

SWAT 226: Interventions to optimize response rates for online, patient-reported outcome measures

Objective of this SWAT

- 1) To evaluate the effect on the patient-reported outcome measure (PROM) survey response rate of using different tones in email reminders to participants.
- 2) To evaluate the effect on the PROM survey response rate of offering participants a monetary versus non-monetary incentive.

Study area: Follow-up, Outcomes, Data Quality

Sample type: Participants, Patients

Estimated funding level needed: Low

Background

Patient-reported outcome measures (PROMs) are a crucial component of pragmatic, patient-centred randomized trials. They provide unique information from the patient perspective, such that their inclusion helps to ensure that the effect of the trial intervention(s) is evaluated in a comprehensive manner.[1] While electronic capture of PROMs has many advantages relative to traditional, paper-based PROMs (which are resource-intensive and prone to error),[2] response rates are suboptimal, limiting validity and applicability.[3] Better strategies to improve the completion of online PROMs are vital to ensure trial validity and maximize efficiency of trial conduct.

This Study Within a Trial (SWAT) will test specific interventions to maximize the response rates of PROM surveys. Specifically, we will explore the impact of two areas of uncertainty:[4,5] (1) using different tones in email reminders to participants (developed in collaboration with our patient partners); and (2) offering participants monetary or non-monetary incentives to complete the surveys (with total value equal between the two arms and participants being informed of the incentive in their initial survey invitation and in their reminders).

Providing encouragement and offering incentives are recommended strategies to minimize missing PROM data, but evidence to support the effectiveness of each these is lacking or conflicting.[5] The recent update of a Cochrane Review reported that the odds of response to a postal questionnaire were increased by over a half when a monetary incentive rather than a non-monetary incentive was used (17 trials, 28,212 participants; OR 1.67; 95% CI 1.47 to 1.90), but there was considerable heterogeneity among the results.[3] The review included three trials (3614 participants) that evaluated the effect of a monetary rather than a non-monetary incentive on electronic questionnaire response, with no evidence of an effect (OR 0.89; 95% CI 0.63 to 1.26).[3] Another Cochrane Review of the effect of strategies to improve retention of participants in randomised trials concluded that none of the comparisons provided high-quality evidence, emphasizing the need for further studies. The use of electronic reminders was highlighted as a key recommendation for future research.[6] Particularly relevant to this SWAT, the review included a factorial trial of pre-notification and use of a pleading (vs. non-pleading) tone in email reminders on survey response, which found weak evidence that the pleading tone increased response, although the trial was too small to detect the effects of the interventions.[4]

Interventions and comparators

Intervention 1: Participants will receive a duty-laden reminder (at 2 days, and again at 4 days, as needed) by email if they do not respond to the initial electronic survey invitation and a small monetary incentive (e.g., \$5 gift card) upon completion of their survey.

Intervention 2: Participants will receive an encouragement-laden reminder (at 2 days, and again at 4 days, as needed) by email if they do not respond to the initial electronic survey invitation and a small monetary incentive (e.g., \$5 gift card) upon completion of their survey.

Intervention 3: Participants will receive a duty-laden reminder (at 2 days, and again at 4 days, as needed) by email if they do not respond to the initial electronic survey invitation and a non-monetary incentive (e.g., entry into a draw, with 1 in 500 chance of winning a \$2500 gift card) upon completion of their survey.

Intervention 4: Participants will receive an encouragement-laden reminder (at 2 days, and again at 4 days, as needed) by email if they do not respond to the initial electronic survey invitation and a

non-monetary incentive (e.g., entry into a draw, with 1 in 500 chance of winning a \$2500 gift card) upon completion of their survey.

Index Type: Method of Follow-up, Incentive

Method for allocating to intervention or comparator

Randomisation

Outcome measures

Primary: Completion of the PROM survey, collected 30 days after surgery.

Secondary: Participants' perceptions of the SWAT interventions, assessed using qualitative methods (i.e., in-depth, semi-structured qualitative interviews).[7]

Analysis plans

The primary analyses will compare the completion of the PROMs across the 4 groups. Between-group comparisons will be made for each strategy using multivariable logistic regression models. Interaction between strategies will be investigated by including an interaction term in the regression model. In the absence of any evidence for such an interaction, the main effects for each of the factorial elements will be estimated, along with their 95% confidence intervals.

In keeping with the iterative nature of qualitative methodology, the qualitative analysis will co-occur with data collection to continuously monitor emerging themes. Interviews will be analyzed using a thematic analysis approach, enabling the identification of patterns of experience and meaning.[8,9] We will extract and collate interview sections that reflect key areas of interest and carry out initial coding, and will then use the emergent codes to guide a de-novo analysis of the entire corpus for overarching sub-themes, using NVivo to record which subthemes occurred in each interview to ensure their accurate representation in the analysis. Subthemes that express similar experiential patterns will be compiled to develop one or two core themes if appropriate.

Possible problems in implementing this SWAT

Lack of discernible difference between the tones of emails and difficulties in untangling the effects of interventions (e.g., if there is an interaction)

References

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2. Meirte J, et al. Benefits and Disadvantages of Electronic Patient-reported Outcome Measures: Systematic Review. *JMIR Perioperative Medicine* 2020;3(1):e15588.
3. Edwards PJ, et al. Methods to increase response to postal and electronic questionnaires. *Cochrane Database of Systematic Reviews* 2023;(11):MR000008.
4. Felix LM, et al. Factorial trial found mixed evidence of effects of pre-notification and pleading on response to Web-based survey. *Journal of Clinical Epidemiology* 2011;64(5):531-6.
5. Mercieca-Bebber R, et al. Design, implementation and reporting strategies to reduce the instance and impact of missing patient-reported outcome data: a systematic review. *BMJ Open* 2016;6(6):e010938.
6. Gillies KA, et al. Strategies to improve retention in randomised trials. *Cochrane Database of Systematic Reviews* 2021;(3):MR000032.
7. Adams WC. Conducting Semi-Structured Interviews. In: Newcomer KE, Hatry HP, Wholey JS (editors). *Handbook of Practical Programme Evaluation*, 4th edition. 2015: pp.492-505.
8. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006;3(2):77-101.
9. Guest G, et al. *Applied Thematic Analysis*. 2012.

Publications or presentations of this SWAT design

Examples of the implementation of this SWAT

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Date of idea: 8/JUN/2023

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