results:** Fourteen experts out of 19 assessed and graded the questions as per the provided sheet and submitted suggestions through the mail. Question reframing, option reconsideration, and change from single to multiple choices were incorporated as per the suggestions of the experts. Mean I-CVI for relevance, simplicity, clarity, and ambiguity was 0.99, 0.98, 0.98, and 0.99, respectively. S-CVI/average was 0.98, 0.97, 0.98, and 0.99 for relevance, simplicity, clarity, and ambiguity, respectively. **Conclusion:** We conclude that this questionnaire has met the content validity criteria and can be used to study plexus and PNBs practices.

**Key words:** Peripheral nerve blocks, plexus block, questionnaire, survey, validation

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## INTRODUCTION

Various regional anaesthesia techniques including both neuraxial and peripheral nerve blocks (PNBs) are extensively used during perioperative pain management worldwide. Many studies have concluded that the patients receiving neuraxial versus general anaesthesia (GA) could have economic benefits and better medical outcomes,<sup>[1]</sup> including lesser incidences of infections, blood transfusions, adverse respiratory events, and intensive care unit admissions.<sup>[2,3]</sup> PNBs are used by both anaesthesiologists and emergency physicians for perioperative and procedural pain management. Few surveys on the use of regional anaesthesia and blocks have been conducted

previously;<sup>[4,5]</sup> however, none have used a validated questionnaire. Hence, we developed this questionnaire to study the trends and disparities in practices. Here, we describe the development of the content validity of the questionnaire<sup>[6,7]</sup> which involves mainly two steps.<sup>[8]</sup> Content validity refers to whether the

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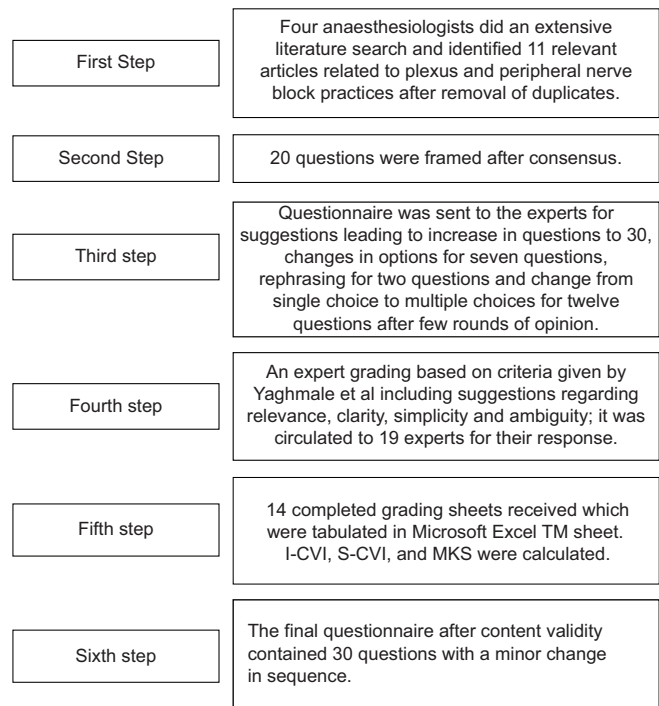
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questionnaire covers the content and domains that it is expected to be measured. In other words, it measures the comprehensiveness and representativeness of the content of a scale.<sup>[6]</sup> The content validity index (CVI) is an index of inter-rater agreement.<sup>[7]</sup> Evidence of content validity, CVI can be computed by grading the relevance of the items by the content experts.<sup>[6]</sup> We used the CVI and modified kappa statistic (MKS) using the probability of chance agreement as described by Polit *et al.* to estimate the content validity of the questionnaire developed.<sup>[6,7]</sup>

