

# Public Health Institute Journal

“Celebrating academic work  
by PHI students”

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# Welcome

**Welcome to the fifth issue of the PHI journal. Our guest editorial comes from Simone McKenna who completed the BSc Public Health Programme last year and is currently studying on our MSc Public Health Programme. Simone won the prize for best undergraduate public health dissertation.**

When I first heard I needed to do a dissertation in my final year of my BSc Public Health, it seemed pretty daunting and challenging, being a lot bigger than your usual assignment. However, I was also very excited, knowing that I had a passion for writing, as well as getting the chance to do a research project on a topic of my own choice, and pursuing my very own path. I had so many topics in mind, it was hard to choose from one. I had already started thinking about potential topics as early as first year. I realise that is what is so interesting about public health, it is such a broad area with so many fascinating topics to research, with great scope for such intriguing, solid and well-informed research.

When it came to actually doing my dissertation, I decided on a topic I was really passionate about; The impacts of Instagram on Body Image on adolescent girls and young women. This ended up being a rewarding experience for me; getting to do a research project on a topic I am genuinely invested in as part of a university degree in a renowned research institute. This meant I was particularly motivated, with the impacts of instagram on health and wellbeing having particularly resonated with me as a young woman who has used social media herself. Independent learning/working is another skill of mine, and so I was thrilled at getting the chance to apply and develop this skill. I have been lucky enough to have supervisors who have been really helpful and supportive throughout my dissertation, making the whole thing a lot easier and less daunting for me, with regular and much-needed encouragement.

Currently I am doing my MSc Public Health, further preparing for a career in research. I am working on another dissertation, this time looking at the topic of Adverse Childhood Experiences, another special interest of mine. Helping create better support for children and young people with Adverse Childhood Experiences is really important to me. This is something I have solid insight on, as well as a genuine concern for children and young people with Adverse Childhood Experiences and the various barriers they face, wanting to help make a difference and reduce those barriers. Choosing a topic that you are well-informed on and genuinely care about is key to conducting a good dissertation. Conducting your own research project is truly an amazing feeling and experience, as you are creating your very own piece of work to contribute significantly towards society. You can expand on many issues that are only viewed from a snapshot lens, or even overlooked, providing deeper perspectives. I am therefore pleased to see the continuing contributions of research that students have to offer, as they will all be sure to enhance public health knowledge and practice.

*Simone McKenna*

# Sadie Batkin

## Does the adoption of Marmot principles reduce health inequalities? Coventry: An emerging Marmot city

### Abstract

The life expectancy in the UK is stalling for the first time in over 100 years, with many cities affected. Coventry is a city that has significant deprivation, is ranked as the 64th most deprived neighbourhood and is classified as an emerging Marmot City (focus on adopting Marmot principles). Marmot principles were defined by Sir Michael Marmot in 2010 as strategic aims that would reduce health inequalities. This report evaluates the adoption of three Marmot principles used by Coventry City Council to reduce health inequalities. Data was derived from several different credible sources with criteria, key words and limitation analysis, to ensure validity and relevance of review. Firstly, adopting the Marmot principle: *'Giving every child the best start in life'*, has reduced health inequalities by increasing school readiness, decreasing the prevalence of obesity and improving childcare settings. Secondly, adopting the Marmot principle: *'Creating fair employment for all'*, has reduced health inequalities by increasing local and small businesses, reducing the number of benefit claimants and improving mental health support in the workplace. Lastly, adoption of the Marmot principle: *'Strengthening the role of ill-health prevention'*, has reduced health inequalities by promoting vaccine uptake, improvements to air quality and the development of the prevention board. This literature review provides strong evidence that adoption of Marmot principles can help reduce health inequalities. However, many of the studies require a longer surveillance period. In the future, we can hope to see more reliable and comprehensive data.

