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April 2025

Community Engagement and Chemistry

The Impact of Black Hair Products

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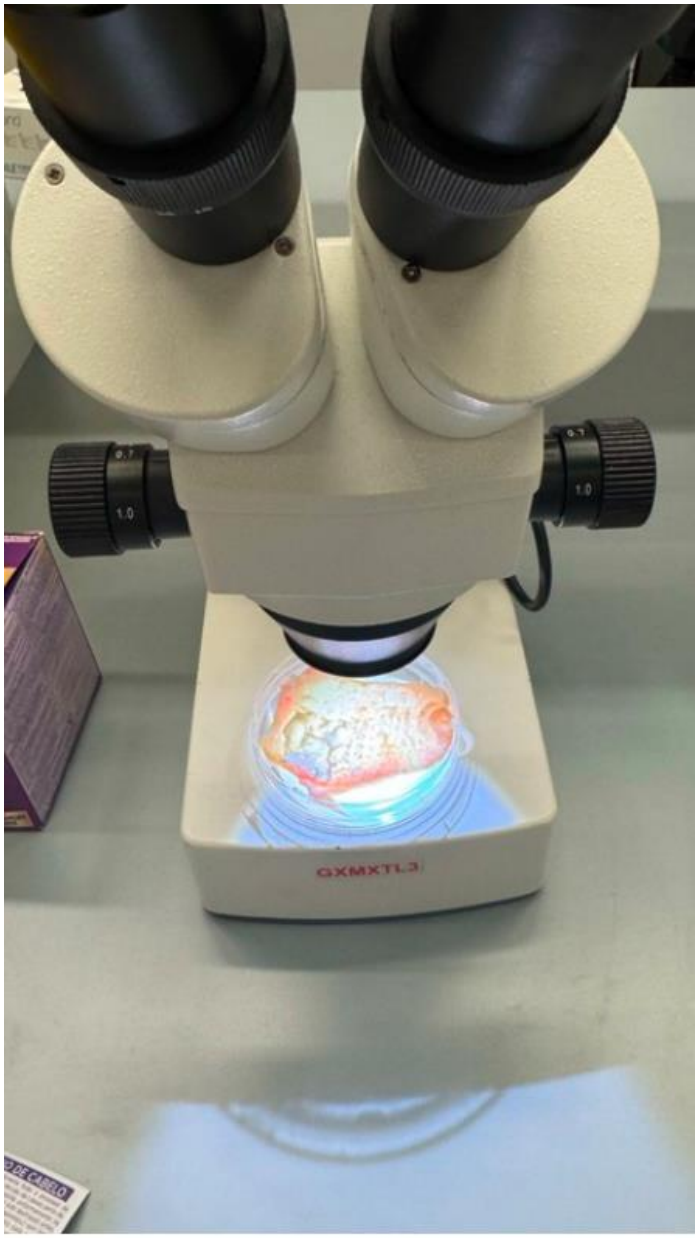

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Introduction

Context

The British Science Association (BSA) and Reading University co-created a pilot project, which was comprised of multiple community-led research projects. The pilot project aimed to try a new approach to community-led research, whereby the communities were placed at the centre of the project. The objectives of the pilot were to;

i. make research and science more accessible
ii. highlight the value that local knowledge and experience can bring to research

The projects were aimed at communities within the Reading and Slough area and were geared towards communities that are typically under-represented in research.

It has been recognised that people from the black heritage community are underrepresented in research [1-4]. Fortunately Reading has a well-established and thriving black community, with members willing to participate in the pilot project. One organisation from this community, called TRIYBE, developed a project looking at the impact of Black hair products and styling techniques.

There was a need for this project as it is well known that there is a lack of data on black hair practices within Europe, including the UK [5]. Of the available data, adverse effects of Black hair products and straightening techniques on the Black community's health is evidenced. For instance, the products typically used by the Black community to style and straighten their hair have been found to contribute to an increased risk of some cancers and reproductive issues [6-8]. Recently in 2025, an analysis of 4,011 products marketed at members of the Black community found that approximately 90% of the hair styling aid products were classified as a moderate or high hazard product[9].

Project aims

The goal of this project is to understand and raise awareness of the mental, emotional, spiritual, and physical impacts that Black hair products have on the Reading community. The project consists of three main activities: a survey, a lab workshop, and focus groups. This report will only cover the lab workshop component of the project.

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Community Engagement Activities

Overview

The workshop was comprised of a presentation outlining the chemistry of Black hair, a discussion led by TRIYBE about the social impact of Black hair products, and two experiments. The first experiment was aimed at examining the impact of relaxer, a product used to chemically straighten hair. In this experiment, a commercially available relaxer was placed on chicken skin and examined under the microscope. The participants used the microscope to compare the chicken skin before and after the application of the relaxer to assess its impact. The second experiment consists of comparing commercially available hair before and after straightening to assist the effect of heat damage.