## METHODS

Four anaesthesiologists did an extensive literature search from various databases like PubMed, EMBASE, Cochrane Library, and Google Scholar to formulate the initial questionnaire after pooling the data related to various relevant points. The search words and phrases used were “Peripheral Nerve block,” “Plexus block,” “Plexus and nerve blocks,” “Peripheral nerve block survey,” “Plexus and nerve blocks survey,” “Nerve block practices,” “Peripheral Nerve block practices,” “Nerve block survey.” Few references were also searched manually. Eleven articles including surveys, abstracts, and reviews were identified. A questionnaire was framed with 20 questions initially which were increased to 30 after a few rounds for suggestions [Supplementary file- Appendix A]. Further review of the questionnaire resulted in changes in options for seven questions, rephrasing for two questions, and change from single choice to multiple choice for twelve questions. The questionnaire was evaluated by experts and the evaluation sheet was prepared to grade each question based on relevance, simplicity, clarity, and ambiguity of the framed question on a 4-point scale adopted from Yaghmale *et al.*<sup>[6]</sup> [Supplementary file- Appendix B] Both the questionnaire and the grading sheet were sent to 19 experts from different parts of India with extensive experience of at least 10 years in plexus and nerve blocks. They were requested to assess and grade the questionnaire and revert. The expected response rate was at least 50% of the experts and response was obtained from 14 experts. Figure 1 illustrates various steps involved. A minor change further suggested changing the sequence for better flow which included taking questions 26 and 27 to 11 and 12 along with question 3–30 [Supplementary file- Appendix C].

The data was entered and analysed in Microsoft® Excel, Mac version 16.36 software.



**Figure 1:** Steps for content validity

The item-wise content validity index (I-CVI) was calculated for each question using the formula:<sup>[6,7]</sup>

$$I - CVI = \frac{\text{Agreed items}}{\text{Number of experts}}$$

The scale content validity index (S-CVI) for the questionnaire was calculated by two methods, that is, S-CVI/Average (Ave) and S-CVI/universal agreement (UA) using the following formula:

$$S - CVI / Ave = \frac{\sum \text{Proportion relevance rating}}{\text{Number of experts}}$$

$$S - CVI / UA = \frac{\sum \text{UA score}}{\text{Number of items}}$$

MKS was used to evaluate the agreement between the experts for every question in each domain. Kappa Statistics was calculated using the following formula:

$$\kappa = \frac{ICVI - Pc}{1 - Pc}$$

Where Pc is the probability of chance agreement on relevance calculated by formula:<sup>[6,7]</sup>

$$Pc = \left[ \frac{N!}{A!(N-A)!} \right] X 0.5^N$$

(N = number of experts and A = number of experts in agreement on relevance)

The inference is based on few studies where the number of experts were taken as 2 (acceptable CVI -0.80),<sup>[9]</sup> 3–5 (acceptable CVI-1), at least 6 (acceptable CVI-0.80)<sup>[6,7]</sup> and 6–8 (acceptable CVI -0.80).<sup>[10]</sup>

## RESULTS

Fourteen experts (14/19) assessed and graded the questions as per the provided sheet and submitted suggestions through the mail. Completed proforma along with suggestions was sent through the mail. Various suggestions were given for changes in the option, including both language and their sequence for seven questions (question number 1, 6, 9, 15, 16, 20, and 29), rephrasing for two questions (14 and 27), and change from single choice to multiple choice for three questions considering the multifactorial influence in the respective domain (23, 24, and 25) [Appendix A]. The I-CVI for relevance [Table 1], simplicity [Table 2], clarity [Table 3], and ambiguity [Table 4] are given in respective tables.

The mean I-CVI for relevance, simplicity, clarity, and ambiguity was 0.99, 0.98, 0.98, and 0.99, respectively. The mean S-CVI/Average was calculated as 0.98, 0.97, 0.98, and 0.99 for relevance, simplicity, clarity, and ambiguity, respectively [Table 5].

## DISCUSSION

Content validity is defined as the adequacy of the representation of the items included in the tool to highlight the domains of the content as addressed by the instrument.<sup>[6]</sup> We followed the two-step method described by Armstrong *et al.*<sup>[11]</sup> In the first stage, we did domain specification, item generation, and instrument formation. Afterwards, experts reviewed the items and validity of the items that can be reported subjectively or by calculating the CVI. We chose CVI and MKS in estimating the content validity of our scale.<sup>[6,7]</sup> The method used by Yaghmale *et al.*<sup>[8]</sup> was used where the evaluation sheet was prepared to grade each question based on relevance, simplicity,