### Keywords:

Marmot principles, Marmot city, health inequalities, Coventry, school readiness, decreasing obesity, improving childcare settings, increasing small businesses, reducing benefit claims, mental health workplace support, promoting vaccine uptake, improving air quality, prevention boards



# Nicola Carrington

A small-scale qualitative study to gain Environmental Health Practitioners' opinions on the effectiveness of displaying Food Hygiene Ratings

## **Abstract**

The Food Standards Agency (FSA) runs The Food Hygiene Rating Scheme (FHRS) in partnership with local authorities in England, Wales, and Northern Ireland. Businesses in Wales and Northern Ireland are legally required to display their ratings in a prominent place, like the front door, entrance, or window of the business. However, displaying ratings is voluntary in England. This study aimed to discover the effect that displaying Food Hygiene Ratings (FHRs) has on a business's hygiene and food safety. This involved interviewing Environmental Health Practitioners (EHPs) to gain their opinions on the effectiveness of displaying Food Hygiene Ratings. Six EHPs were interviewed, 2 from England, 2 from Northern Ireland and 2 from Wales. A review of the literature offered insight into the FHRS and what it does. The literature review discusses aspects that could contribute to how effective the FHRS is- such as consumer awareness and Local Authority (LA) attitudes to mandatory display. There was no literature to support or negate a direct link between the displaying of ratings and food safety. Therefore, this study aimed to fill this gap in the literature. Analysis of transcribed interviews identified 4 themes. Findings from this study show that EHPs found the FHRS to be effective. EHPs identified ways to make the scheme more effective-such as mandatory displaying of ratings in online food ordering platforms. A recommendation from this study suggests a partnership between the FSA and online food ordering platforms.

## **Keywords:**

Food safety, food-borne illness, Food Standards Agency, Food Hygiene Rating Scheme, Food Hygiene Rating, Environmental Health Practitioner, Local Authorities, qualitative, online platforms, mandatory display



# Ann-Marie Corr

A survey to investigate student's knowledge and behaviour towards vaping and the associated health risks

## Abstract

E-cigarette vaping rates among university and college students has been increasing significantly over the past decade. In order to help develop the most effective policies and health promotion interventions, it is necessary to acknowledge current knowledge and behaviour of e-cigarette users, understand levels of vaping and perceived risks, to potentially inform policy implementation. At present, there is a lack of research studies assessing the levels, knowledge, and behaviour of university student e-cigarette users in the United Kingdom (UK). Therefore, this study aims to understand levels of vaping, knowledge, and behaviour, as well as the perceived health risks among the UK university student population. This quantitative study utilized an online questionnaire, which was disseminated on various social media platforms (Instagram, Facebook, Snapchat, Twitter). The principal researcher used a self-selecting sampling method, which gained 70 responses. Data was analyzed using SPSS to test for significance, and question responses were compared with respondent demographics to determine differing vaping behaviours between gender and age groups. The results revealed that students consider vaping to be prominent among student life and culture and use e-cigarettes frequently, in a variety of social settings. A large proportion of participants have used e-cigarettes at least once or twice in their lifetime, with many users vaping on a regular basis. Additionally, the study concluded that a higher proportion of females vape more regularly, in comparison to men. The study concluded that most participants used disposable products, specifically 'Elf' and 'Elux' bars. Additionally, motivations regarding vaping behaviour revealed UK university students vape because they use it as a smoking cessation aid, for the nicotine content and because they like the taste. Less than half of the participants felt addicted to vaping, with most perceiving e-cigarettes as just as harmful as tobacco smoking.

## Keywords:

E-cigarettes, students, young adults, vaping, policies, perceived risks, prevalence, knowledge, behaviour, UK government, smoking cessation



# Katherine Davis

Identifying parental reasons for MMR1 vaccine hesitancy or acceptance: A quantitative, cross-sectional survey in Liverpool using the 5As model of vaccine acceptance



