

Reflective Report

Name:	Yara Alhajji
Faculty:	Faculty of Biological sciences
Email address:	Dn23ya@leeds.ac.uk
Title of Scholarship Project:	Exploring Public Understanding of Antibiotics: A Survey of Sixth Formers and Dental Students

Introduction

At the beginning of the project, I met with my supervisor several times to shape the direction of the research. Initially, the project's title was quite broad, but through discussion we refined it into something more specific and niche: public understanding and misconceptions of antibiotics. This refinement not only enhanced the relevance of our research but also made it more manageable and impactful within the healthcare sector.

Together, we developed a clear 6 week plan:

- Week 1: Define the scope of the project and finalise what we were looking at.
- Week 2: Draft the survey questions.
- Week 3: Finalise and release the survey through the Reach for Excellence widening participation programme at the University of Leeds.
- Week 4: Collect responses, analyse, and write the report.
- Week 5: Continue with data analysis and draw conclusions.
- Week 6: Final editing of the report and design of a research poster.

Before we set out this plan, my supervisor and I also discussed what I wanted to get out of the project personally. I explained that I wanted to learn how to conduct research independently, understand research ethics in practice, and design a robust and ethical survey. Another personal goal was to learn how to produce an engaging research poster, as this was a skill I had never developed before.

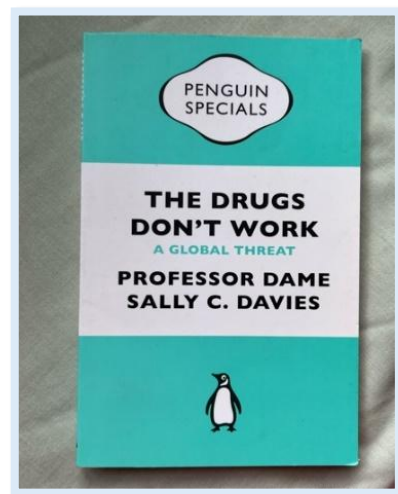
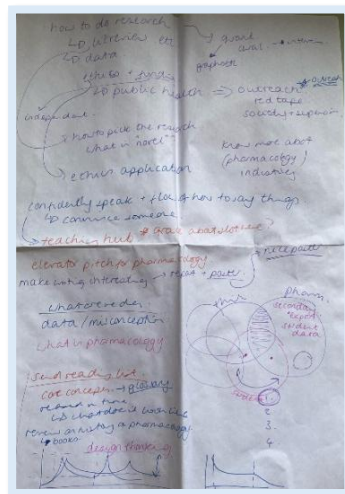
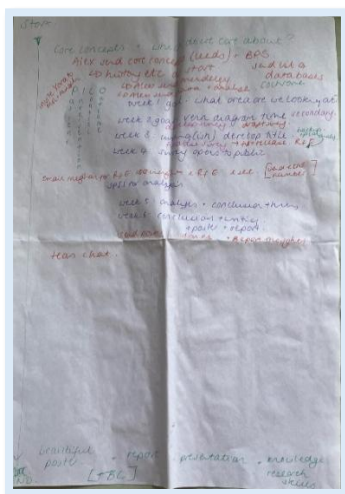


Figure 1 and 2: plans created with my supervisor. Figure 3: "The Drugs Don't Work" A book I borrowed from my supervisor to get me engaged with the topic.

Survey design and development

The background knowledge I gained and the above article shaped the design of my survey, which I divided into three sections: background, beliefs, and knowledge. My supervisor invited me to an event for Reach for Excellence students. I used this opportunity to speak to students directly, asking informal questions about what they already knew about pharmacology and antibiotics. These conversations were very insightful as they highlighted misconceptions and gaps in knowledge, which then shaped the design of my survey. For example, I noticed confusion about the difference between antibiotics and painkillers, which I ensured was tested in my questionnaire. I was able to draw on my relationship with the reach for Excellence team to distribute my survey, directly to 16–18 year old students. This was particularly valuable, as it meant I could reach my target group more effectively than if I had relied only on my own contacts. I used my dental Instagram account and a dental student group chat to share the survey. This allowed me to reach dental students directly and ensure that this group was represented alongside the sixth formers and members of the general public. Posting the survey on these platforms not only improved recruitment but also encouraged discussion among peers, which added richness to the project.