Experiment details

These experiments can be replicated by different organisations using the information provided in the table below.

Experiment	Hair product testing	Heat Damage
Equipment list	Commercial hair relaxers containing calcium hydroxide and guanidine carbonate Chicken skin Spatulas Stereomicroscope Beaker Timer/clock Petri dish	Straighteners or blow dryers Stereomicroscope Samples of hair Petri dish
Procedure	1. Cut chicken skin into squares (approximately 6 cm by cm) 2. Place the Petri dish on the microscope stage and adjust the microscope accordingly to view the skin sample (discuss or write down any observations) 3. Prepare the relaxer according to the instructions on the box in a glass beaker 4. Place the relaxer on half of the chicken skin using a spatula 5. Leave the relax on the chicken skin for approximately 40 minutes 6. After the 40 minutes scrape off the relaxer using a spatula. 7. Place the peachy disc containing the chicken skin under the microscope and re-examine (discuss or write down observed changes to the skin)	1. Place the hair sample in the Petri dish 2. turn on the microscope and place the Petri dish underneath 3. adjust the microscope accordingly to view the hair sample (discuss or write down observations) 4. straighten the hair sample 5. place the sample back in the Petri dish and re-examine (discuss or write down observed changes to the hair)
Health and safety considerations	Transmission of bacteria from chicken skin Skin irritation or eye damage from the chemical in the relaxer	Burns from straighteners

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Stakeholders

This project had multiple stakeholders, the funding came from UK Research and Innovation (UKIR), a non-departmental body of the UK Government. UKIR had little input in the project development and implementation. The project was created by the BSA and Reading University, who set the overall objectives of the pilot and supported the community leaders and researchers. The BSA team included Kareem Dayes and Kate Orchard, and the project leads from Reading University were Dr Alice Mpofu-Coles and Professor Sally Lloyd-Evans. The research direction was driven by the Community Leaders from TRIYBE. The TRIYBE team was comprised of Claudette Maharaj, Tyler Hinkson, and Sharon Titus. Their vision was supported by the academic researchers; Dr Tamanda Walker, a social scientist and Symiah Barnett a Chemist.

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Key Findings and Outcomes

The participants in the workshop were predominantly Black women.

There were about 20 participants over the course of the four workshops.

The participants enjoyed carrying out experiments and shared they were keen to do more things like this.

Fruitful discussions were had about the marketing and societal pressures that cause the community to use these products.

Many participants shared the adverse experiences they had with hair products marketed towards the Black community, such as chemical burns and skin irritation.

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Evaluation and Lessons Learned

Bureaucracy inhibits community research

The policies, processes, and access to resources in longstanding institutes are not conducive to community research. Greater flexibility is required to support the progress of community research.

Better access to information is needed

As mentioned in the introduction there is limited research on black hair practices, which made it difficult to obtain research and data to produce the PowerPoint presentation for the workshop. In addition, a lot of the research and data are not Open Access. Consequently, this information is not freely accessible to the wider community. So, although the participants at the workshop shared a keen interest in learning the science, their ability to access the research and data is not possible due to the lack of Open Access. This puts the research institutes as the gatekeeper and distributor of the information, further enshrining the long-standing power balance between these institutes and members of the community.

A lack of black researchers adversely impacted the project

This project started a couple of months behind the rest of the projects in the consortium, due to the search for Black researchers. This had profound impacts on the pressure and pace that the team had to work at to meet the deliverables. This exemplifies how systematic racism can practically impact research, thus highlighting the importance of having black researchers.

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Conclusion and Next Steps

This pilot project serves as evidence that the Black community are keen to explore and address the impacts of Black hair products and techniques. The discussion during the workshop highlighted the adverse impact the products and techniques have on them physically and psychologically. Thus, more work is required to address the harm these products and techniques cause, particularly in the UK. Therefore, we encourage UKIR and other universities to invest in this research area.

Although research in this area is important, it is crucial to make sure that this process is done in a non-extractive and non-exploitive manner. To ensure that the process is neither extractive nor exploitive we recommend the following:

- Consultation should be held with the members of the Black community to ascertain the key concerns to ensure appropriate and relevant research questions.
- The members of the Black community consulting on the research should be fairly compensated for their time and knowledge.
- The community should define the deliverables and outcomes.

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Appreciation

We would like to extend our gratitude to all the stakeholders who were involved in the project. Particularly to the members of the Black heritage community in Reading, for their participation and engagement. But also, we would like to extend this appreciation to Reading University and the British Science Association for supporting this project; and lastly, to UKIR for funding it.