Investigating the Role of Probiotics with Sertraline in Treating Moderate Depression: A Pilot Study

Depression is a common condition that affects millions of people worldwide. Research suggests that the balance of bacteria in the gut may influence mental health. Probiotics, which are beneficial bacteria, have shown potential in improving gut health and possibly supporting mental well-being. However, their effectiveness in treating depression, especially when used alongside antidepressants like sertraline remains unclear.

This study aims to explore whether taking probiotics alongside sertraline leads to better outcomes for people with moderate depression, compared to taking sertraline with a placebo (a substance with no active ingredients).

Changes in depression symptoms, using two widely used mental health questionnaires, of the Hamilton Depression scale and Patient Health Questionnaire, will be assessed. Blood markers related to inflammation (C-reactive protein) and metabolism (lipid or fat levels) will also be examined. Depression and heart health can have an influence on the level of theses markers.

The study will use a double-blind, placebo-controlled design with 100 participants recruited from general practice. In other words, neither the participants nor the researchers know who is receiving the real treatment (probiotics) and who is receiving the placebo (a dummy treatment with no active ingredients). This makes the study as fair and reasonable as possible. Informed consent will be obtained through face-to-face discussions, highlighting potential side effects and ensuring the right to withdraw at any time without compromising clinical care. The participant's GP will be informed of their involvement in the study, in case it affects their care.Confidentiality will be maintained through anonymisation, with physical documentation stored securely and digital data encrypted.

Participants will be randomly assigned to receive either sertraline with the probiotic liquid drink, Symprove (containing predominantly Lactobacillus strains) or sertraline with a placebo, identical in appearance but lacking active ingredients, for 13 weeks. Questionnaires and blood tests will be administered before and after treatment. The overall burden of participation will be 5 visits over14 weeks.

- **Visit 1:** Check eligibility and consent. Offered £20 participation voucher at completion.
- **Visit 2**: Randomisation, confirm consent, answer questionnaires with psychologist and have bloods, BP and BMI taken. Participants will be issued a code to collect the liquid drink.
- **Visit 3:** See health care to assess progress, concordance with liquid drink, discuss any side effects, review consent with freedom to withdraw. Access to medical advice if needed. Further code for liquid drink.
- **Visit 4:** Same as visit 3.

- **Visit 5:** As visit 3 but without the code for the liquid drink. There will be repeat questionnaires with psychologist, bloods, BP, BMI and issue of voucher. Participants will be informed of the results of the study 3 months after completion, in a manner of their choosing, either by post, email or accessing the practice website.

Participants will benefit from regular check-ups on their mental and physical health throughout the study. Some may experience mild side effects from the probiotic, such as bloating or more frequent bowel movements, but previous research has found these to be minor. While we cannot guarantee that taking part will improve mood or heart health, there is a possibility of these benefits.

The main purpose of the study is to help advance research, which could lead to better treatment options in the future. It may provide the first clinically meaningful evaluation of probiotics as an addition to sertraline in the treatment of moderate depression in primary care, offering valuable insights for future research and clinical practice.

- Is the purpose of the study clear to you? If not, what part is confusing?

- Do you understand the role of probiotics and sertraline in the study?

- Were the procedures and visits explained in a way that you could easily follow?

- Is there any terminology or section that you found difficult to understand?

- Do you feel informed about the potential benefits and side effects of participating in the study?

- What additional information would you like to know about the study?

- How comfortable would you feel participating in this study based on the summary provided?