Table 1: Content Validity for relevance

Question Number	I-CVI	Probability Chance agreement	Modified Kappa Statistics	Inference
1	0.88	0.00183	0.87	Excellent
2	0.94	0.00024	0.94	Excellent
3	0.81	0.00854	0.81	Excellent
4	1.00	0.00002	1.00	Excellent
5	1.00	0.00002	1.00	Excellent
6	1.00	0.00002	1.00	Excellent
7	1.00	0.00002	1.00	Excellent
8	1.00	0.00002	1.00	Excellent
9	1.00	0.00002	1.00	Excellent
10	1.00	0.00002	1.00	Excellent
11	1.00	0.00002	1.00	Excellent
12	1.00	0.00002	1.00	Excellent
13	1.00	0.00002	1.00	Excellent
14	1.00	0.00002	1.00	Excellent
15	1.00	0.00002	1.00	Excellent
16	1.00	0.00002	1.00	Excellent
17	1.00	0.00002	1.00	Excellent
18	1.00	0.00002	1.00	Excellent
19	1.00	0.00002	1.00	Excellent
20	1.00	0.00002	1.00	Excellent
21	1.00	0.00002	1.00	Excellent
22	1.00	0.00002	1.00	Excellent
23	0.94	0.00024	0.94	Excellent
24	1.00	0.00002	1.00	Excellent
25	1.00	0.00002	1.00	Excellent
26	1.00	0.00002	1.00	Excellent
27	1.00	0.00002	1.00	Excellent
28	1.00	0.00002	1.00	Excellent
29	1.00	0.00002	1.00	Excellent
30	1.00	0.00002	1.00	Excellent

I-CVI (Item-wise content validity index)

Table 2: Content Validity for clarity

Question Number	I-CVI	Probability Chance agreement	Modified Kappa Statistics	Inference
1	0.88	0.00183	0.87	Excellent
2	1.00	0.00002	1.00	Excellent
3	1.00	0.00002	1.00	Excellent
4	1.00	0.00002	1.00	Excellent
5	0.94	0.00024	0.94	Excellent
6	1.00	0.00002	1.00	Excellent
7	1.00	0.00002	1.00	Excellent
8	1.00	0.00002	1.00	Excellent
9	1.00	0.00002	1.00	Excellent
10	1.00	0.00002	1.00	Excellent
11	1.00	0.00002	1.00	Excellent
12	1.00	0.00002	1.00	Excellent
13	1.00	0.00002	1.00	Excellent
14	1.00	0.00002	1.00	Excellent
15	1.00	0.00002	1.00	Excellent
16	0.94	0.00024	0.94	Excellent
17	1.00	0.00002	1.00	Excellent
18	1.00	0.00002	1.00	Excellent
19	0.94	0.00024	0.94	Excellent
20	1.00	0.00002	1.00	Excellent
21	1.00	0.00002	1.00	Excellent
22	1.00	0.00002	1.00	Excellent
23	0.94	0.00024	0.94	Excellent
24	0.88	0.00183	0.87	Excellent
25	0.94	0.00024	0.94	Excellent
26	1.00	0.00002	1.00	Excellent
27	1.00	0.00002	1.00	Excellent
28	1.00	0.00002	1.00	Excellent
29	0.94	0.00024	0.94	Excellent
30	1.00	0.00002	1.00	Excellent

I-CVI (Item-wise content validity index)

Table 3: Content validity for simplicity

Question Number	I-CVI	Probability Chance agreement	Modified Kappa Statistics	Inference
1	0.94	0.00024	0.94	Excellent
2	1.00	0.00002	1.00	Excellent
3	1.00	0.00002	1.00	Excellent
4	1.00	0.00002	1.00	Excellent
5	1.00	0.00002	1.00	Excellent
6	1.00	0.00002	1.00	Excellent
7	1.00	0.00002	1.00	Excellent
8	1.00	0.00002	1.00	Excellent
9	0.94	0.00024	0.94	Excellent
10	1.00	0.00002	1.00	Excellent
11	1.00	0.00002	1.00	Excellent
12	1.00	0.00002	1.00	Excellent
13	1.00	0.00002	1.00	Excellent
14	0.94	0.00024	0.94	Excellent
15	1.00	0.00002	1.00	Excellent
16	0.94	0.00024	0.94	Excellent
17	1.00	0.00002	1.00	Excellent
18	1.00	0.00002	1.00	Excellent
19	1.00	0.00002	1.00	Excellent
20	1.00	0.00002	1.00	Excellent
21	1.00	0.00002	1.00	Excellent
22	1.00	0.00002	1.00	Excellent
23	1.00	0.00002	1.00	Excellent
24	1.00	0.00002	1.00	Excellent
25	1.00	0.00002	1.00	Excellent
26	1.00	0.00002	1.00	Excellent
27	1.00	0.00002	1.00	Excellent
28	1.00	0.00002	1.00	Excellent
29	0.88	0.00183	0.87	Excellent
30	1.00	0.00002	1.00	Excellent

