

# A protocol for evaluating the impact of a course to teach scientific writing

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## Background

Scientific writing and scientific publications are pivotal for the advancement of science, not only in pharmacology, but in all scientific disciplines. Nevertheless, many undergraduate science programmes lack specific writing courses.

Various initiatives have sought to improve scientific writing skills through face-to-face and/or online courses. However, few studies have analysed the short- and long-term results of such training interventions<sup>1</sup>.

Our aim is to present a protocol of a study to evaluate short- and long-term competences in scientific writing after a course on scientific writing with two teaching modalities (face-to-face and online).

## Methods

The study will evaluate the competences in scientific writing of attendees of the course "How to write a scientific paper" in face-to-face<sup>2</sup> and online<sup>3</sup> formats (see book<sup>4</sup>) during 2018 and 2020. This study will be designed as an open non-randomized trial with a control group.

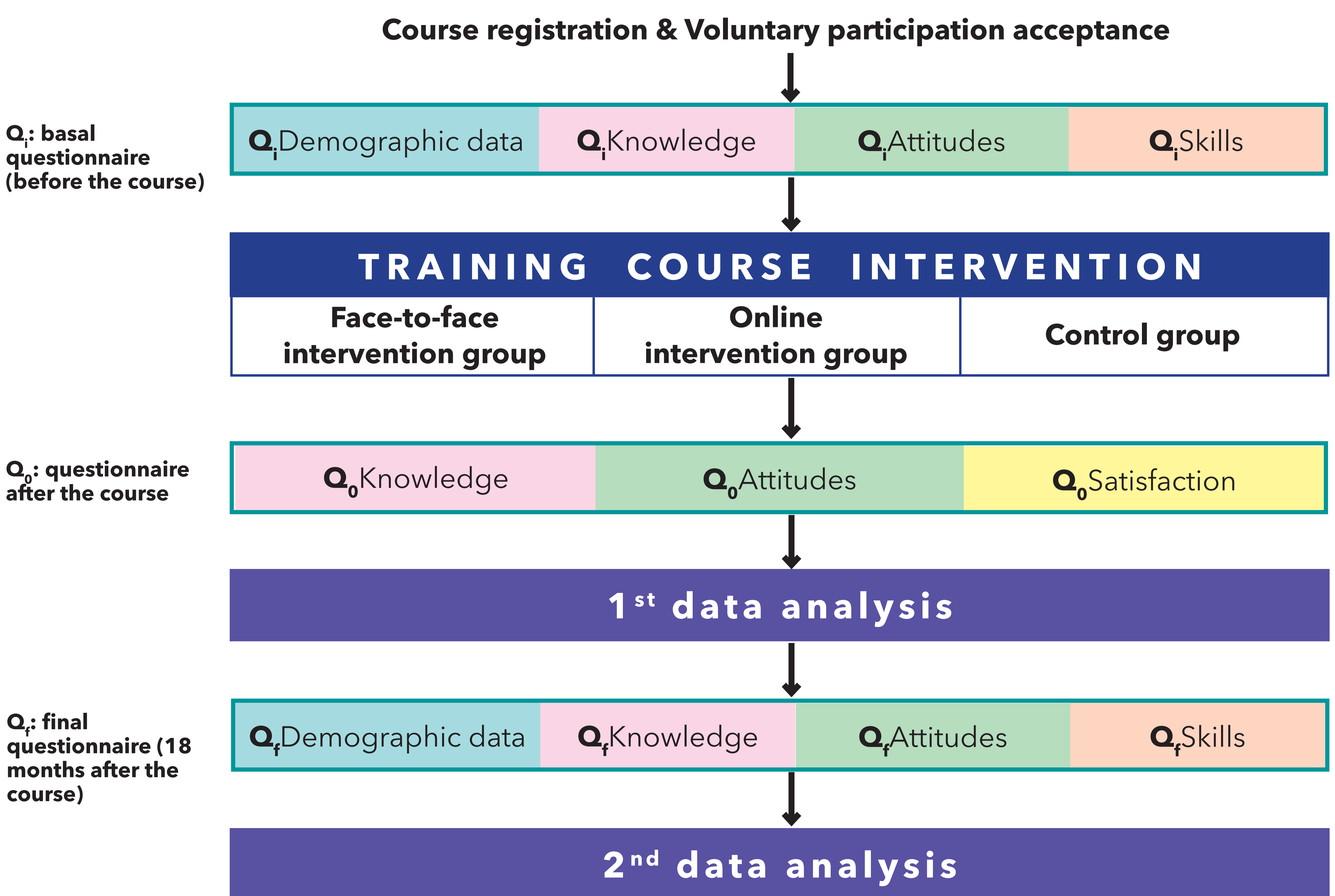
The study will use questionnaires to analyse attendees' satisfaction with the course, their knowledge ( $Q_K$ ) about scientific writing, attitudes ( $Q_A$ ) towards writing, and writing skills ( $Q_S$ ). Attendees will complete the questionnaires before, immediately after and, 18 months after the course. The satisfaction questionnaire will be

