

Quantitative data analysis plan

Recruitment and retention rates will be presented as a Consolidated Standards of Reporting Trials (CONSORT) participant flow diagram, displaying overall, training group and control group results at each assessment point. We will use descriptive statistics (means and SD; n (%) and range) to assess baseline characteristics (gender, age, ethnicity, year group, country, degree of family affluence, ability to provide peer support (motivation, perceived skills, frequency of support giving), compassion for others-engagement and actions, connectedness to peers, wellbeing, emotional symptoms, self efficacy, civic engagement (attitudes and behaviour) for the training group, control group and total sample.

We will use a series of analysis of covariance (ANCOVAs) to compare training and control groups on each primary outcome (motivation to provide support, perceived skills to provide support, frequency of support giving, compassion for others-engagement, compassion for others-actions, connectedness to peers) 1 week post-randomisation, adjusting for corresponding baseline score, gender and age. We will repeat these analyses for 1 week post-randomisation secondary outcomes (wellbeing, emotional symptoms, self-efficacy, civic attitudes, civic behaviours), adjusting for corresponding baseline score, gender and age. The study will have 80% power and 5% alpha to detect differences between the training and control groups with effect sizes of 0.30 (based on 100 recruited participants, 90% retention to post assessment).

To explore outcomes up to 4 weeks post-randomisation for the training group, we will use repeated measures analysis of variance, examining 1) motivation to provide support 2) perceived skills to provide support 3) frequency of support giving 4) connectedness to peers.

We will use ITT (intention-to-treat) principles and the last observation carried forward approach in all analyses. We will try to prevent any missing data by sending participants reminders to complete measures and using online surveys with prompts to complete any missing items. We will carry out the following sensitivity analyses to assess the robustness of results 1) participants with complete data to assess the potential impact of missing data 2) participants who attend a minimum of 3 training sessions 3) using pre-post change scores 4) participants aged 16 years. Where group differences are found in the main analyses, we will conduct additional exploratory analyses to investigate the relationship between outcomes. We also plan to explore the potential role of baseline ability to provide peer support, emotional symptoms and wellbeing. We will conduct subgroup analyses according to baseline 1) motivation to help others 2) frequency of support giving 3) emotional symptoms and 4) wellbeing.

Qualitative analysis plan

We will use a content-analysis approach to generate common themes for participants' responses to open-ended questions. The methodology will include both theoretical/deductive (top-down exploration) and inductive (bottom-up defined themes) analyses. Coding frameworks will be co-produced by YPAG members and researchers based on the full

dataset. The scheme will be validated by two independent coders and reliability calculated, adopting a threshold of $\kappa = 0.6$ (substantial agreement, O'Connor and Joffe, 2020). Disagreements will be resolved by a third coder. Following coding, YPAG members and two researchers will work together to design thematic maps based on frequent themes and subthemes.

Open-ended questions were only completed by the training group, 1, 2, 3 and 4 weeks post-randomisation. We will separately analyse responses to questions related to: (a) impact and experiences of training, (b) use of peer support skills and (c) intentions to use skills, as follows:

a) Impact and experiences of training (1 week post-randomisation)

- *Has the training impacted your life in any way (e.g., how you see yourself, relationships, day-to-day life)? How? We would like to hear about any positive and negative impact.*
- *Please tell us about your experience of the training itself. What did you enjoy about it? Do you have any suggestions for changes that might improve it?*

A deductive approach will guide exploration of data within each of the following predefined relevant outcomes (also examined in the quantitative data analysis): wellbeing, emotional symptoms, self-efficacy, civic engagement, connectedness, ability to help others (motivation, skills, behaviour). Other additional themes, not related to these areas, will be recorded and coded inductively to ensure that the different experiences and perspectives of participants are captured.

b) Use of peer support skills (2, 3, 4 weeks post-randomisation)

- *Please give an example of how you used your peer support skills over the past week (i.e. context and the skills you felt were most useful)*

Inductive analysis will be guided by a co-produced coding framework covering the following areas: target of peer support; perceived or reported need for peer support; skills used; reported outcome for target; perceived outcome for self; other aspects reported.

c) Intentions to use peer support skills (1 week and 4 weeks post-randomisation)

- *Do you plan to use what you learnt from the training in your life moving forward? [If "yes" or "maybe"] How do you plan to use what you learnt?*

We will assess young people's motivation through their expressed intentions to use skills learned on the training course in the future, using a bottom-up approach. We will compare themes identified at the two time points - immediately after training and at the final follow-up - to analyse changes in motivation and reported intentions.

O'Connor, C., & Joffe, H. (2020) Intercoder reliability qualitative research: debates and practical guidelines. *International Journal of Qualitative Methods*, 19, 1-13.