I-CVI (Item-wise content validity index)

clarity, and ambiguity of the framed question on a 4-point scale [Appendix B]. The I-CVI of 0.78 and an S-CVI/Average of 0.90 are acceptable when more than six experts have graded the tool. 10 Magnitude of kappa coefficients and strength of agreement were graded as  $<0.40$  = poor,  $0.40-0.59$  = fair,  $0.60-0.74$  = good, and  $0.75-1.00$  = excellent.<sup>[12]</sup> Previously, few surveys were done to get the trends in regional anaesthesia and these mostly focused on spinal and epidural anaesthesia<sup>[4]</sup> and attitude of anaesthesiologists toward PNBs.<sup>[5]</sup> PNBs are used by emergency physicians also and various surveys were done to test the knowledge, attitude, and practice of the physicians.<sup>[13,14]</sup> Use of the nerve stimulator has also been evaluated in a survey<sup>[15]</sup> but none of these studies have used a validated questionnaire. Various practices related to the regional blocks developed over time,<sup>[16,17]</sup> but data is missing. As with any self-reported measure, a risk of recall bias or inflated answers could be considered as a limitation of this questionnaire.

Table 4: Content validity for ambiguity of the questionnaire

Question Number	I-CVI	Probability Chance agreement	Modified Kappa Statistics	Inference
1	0.88	0.00183	0.87	Excellent
2	1.00	0.00002	1.00	Excellent
3	1.00	0.00002	1.00	Excellent
4	1.00	0.00002	1.00	Excellent
5	0.94	0.00024	0.94	Excellent
6	1.00	0.00002	1.00	Excellent
7	1.00	0.00002	1.00	Excellent
8	1.00	0.00002	1.00	Excellent
9	1.00	0.00002	1.00	Excellent
10	1.00	0.00002	1.00	Excellent
11	1.00	0.00002	1.00	Excellent
12	1.00	0.00002	1.00	Excellent
13	1.00	0.00002	1.00	Excellent
14	1.00	0.00002	1.00	Excellent
15	1.00	0.00002	1.00	Excellent
16	0.94	0.00024	0.94	Excellent
17	1.00	0.00002	1.00	Excellent
18	1.00	0.00002	1.00	Excellent
19	1.00	0.00002	1.00	Excellent
20	1.00	0.00002	1.00	Excellent
21	1.00	0.00002	1.00	Excellent
22	1.00	0.00002	1.00	Excellent
23	1.00	0.00002	1.00	Excellent
24	1.00	0.00002	1.00	Excellent
25	1.00	0.00002	1.00	Excellent
26	1.00	0.00002	1.00	Excellent
27	1.00	0.00002	1.00	Excellent
28	1.00	0.00002	1.00	Excellent
29	1.00	0.00002	1.00	Excellent
30	1.00	0.00002	1.00	Excellent

I-CVI (Item-wise content validity index)

This questionnaire is designed to collect data to evaluate the progress and changes in the practices of nerve blocks and to develop a national registry in the future.

We conclude that this questionnaire was designed to discover the trends and disparities in plexus and PNBs practices. Suggestion from the experts has been incorporated in this questionnaire. Furthermore, the questionnaire met the content validity criteria both by qualitative and quantitative analysis.

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**Table 5: Other parameters related to content validity**

Domain	Mean I-CVI	S-CVI/ Average	S-CVI/universal agreement
Relevance	0.99	0.98	0.86
Clarity	0.98	0.97	0.73
Simplicity	0.98	0.98	0.83
Ambiguity	0.99	0.99	0.90

I-CVI (Item-wise content validity index), S-CVI (scale-wise content validity index)

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### Conflicts of interest

There are no conflicts of interest.

