



## LETTER TO EDITOR

# “What do surgeons think about just before an operation while scrubbing?”



Dear Editor,

Surgeons are trained to make important decisions and perform high pressure tasks during surgery. Surgeon's mindset just before surgery will have impact on the actual execution of surgical steps, as mental readiness is the most important factor for performance in surgery, in addition to technical factors.<sup>1</sup> Surgeons' thought process just before actual surgery has not been studied; we have explored the thinking of the surgeons just before surgery, while scrubbing.

A Web-based tool (Google forms) was used to develop a questionnaire to obtain information about surgeon's thoughts just before operation, while scrubbing. The questionnaire included 12 questions which required dichotomous answers: yes or no (Table 1). The questionnaire also collected data on respondents' gender, duration of practice and specialty. This survey was made available online from 1st April 2018 to 30th June 2018. Link to the survey was sent by emails and WhatsApp messages to members of the Association of Surgeons of India and other Specialty Associations and surgeons were invited to respond.

Three thousands surgeons were invited to take the survey, 687 (22.9%) completed the questionnaire; demographic details of responders can be seen in Table 1. 46.8% (n = 322) responders were senior consultants (>10 years' experience), 38.5% (n = 265) were Junior Consultants (<10 years' experience) and 14.5% (n = 100) were Residents.

Majority (82.82%) of the Surgeons did mental revision of steps of surgery, were ready with alternative plans for

unexpected findings (86.02%), and thought of expected complications (81.65%). Apprehensions about infra-structural deficiencies (54.4%), anesthesia (55.45%) and limitations of scrub team/assistance (49.92%) also occurred. 55.9% participants prayed to God, while 38.28% worried about litigation. Thoughts about personal problems (17.75%), financial gain from the case (14.84%) and evening party/social event (17.75%) were not common (Table 1).

Financial gains from the surgery were thought of more by junior consultants (20.75%) than residents (9%) and senior consultants (11.80%). Residents (30%) thought of evening social events more than the junior consultants (18.86%) and senior consultants (13%) while scrubbing.

Neurosurgeons worried more than others about the litigation. Neurosurgeons and Pediatric Surgeons worried more than others about other serious patients operated by them recently, which is reflective of the delicate conditions of their patients (Table 1).

Most surgeons, consciously or subconsciously, just before surgery go over the details of the operation to prepare their minds for the surgical challenge ahead. Mental practice, also known as motor imagery, is mental cognitive rehearsal of a task in the absence of overt physical movement.<sup>2,3</sup> The act of performing motor tasks in the 'mind's eye' has been shown to have a positive and significant effect in surgery and surgical training.<sup>1,4,5</sup> Mental practice of task leads to automaticity, which aids in surgical performance. Mental preparation by surgeon, before actual surgical procedure has an important role to play and should be incorporated formally in preparation for surgery just like other tools e.g. simulation, safety check list etc.

**Table 1** Response to questionnaire by responding surgeons.

S no	Thoughts	General surgery 165		Neurosurgery 128		Pediatric surgery 118		Plastic surgery 103		Urology 56		CVTS 42		Others 76		Total	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Pray to god	95	70	84	44	56	62	48	65	27	28	26	16	46	30	384 (55.9%)	303 (44.10%)
2	Mental revision of steps of surgery/anatomy	134	31	111	17	103	15	90	13	43	16	35	7	53	23	569 (82.82%)	118 (17.17%)
3	Thinking about expected complications	145	20	115	13	93	25	75	28	39	20	32	10	62	14	561 (81.65)	126 (18.34%)
4	Worried about infrastructural deficiencies	90	75	91	37	52	66	48	55	30	29	19	23	44	32	374 (54.4%)	313 (45.56%)
5	Thinking about scrubbing team and assistance	82	83	77	51	55	63	46	57	24	35	20	22	39	37	343 (49.92%)	344 (50.07%)
6	Apprehension about litigation in this case	69	96	72	46	41	77	31	72	16	43	6	36	32	44	263 (38.28%)	424 (61.71%)
7	Alternative plans for unexpected findings	147	18	110	18	99	19	87	16	46	13	35	7	67	9	591 (86.02%)	96 (13.97%)
8	Apprehension about Anesthesia	96	69	90	38	72	46	47	56	22	37	14	28	40	36	381 (55.45%)	306 (44.54%)
9	Worry about the other serious patient operated by you	70	95	74	44	59	59	32	71	19	40	25	17	41	35	320 (46.57%)	367 (53.42%)
10	Personal problems going in your life	28	137	30	98	17	101	10	93	10	49	5	37	18	58	122 (17.75%)	565 (82.24%)
11	Financial gain of the case	19	146	24	104	14	104	23	80	8	51	5	37	14	72	102 (14.84%)	585 (85.15%)
12	Thinking about evening party/social event/ personal problems	27	138	26	102	14	104	17	86	12	47	6	36	20	56	122 (17.75%)	565 (82.24%)

## Conflict of interest

Nil.

## Sources of financial support

Nil.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.asjsur.2019.04.003>.

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3 April 2019