## Abstract

Measles is a globally prevalent, vaccine preventable disease which is highly contagious and potentially deadly. Those most at risk are young children and unimmunized people (ECDC, 2022). Worldwide, measles cases declined by 83% during 2000-2017 (WHO, 2018), but measles vaccine coverage is inconsistent and below the World Health Organisation's recommended 95% at population level, for public protection and disease eradication (WHO, 2021). In the UK, the free Measles Mumps and Rubella (MMR) vaccine is routinely offered in childhood (NHS, 2019) but national MMR vaccine coverage is below 95%. Some local authorities such as Liverpool, have experienced a larger decline in MMR uptake compared to others (2013, 94.7%, 2022, 82.1%) (NHS Digital, 2022). Vaccine hesitancy is considered the main reason for declining MMR1 uptake (WHO, 2020) and is largely driven by lack of confidence in the vaccine and a retracted link between the MMR vaccine and autism in the 1990's (Tannous, Barlow and Metcalfe, 2014). UK MMR campaigns intending to increase vaccine uptake focus on raising public confidence, but this is one hesitancy factor which is not sympathetic to local nuances. Identifying the reasons for MMR vaccine hesitancy in local populations and tailoring MMR vaccine programme delivery according to need, is the most effective way to increase vaccine uptake and close vaccine gaps (PHE, 2021). This study explores Liverpool parents' reasons for MMR1 vaccine acceptance, refusal or delay using the 5A model of non-sociodemographic factors relating to vaccine uptake. Using the same 5A model, it explored the lesser researched impact of parent's income and education on their MMR vaccine acceptance. The study population was sampled using non-probability and convenience methods and empirical data was collected by anonymous online questionnaire. Problems with recruitment resulted in a low study sample (N=28) and findings have potential to be impacted by over and under representation and non-response bias. The low quantity of study data prevented any significant statistical analysis of study findings, and the robustness and validity of results is therefore uncertain. No data was received from participants who refused the MMR vaccine, which limited full exploration of the study question. Findings largely concurred with previous studies and perceived confidence in the vaccines safety and effectiveness was a predictor of overall vaccine acceptance in Liverpool. Although not statistically confirmed, findings suggest university education, and not higher income is a predictor of timely MMR1 vaccine receipt. Generally, statement responses observed a relationship between participants of university education and participants of higher income. The influence of peers and the functionality of prompts did not follow this trend and a more complex socioeconomic relationship may exist in Liverpool. The 5A statement set was effective at exploring the topic but this study will need to be replicated in similar cities with a larger study sample for the findings of this study to have relevance to Liverpool. The researcher recommends future MMR vaccine hesitancy research should investigate the importance of university education on parent's reasons for accepting MMR1 as there is a potential link between formal education and peer influence.

## Keywords:

MMR, measles, parents, Liverpool, vaccine hesitancy, determinants, 5A taxonomy



# Chloe Dove

A quantitative study on the attitudes, knowledge and behaviour of university students regarding food waste

## Abstract

The United Kingdom (UK) produces 6.6 million tonnes of household food waste annually; 70% of this was previously edible food (WRAP, 2021). This is nearly £14 billion of wasted food every year and equates to about £60 per month for an average household, or the equivalent of eight meals a week. A study by Zero Waste Scotland (Acheson, 2019) showed that most students at university waste approximately £5.25 worth of food a week, or £273 annually. The aim of this study was to assess university students' attitudes, knowledge and behaviour towards food waste. An anonymous online questionnaire was distributed, using convenience sampling, to university students in the UK via Canvas and university student forums. Students were asked questions to show their knowledge around use-by and best-before dates, purchasing behaviors and preparation habits. Participants were also asked about attitudes towards food waste and why they can or cannot prevent food waste in the home. Questions were also asked about how these students disposed of food waste. There were 138 responses. The results of the questionnaire showed that students generally understood the difference between use-by and best-before dates, but a small percentage did not. This increases the likelihood of food poisoning if food is consumed past its use-by date and would contribute to food waste if disposed of past its best-before date, whilst still being safe to eat. The results of this study also showed that many students do not write a shopping list or check food stocks before going shopping, which can contribute to impulse purchases and over-buying food, which is ultimately wasted. Many students also struggled to buy economically for small households and ended up preparing too much food, which could either be wasted or contribute to other public health issues such as obesity. The results also showed that university students struggled to dispose of food in an environmentally friendly way as many university accommodations do not provide food waste bins. These results are displayed in graphs and are further discussed with comparisons and differences from the literature. The recommendations that have arisen from this study include enforcing legislation to ensure that food waste is disposed of in an environmentally friendly way and ensuring there are methods of food waste disposal in university accommodations that do not send the waste to landfill. Recommendations were also made for educational campaigns to increase awareness of food safety and the importance of proper food preparation to ensure food is not wasted unnecessarily. The researcher also felt a qualitative approach to this study would gather more in-depth opinions from participants.