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## SUPPLEMENTAL FILE (APPENDIX)

### Appendix A: Initial Questionnaire

Dear Sir/Madam,

You are requested to take part in the survey for “Plexus and Nerve block Practices in India” which will help to study the usage and practices of various blocks in India. We would like to inform you that your consent is voluntary and this will take 10-15 min. Collected data will be used for the analysis and we will maintain the anonymity. Thank you for taking up the survey.

- 1). Age/Sex:.....
- 2) Mail I.d-.....
- 3) AORA member: A) YES B) NO
- 4). Currently working as:
  - A) Senior Consultant/Professor
  - B) Junior Consultant/Associate
  - C) Senior Resident/registrar
  - D) Fellow
  - E) Post graduate
- 5). Working area:
  - a) Government college
  - B) Private college
  - C) Private Hospital/corporate
  - D) Free Lancer
- 6). How frequently are you using regional blocks for perioperative management?
  - A) Daily (> 70%)
  - B) Weekly (50-70%)
  - C) Half monthly (20-50%)
  - D) Monthly (<20%)
- 7) How frequently do you discuss the regional block plan with your patient?
  - A) Always (> 70%)
  - B) Frequently (50-70%)
  - C) Occasionally (20-50%)
  - D) Rarely (<20%)
- 8) Reason for using regional blocks:
  - A) Safety
  - B) Improved outcome and pain relief
  - C) Patient’s choice
  - D) Surgeon’s choice
  - E) All of the above
- 9) Where do you perform the blocks?
  - A) Operating room
  - B) Pre-operative area
  - C) Operating room, post-surgery
  - D) Recovery area

- 10) What are the barriers to practise regional blocks in your set-up?
- A) Surgeon's factors
  - B) Equipment Issues
  - C) Time factor
  - D) Knowledge/Experience
  - E) Cost factor
- 11) How did you train in regional anaesthesia?
- A) Self practice
  - B) Fellowship
  - C) Courses and workshops
  - D) During PG
- 12) How do you routinely perform regional blocks?
- A) USG guided
  - B) PNS Guided
  - C) Landmark technique
  - D) USG with PNS guided
- 13) Are monitors routinely attached before block?
- A) Yes
  - B) Occasionally for high risk patient
  - C) No
  - D) Only for paediatric patient
- 14) If a procedure can be done under either Regional Anaesthesia (RA)/General Anaesthesia (GA), what is your preferred choice?
- A) GA
  - B) RA
  - C) GA with RA
  - D) Patient's decision
- 15) Do you use peripheral nerve blocks in children?
- A) Yes, regularly
  - B) Mostly
  - C) Rarely
  - D) Never
- 16) Do you sedate your patients before blocks?
- A) Always
  - B) Apprehensive patients only
  - C) Only paediatric patients
  - D) Both B and C
  - E) Never
- 17) Mostly regional blocks are done at your place:
- A) Single injection
  - B) Catheter for infusion
  - C) Both single injection/catheter
  - D) None

- 18) Preferred drugs used for regional blocks:
- A) Bupivacaine
  - B) Ropivacaine
  - C) Lignocaine
  - D) Bupivacaine with lignocaine
- 19) What is your preferred additive for a peripheral nerve block?
- A) Clonidine
  - B) Dexamethasone
  - C) Dexmedetomidine
  - D) Fentanyl
  - E) Sodium bicarbonate
  - F) Others.....
- 20) What kind of needles do you use for blocks?
- A) Long bevel needles
  - B) Short bevel needles
  - C) Hypodermic needles
  - D) Spinal needle
  - E) Tuohy needle
  - F) Others.....
- 21) Does the cost of a block needle restrict its usage in your practice?
- A) Yes
  - B) Occasional
  - C) Rarely
  - D) No
- 22) How do you document regional blocks?
- A) Anaesthesia chart
  - B) Separate form for blocks
  - C) Patient file
  - D) No documentation
- 23) Disadvantages of regional blocks:
- A) Low success rate
  - B) Time required to establish
  - C) Poor acceptability
  - D) None
  - E) Others....
- 24) Complications seen during regional block:
- A) LA toxicity
  - B) Neurological deficits
  - C) Wrong side blocked
  - D) Pneumothorax
  - E) Respiratory Depression
  - F) Cardiac Arrest
  - G) None



- 25) Changes done after witnessing the complication:
- A) Effort to improve skills and knowledge
  - B) Changed to PNS guided
  - C) Changed to USG guided
  - D) Changed drug concentration
  - E) Changed drug volume
  - F) Stopped RA practice
  - G) Not Applicable
  - H) Others.....

