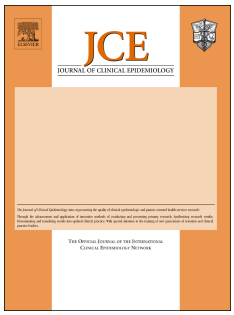

Response rates in email versus mail surveys for urologists: a randomized controlled trial

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Response rates in email versus mail surveys for urologists: a randomized controlled trial

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Surveys provide valuable information to guide health care but require high response rates to minimize bias. While most surveys are conducted electronically, mail surveys may result in higher response rates [1,2,3]. As part of a multinational survey addressing the management of hydroceles [4], we compared response rates between email and mail surveys, and embedded a randomized trial within the Finnish survey.

Methods

We randomized 170 practicing urologists, randomly identified from the Finnish Urological Association, to email or mail surveys [4]. In both groups, non-responders received the survey up to three times. The email group received a link to the survey – conducted using SurveyMonkey (www.surveymonkey.com) (Supplement). We sent the first round in October, the second in November, and the final round in December 2020.

To compare the email and mail groups, we estimated the response rate by response round and calculated two-sided p-values for the absolute difference in response rates between groups. We also constructed a logistic regression model addressing whether age, gender, consultant/resident, and email/mail were associated with urologists' likelihood to respond.

Results

Of the 170 invited urologists, 123 (72.4%) responded of whom over 95% in both groups responded to all questions (Supplement). We identified no important differences between target sample and respondents, or between those randomized to email or mail (Supplement).

In the first round, response rates were greater in the email (60.0%) than mail group (38.8%) (difference 21.2%, 95% CI 6.5-35.9, *p*=0.006). On the other hand, in the second round, response rate favored mail (difference 23.8%, 95% CI 6.0-41.5, *p*=0.02) as they did on the third round (difference 24.0%, 95% CI 4.2-43.9, *p*=0.03). After all three rounds the response rate was 69.4% in the email and 75.3% in the mail group (difference 5.9%, 95% CI -7.5-19.3, *p*=0.39) (Supplement).

In the regression analyses, age, gender, consultant/resident, or email/mail status did not influence final response rates ($p \geq 0.28$ for all).

Discussion

Our randomized trial comparing email and mail surveys, conducted as part of a survey on hydrocele management, found similar response rates between email (69%) and mail (75%) groups, but large differences across survey rounds. In the first round, response rates were 21% greater with email, but response rates were substantially greater in the mail group in the second (difference 24%) and third rounds (difference 24%). No baseline characteristic predicted urologists' likelihood to respond.

In the email group, over 80% of responses occurred in the first round, consistent with earlier studies suggesting that email surveys provide faster responses [1,3]. Our results demonstrate that reminders increase response, far more so in mail than email.

Our experience from analyzing the data suggests that use of email survey may decrease the risks of inconsistencies in responses. Another benefit of the use of electronic survey is the lower cost [1,2,3].

Evidence regarding mixed approaches, i.e., surveys combining electronic and mail approaches, is conflicting [3,5]. Our results suggest that future studies could explore if use of email survey first followed by mail reminders could maximize response rate when surveying health professionals regarding their practices.

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Conflicts of interest: All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare no conflicts of interest.

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References

[1] Sebo P, Maisonneuve H, Cerutti B, Fournier JP, Senn N, Haller DM. Rates, Delays, and completeness of general practitioners' responses to a postal versus web-based survey: A randomized trial. J Med Internet Res 2017;19(3):e83.

[2] Reinisch JF, Yu DC, Li WY. Getting a valid survey response from 662 plastic surgeons in the 21st century. Ann Plast Surg 2016;76(1):3-5.

[3] Hardigan PC, Popovici I, Carvajal MJ. Response rate, response time, and economic costs of survey research: A randomized trial of practicing pharmacists. Res Social Adm Pharm 2016;12(1):141-148.

[4] Forss M, Bolsunovskyi K, Kilpeläinen TP, et al. Practice variation in the management of adult hydroceles: a multinational survey. Submitted to Eur Urol 2023 (under review).

[5] Beebe TJ, Jacobson RM, Jenkins SM, Lackore KA, Rutten LJF. Testing the impact of mixed-mode designs (mail and web) and multiple contact attempts within mode (mail or web) on clinician survey response. Health Serv Res 2018;53 Suppl 1(Suppl Suppl 1):3070-3083.

Declaration of interest

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare no conflicts of interest.