

# Quality and impact of survey research in pediatric anesthesiology

Samira Ahmed MD, Faizaan Syed MBBS, Rebecca Miller BS, Asad A. Khawaja BA, Dmitry Tumin PhD, Joseph D. Tobias MD  
Departments of Anesthesiology & Pain Medicine, Nationwide Children's Hospital and The Ohio State University,  
Columbus, Ohio

## Introduction

- Online survey research has rapidly emerged as a tool for studying clinical, educational, and professional issues in anesthesiology.
- Validity of survey data may be threatened by low response rates and missing data.
- We examined the prevailing quality and impact of survey research in pediatric anesthesia professional societies.
- We hypothesized that high response rates would signal high validity of survey findings and contribute to greater impact within and beyond the academic literature.

## Methods

- We conducted a systematic search of the MEDLINE database for English-language original research published in 2010-2016.
- Articles were independently coded by 3 investigators.
- Impact metrics included citation counts and Altmetric scores.

Table. Survey quality and impact metrics for reviewed articles

Citation	Societies surveyed	Year of survey	Sample size	Response rate	Number of reminders	Number of citations	Altmetric score <sup>a</sup>
Fahy, et al, Anaesth Intensive Care, 2013;41:102-7	SPANZA	2009	84	42	0	1	-
Coté, et al, Anesth Analg, 2014;118:1276-85	SPA	-	731	30	1	70	5
Nelson, et al, Anesth Analg, 2010;110:754-60	SPA	2009	294	41	0	42	2
Sathiyamoorthy, et al, J Clin Anesth, 2016;33:266-72	SPA	2014	805	28	2	1	-
Bradley, et al, Paediatr Anaesth, 2013;23:1006-9	APAGBI	2013	244	-	0	17	1
Calder, et al, Paediatr Anaesth, 2012;22:1150-4	APAGBI, ESPA, CPAS, SPANZA	2011	693	29	0	10	1
Firth, et al, Paediatr Anaesth, 2011;21:43-9	SPA	2009	510	24	2	9	1
Homer, et al, Paediatr Anaesth, 2010;20:638-46	APAGBI	2009	310	52	2	9	1
Patel, et al, Paediatr Anaesth, 2015;25:1127-31	SPA	2012	743	27	1	8	2
Pettigrew, et al, Paediatr Anaesth, 2012;22:438-41	APAGBI, AAGBI	2010	727	51	0	3	1
Rosen, et al, Paediatr Anaesth, 2015;26:207-12	CPAS	2013	106	51	2	3	3

## Results

- Eleven articles were included, totaling 5,247 respondents (median sample size = 510).
- Interrater agreement was strong, with ICC of 0.99, 0.82, 0.99, and 1.00 for response rates, number of reminders, number of citations, and Altmetric scores.
- Use of reminder invitations was not correlated with survey response rates
- Response rates were not correlated with citation counts or Altmetric scores

## Discussion:

- Response rates are low in published surveys of pediatric anesthesia professional societies, and were not correlated with use of reminders or article citations.
- This suggests that even surveys with low response rates may generate valid and useful knowledge for pediatric anesthesiologists.
- Low response rates and small sample sizes can limit precision in survey estimates.

### References:

Tait AR, Voepel-Lewis T. Survey research: it's just a few questions, right? Paediatr Anaesth 2015;25:656-62.  
Dillman DA, Smyth JD, Christian LM. Internet, phone, mail, and mixed-mode surveys: the tailored design method. Hoboken, NJ: Wiley.