- 26) Skin preparation done before block by:
- A) Povidone iodine
  - B) Chlorhexidine with alcohol
  - C) Spirit
  - D) Combination of A and B

- 27) Probe preparation method commonly used is:
- A) Sterile gloves
  - B) Biofilm covers
  - C) Camera cover
  - D) Chlorhexidine with alcohol rubs
  - E) Dip the probe in povidone iodine
  - F) USG not available
  - G) None

- 28) Most common upper limb block performed:
- A) Interscalene
  - B) Supraclavicular
  - C) Infraclavicular
  - D) Axillary
  - E) Isolated nerve blocks

- 29) Most common lower limb block performed:
- A) Femoral Nerve block
  - B) Fascia Iliaca Block
  - C) Sciatic Nerve block
  - D) Lumbar plexus block
  - E) Adductor canal Block
  - F) Ankle Block
  - G) Sacral Plexus Block

- 30) Do you have 20% intra-lipid in your setup?
- A) Yes
  - B) No

#### Appendix B: 4 point grading scale

Please grade each question as per the criteria given below in the tables.

#### Relevance

- 1. = not relevant
- 2. = item needs some revision
- 3. = relevant but needs minor revision
- 4. = very relevant

**Clarity**

1. = not clear
2. = item needs some revision
3. = clear but needs minor revision
4. = very clear

**Simplicity**

1. = not simple
2. = item needs some revision
3. = simple but needs minor revision
4. = very simple

**Ambiguity (inexactness, being open to more than one interpretation)**

1. = doubtful
2. = needs revision
3. = no doubt but needs minor revision
4. = meaning is clear

If the grading for the particular question is 2 or 3, please provide the suggestion on how to change the question or choices for improvement.

<u>Question</u>	<u>Relevance</u>	<u>Clarity</u>	<u>Simplicity</u>	<u>Ambiguity</u>
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## Appendix C: Final Questionnaire

Dear Anaesthesiologist,

You are requested to take part in the survey for “Plexus and Nerve block Practices in India” which will help us to study the usage and practices of various blocks and to develop a national plexus and blocks registry in future. Your consent is voluntary and this would take 10-15 min. Collected data will be used for the analysis while maintaining the anonymity. We appreciate your ‘Time & Knowledge Sharing’, thank you for taking up the survey.

- 1) Sex: Male/Female, Mail ID (optional)-.....
- 2) Age:
  - A) 20-30 years B) 31-40 years
  - C) 41-50 years D) 51- 60 years E) > 60 years
- 3) Your current professional experience: Degree- MD/DNB, Post degree- PD
  - A) MD/DNB student
  - B) 3-5 years PD
  - C) >5-10 yrs PD
  - D)>10-20 yrs PD
  - E) > 20 yrs PD
- 4). Your working area: (Teaching hospital-DNB course)
  - a) Government college
  - B) Private college
  - C) Teaching Hospital
  - D) Corporate
  - E) Private Practitioner
- 5). How frequently are you using Blocks for perioperative care on monthly case basis?
  - A) >70% B) >50-70%
  - C) 20-50% D) <20%
- 6) How frequently do you discuss the nerve block plan with your patient?
  - A) > 70% B) >50-70%
  - C) 20-50% D) < 20%
- 7) Most appropriate reason(s) according to you for using regional blocks: (May mark multiple choices)
  - A) Safety
  - B) Improved outcome and pain relief
  - C) Patient’s choice
  - D) Surgeon’s choice
  - E) All of the above
- 8) Where do you perform the blocks mostly?
  - A) Operating room
  - B) Pre-operative area
  - C) Dedicated procedure room
  - D) Recovery area
- 9) What are the barriers to practise regional blocks in your set-up? (May mark multiple choices)
  - A) Surgeon’s factors
  - B) Equipment Issues

- C) Time factor
- D) Knowledge/Experience
- E) Cost factor
- F) Patient Refusal
- G) PCPNDT act

10) Your best source(s) of training in nerve blocks? (May mark multiple choices)