## Keywords:

Food waste, food safety, purchasing habits, preparation habits, waste disposal methods





# Tanya Edwards

An investigation into the knowledge, attitudes and practices towards food safety in the home amongst new parents in the North West of England

## Abstract

This research offers an insight as to whether having children and becoming a new parent plays a part in the importance of how food safety is managed within the home. Studies have shown that many consumers have a high level of confidence in their personal food safety knowledge and practices in general, however, there is a significant discord between consumers reported knowledge of food safety and their observed practices. Those with more relaxed attitudes towards food safety were less likely to report behaviour in line with recommended practice. Food poisoning within the home is under acknowledged and under reported, so the true scale of outbreaks within the home is something of a mystery. Although there are laws in place to manage and maintain food safety standards and there are Environmental Health Practitioners on hand to enforce these laws, they only apply to commercial food handlers and food businesses and do not apply to food safety standards within the home. The aim of this research was to investigate the knowledge, attitudes and practices amongst new parents of children aged 5 years and under using a survey of parents residing within the North West of England. A total of 106 parents of children aged 5 and under completed a questionnaire around food safety knowledge, attitude and practice. Data was analysed to understand whether new parents perceived food safety within the home to be an important factor in protecting their children from food borne illness. The 106 participants were asked to answer true, false or don't know to the question: 'Food poisoning is more likely to affect children than adults.' Of the 106 participants who responded, 42.5% answered true, 33% answered false and 24.5% answered don't know. Despite less than half of the participants answering 'true', nearly 70% of participants claimed that since they became a parent, they were more aware of food safety (28% disagreed and 3% responded unsure). The results from the survey also found that 72% of participants strongly disagreed or disagreed that it was inevitable that at some point a child/children would get food poisoning, whilst 16% of participants strongly agreed or agreed and 11% were unsure. Recommendations to improve the understanding and importance of food safety within the home could include more eye catching and straight to the point advertising on the packaging of food products. Government agencies such as the Food Standards Agency (FSA) should advertise that they offer free, home food safety guidance, which is easily accessible on their website and the FSA could also consider offering some education or courses that focus on changing main food preparation behaviour. Health professionals or care providers could also offer consumers more information around food poisoning and the importance food safety has in keeping people from becoming ill. Finally, the most important and potentially most difficult change that needs to be implemented is that of the parents' attitudes towards food safety. Parents need to take onus for their own personal food safety practices within the home and realise the risk food-borne illnesses pose to their children.

## Keywords:

Food safety, food safety knowledge, food safety practices, food poisoning, food safety in the home, food-borne illness





# Claire Faland

An empirical study to assess the knowledge, attitudes and practice of staff in a large United Kingdom hospitality business

## Abstract

Using questionnaires, this study assessed the knowledge, attitudes and practices of staff in a United Kingdom (UK) hospitality business. The aim of the research was to determine if a correlation existed between knowledge, attitudes and practices and NSF audit rating. Results were analysed using two methods. Firstly, Microsoft forms and its function of providing bar charts and pie charts. Data was exported to Excel then into SPSS. A Chi-squared test was run on multiple variables to determine correlation/association. On all Chi-squared test results the assumptions were violated, meaning that for 20%, the expected count was less than 5. The likelihood assumption was adopted instead of the Pearson method. Results from Microsoft forms data analysis showed that participants who had an extremely positive attitude towards being audited generally, also had good knowledge. Twenty percent of participants answered 'extremely positive' for the question: 'How would your team describe being audited?'. All 20% answered the question: 'When cooking foods, what temperature should the centre of the food be to ensure bacteria has been killed?', correctly. Fifty seven percent of participants selected 'Always' for the question: 'In your opinion how often are food safety and health and safety procedures followed by your team'. Seventy three percent answered with the most positive option of 'extremely important' for the question: 'How important do you think food safety and health safety is to the company?'. It is worth noting that an observational method of data collection could potentially provide stronger data to analyse.