My initial research plan aimed to focus specifically on individuals aged 16 to 18, as this group is at a transitional stage where they begin to make more independent health related decisions while still being influenced by parents, peers, and digital media. However, due to practical challenges in recruitment and participation, the survey generated responses from three distinct groups: 16 to 18-year-olds (n=9), dental students (n=9), and other adults (n=8). While this was not the original design, it presented an unexpected opportunity to compare antibiotic knowledge across varying levels of education and life experience.

Importance and Impact of the Research

Antibiotic resistance is not just an abstract scientific issue it is a real and growing threat. Dentists, in particular, play a critical role in antimicrobial stewardship. Overprescription in dentistry contributes significantly to community antibiotic use. By exploring public understanding, even in a small sample, my project highlights areas where education could be targeted. The research also reinforces the importance of addressing misconceptions early. If young people grow up believing antibiotics cure viral infections, this may shape their future expectations when seeking care. Although my sample was limited, the broader implication is clear: awareness campaigns must be tailored to different groups. What works for teenagers may not work for university students or older adults.

More broadly, this project highlights the importance of making pharmacology more accessible to the public. Through tailoring educational strategies as different groups require different approaches. Teenagers may benefit from interactive digital campaigns, while students in healthcare need case based learning. This could help improve general awareness of pharmacology, empowering individuals to make informed decisions about their health and supporting the fight against antibiotic resistance.

Personal Impact of the Research

So far in my dental studies we have touched upon pharmacology, but I often felt there were gaps that prevented me from fully understanding the subject. Through this project, I explored pharmacology from the perspective of a pharmacologist, looking at the underlying processes and mechanisms rather than only the dental applications. This wider and deeper approach allowed me to piece concepts together more coherently, moving beyond simply asking ‘what do I need to know as a dental student?’ and instead developing a stronger, more connected understanding of pharmacology as a whole. Going forward, I want to continue approaching my degree with this mindset. Instead of just memorising information, I will actively seek to connect it to wider scientific principles. This will not only deepen my understanding but also make me more confident in applying knowledge in practice. It has also shown me the value of independent reading and research alongside lectures, and I plan to use these strategies more regularly throughout the rest of my studies.

In addition, I gained significant personal confidence during this summer, whether through public speaking at the biomedical science meeting or by meeting new people and building connections. These experiences pushed me outside of my comfort zone and helped me develop both professionally and personally. I am truly grateful for the skills I have gained and the people I met along the way



Figure 4 and 5: talking Ellen out and showing her Otley.

Leadership Skills Gained

Throughout this project, I developed several important leadership skills. One of the most important was learning to take initiative and make independent decisions about the direction of my research. For example during an informal mini-meeting with members of the biological sciences staff and another Laidlaw project group, I was unexpectedly asked to present my research so far. I was asked to present my research so far and answer any questions the audience had. With little time to prepare, I had to rely on improvisation and quick thinking. I structured my talk as clearly as possible to help the audience follow my points, but towards the end my presentation became less focused as I tried to fill the time. This was a key learning moment: I realised that an effective presentation does not need to be long, but rather concise and well-structured, ending once the key points have been delivered. Another situation was when I realised that the number of responses from 16–18-year-olds was too limited to analyse meaningfully, I took the decision to broaden my participant pool to include dental students and members of the general public. This flexibility required me to think critically about how best to adapt my approach while still addressing my research aims. I also gained confidence in project organisation, from designing the survey structure to managing the collection and analysis of data. Communicating my project clearly to participants, and ensuring that my survey was accessible and ethical, further developed my ability to lead with responsibility. These experiences have made me more confident in guiding a project through challenges,

managing my time effectively, and making informed decisions all of which are essential leadership qualities that I can take forward into my future career.

In addition, I documented parts of my research journey on Instagram, sharing insights into the process and reflecting on my experiences. This was a useful way of engaging with others in an accessible, informal format. It also helped me practice communicating research ideas to a wider audience, rather than only in academic settings. I want continue to use this platform to spread knowledge on such topics.



Figure 6: meeting with biological science team. Figure 7: Instagram account.

Looking ahead, I would like to expand this research with a larger and more representative sample. It would be particularly valuable to compare groups systematically (for example, sixth form students across different schools, first-year dental students, and members of the general public). This would allow more robust conclusions about differences in antibiotic awareness. For my own career, this project has reinforced my interest in patient education and public health within dentistry. I hope to integrate these themes into my future training, whether through outreach programmes, further research, or educational initiatives. Finally, I would like thank my supervisor Dr Alex Holmes, who has been noting but supportive throughout this project. I feel incredibly grateful to have meet and learnt from her.