- A) Self practice
- B) Fellowship
- C) Courses and workshops
- D) During postgraduation
- E) Internet

11) Skin preparation done before block by:

- A) Povidone iodine
- B) Chlorhexidine with alcohol
- C) Spirit
- D) Combination of A and B

12) USG probe asepsis method commonly used is:

- A) Sterile gloves
- B) Bio film covers
- C) Camera cover
- D) Chlorhexidine with alcohol rubs
- E) Dip the probe in povidone iodine
- F) USG not available
- G) None

13) How do you localise plexus/nerves before blocks? (May mark multiple choices)

- A) Landmark technique
- B) PNS guided
- C) USG Guided
- D) USG with PNS guided

14) Do you routinely attach monitors before block?

- A) Always
- B) Only for high risk patients
- C) Only for paediatric patients
- D) No

15) If a procedure can be done safely under either regional anaesthesia (RA)/general anaesthesia (GA), what is your preferred choice?

- A) GA B) RA
- C) GA with RA for pain relief D) Patient's decision

16) Do you use peripheral nerve blocks in children?

- A) >70%
- B) >50-70%
- C) 20-50%
- D) < 20%

- 17) Do you sedate your patients before blocks?
- A) Always
  - B) Apprehensive patients only
  - C) Only paediatric patients
  - D) Both B and C
  - E) Never
- 18) Preferred mode of plexus/nerve block practice at your place:
- A) Single injection
  - B) Catheter for infusion in adults only
  - C) Both single injection/catheter
  - D) Catheter for infusion in pediatric patients only
- 19) Preferred drugs used for plexus and nerve blocks: (May mark multiple choices)
- A) Bupivacaine
  - B) Ropivacaine
  - C) Lignocaine
  - D) Bupivacaine with Lignocaine
  - E) Ropivacaine with Lignocaine
  - F) Other (Please specify).....
- 20) What is your preferred adjuvant for a peripheral nerve block? (May mark multiple choices)
- A) Clonidine
  - B) Dexamethasone
  - C) Dexmedetomidine
  - D) Fentanyl
  - E) Soda bicarbonate
  - F) Other (Please specify).....
  - G) None
- 21) What kind of needles do you use for blocks? (May mark multiple choices)
- A) Echogenic needles
  - B) Stimulating nerve block needle
  - C) Short bevel needles
  - D) Hypodermic needles
  - E) Spinal needle
  - F) Tuohy needle
  - G) Other.....
- 22) Does the cost of a block needle restrict its usage in your practice?
- A) Always
  - B) Occasional
  - C) Rarely
  - D) Never
- 23) How do you document regional blocks?
- A) Anaesthesia chart/e-logbook
  - B) Separate form
  - C) Patient file
  - D) No documentation

- 24) In your opinion, disadvantages of Regional Blocks are: (May mark multiple choices)
- A) Low success rate
  - B) Time required to establish
  - C) Poor acceptability
  - D) None
  - E) Others....
- 25) Complications that you have seen during regional blocks: (May mark multiple choices)
- A) LA toxicity
  - B) Neurological deficits
  - C) Wrong side blocked
  - D) Pneumothorax
  - E) Respiratory Depression
  - F) Cardiac Arrest
  - G) None
  - H) Others.....
- 26) Practice changes done after witnessing the complication: (May mark multiple choices)
- A) Effort to improve skills and knowledge
  - B) changed to PNS guided
  - C) Changed to USG guided
  - D) Changed drug concentration
  - E) Changed drug volume
  - F) Stopped RA practice
  - G) Not applicable
  - H) Others.....
- 27) Most common upper limb block performed: (May mark multiple choices)
- A) Interscalene
  - B) Supraclavicular
  - C) Infraclavicular
  - D) Axillary
  - E) Isolated nerve blocks
- 28) Most common lower limb block performed: (May mark multiple choices)
- A) Femoral nerve block
  - B) Fascia Iliaca Block
  - C) Sciatic nerve block
  - D) Lumbar plexus block
  - E) Adductor canal Block
  - F) Ankle Block
  - G) Sacral Plexus Block
- 29) Do you have 20% intra-lipid in your regional anaesthesia cart?
- A) Yes
  - B) No
- 30) Are you member of any regional anaesthesia society?
- A) Yes, National
  - B) Yes, International
  - C) Both A & B
  - D) No