administered only immediately after the course. The skills questionnaire will analyse the number and type of scientific publications produced after the course. Attendees' satisfaction and writing competences will be compared against a control group. The sample size would be 270 participants, 90 per group.

## Study design

The study will take place between 2018 and 2020 recruiting participants from 6 face-to-face and 4 on-line editions of the writing course. Here we present the study design, through the following flowchart (Figure 1) that summarizes the design, main deadlines and goals of each phase.

Figure 1. Flowchart summarizing protocol for evaluating the impact of a course to teach scientific writing



## Conclusions

This protocol summarizes a challenging study in which we hope to confirm the usefulness of the training courses on scientific writing and the hypothesis that face-to-face courses are more useful than online ones.

By sharing this project's protocol, we seek to improve the study's design by incorporating suggestions from our peers at the international congress of pharmacology.

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## Disclosure of Conflict of Interest

Serés E., Escalas C., Fernández E., Vives-Cases C., Bosch F. (the authors) have no COI with regard to the presentation.

## 1. Accepted abstract by the congress organization:

### A protocol for evaluating the impact of a course to teach scientific writing

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**Background.** Scientific writing and scientific publications are pivotal for the advancement of science, not only in pharmacology, but in all scientific disciplines. Nevertheless, many undergraduate science programmes lack specific writing courses. Various initiatives have sought to improve scientific writing skills through face-to-face and/or online courses. However, few studies have analysed the short- and long-term results of such training interventions. Our aim is to present a protocol of a study to evaluate short- and long-term competences in scientific writing after a course on scientific writing with two teaching modalities (face-to-face and on-line).

**Methods.** The study will evaluate the competences in scientific writing of attendees of the course "How to write a scientific paper" in face-to-face and online formats during 2018 and 2019 by means of an open non-randomized trial with a control group. The study will use questionnaires to analyse attendees' satisfaction with the course, their knowledge about scientific writing, attitudes towards writing, and writing skills. Attendees will complete the questionnaires before, immediately after and, one and two years after the course. The satisfaction questionnaire will be administered only immediately after the course. The skills questionnaire will analyse the number and type of scientific publications produced after the course. Attendees' satisfaction and writing competences will be compared against a control group. The sample size would be 270 participants, 90 per group.

**Results.** The study will take place between 2018 and 2021 recruiting participants from 6 face-to-face and 4 on-line editions of the writing course. Here we present the study protocol, including a flowchart, the design and main statistical methods, the validation process of the questionnaires, and the results obtained in the pilot study.

**Conclusions.** This protocol summarizes a challenging study in which we hope to confirm the usefulness of the training courses on scientific writing and the hypothesis that face-to-face courses are more useful than online ones. By sharing this project's protocol, we seek to improve the study's design by incorporating suggestions from our peers at the international congress of pharmacology.

## 2. Links:

Serés E, Escalas C, Fernández E, Vives-Cases C, Bosch F. A protocol for evaluating the impact of a course to teach scientific writing [Internet]. Abstract accepted at: 18th World Congress of Basic and Clinical Pharmacology; 2018 July 1-6; Kyoto, Japan. Available at: [https://www.micenavi.jp/wcp2018/search/detail\\_program/id:952](https://www.micenavi.jp/wcp2018/search/detail_program/id:952)

Serés E, Escalas C, Fernández E, Vives-Cases C, Bosch F. A protocol for evaluating the impact of a course to teach scientific writing [Internet]. Poster presented at: 18th World Congress of Basic and Clinical Pharmacology; 2018 July 1-6; Kyoto, Japan. Available at: <https://www.esteve.org/libros/poster-information-about-drugs-in-the-spanish-press-kyoto/>

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