## Keywords:

Hospitality business, NSF audit rating, food safety, health and safety procedures



# Eoin Geehan

An interview study exploring the impact of social media on Liverpool university students' feelings and attitudes towards body image

## Abstract

Posting one's body on social media has become a ubiquitous activity, and previous research suggests the abundance of ideal bodies on social media can lower self-esteem and body satisfaction levels, as well as increase body comparison among those viewing them. Despite the high levels of body dissatisfaction in the United Kingdom (UK), there are very few interventions to help combat this problem. The aim of this qualitative study was to investigate the impact of social media on Liverpool university students' thoughts and feelings towards body image. Semi-structured interviews with eight students at university in Liverpool were conducted and analyzed thematically. Key findings from the study were how and why people compared their bodies to others, what the ideal body looked like for participants, which platform this occurs on mostly and the impact comparisons to ideal bodies on social media has on the participants' mental health. Both male and female participants felt exposed to ideal bodies online, particularly on Instagram. This was supported through the scroll-back method which evidenced images of 'attractive' male and female bodies that participants are exposed to daily. Ideal body types varied with gender and sexuality. Participants felt their exposure to the ideal body caused high levels of social comparison and pressure to self-enhance their own bodies using editing applications, or sometimes even physically, by dieting and exercising. Comparing their bodies caused them to feel distressed, and experience poor mental health. Some students made attempts to reduce their exposure by lowering their social media use and thus had a more positive mental outlook. These results allowed the researcher to come up with recommendations to tackle this public health issue, including educational interventions in schools and universities to help young people foster a positive body image early on in life, improvements with social media algorithms, and building on the current research surrounding gay male's body standards online and fear of missing out (FOMO) in the context of body image.

## Keywords:

Body image, body satisfaction, body comparison, body surveillance, body standards, social comparison, self-enhancement, self-improvement, self-esteem, behaviour, idealised, thin, skinny, muscular, mental health, social media, algorithm, Instagram, LGBTQ+, photo-editing, public health, government, qualitative, Stunkard, scroll-back, exposure, fear of missing out (FOMO)



# Drew Gibson

## A quantitative analysis of the air quality of Birkenhead Park

### Abstract

The primary aim of the study was to explore the levels of Particulate Matter 2.5 within the area of Birkenhead Park and the impacts to health. To enact this, a methodology was developed to carry out an air survey of the park. This involved surveying three separate routes: external, outer and internal, with a Dylos air monitor and the Strava mobile app simultaneously, in order to create an annotated map to determine levels of PM 2.5 within the park. The results of the air survey presented unexpected findings, which revealed that the Internal route of the park had the highest mean concentration of PM 2.5 at  $6.92\mu\text{m}^3$ . The external and outer routes measured at  $6.27\mu\text{m}^3$  and  $6.37\mu\text{m}^3$  respectively. PM 2.5 concentrations measured in this study did not differentiate greatly from previous measurements of the area, from a nearby AURN monitor. The study methods were shown to be a novel concept in comparison to other studies investigating air quality, which often collect data from a singular point over a long period. The intricate aspect of the air survey routes in this study allows results to clearly highlight any areas of lower air quality within the air survey area, which would allow more informed actions to remedy areas of concern. Recommendations based upon this study revolve around enhancing the mitigation of PM 2.5. Examples of such recommendations include: improving the durability of road surfaces around urban green spaces to lessen the amount of particle resuspension, introducing a border of coniferous trees to provide a natural barrier from PM 2.5 and improving the durability of certain vehicle parts such as brakes and tyres which can produce PM 2.5 through typical use.

### Keywords:

Particulate matter 2.5, air quality, air pollution, urban green space, air quality survey



# Grace Gribbin

A survey study investigating the knowledge, attitudes and practices of students attending universities in the United Kingdom with regards to food labelling on prepacked food

## Abstract

Many individuals fail to read, understand or comply with the information presented on food labels, such as 'best-before' and 'use-by' dates, allergen information and nutritional information. Various studies have found links between failing to check and understand the items on food labels, and unhealthy dieting, allergenic reactions, food-borne illness, and excess food waste. These impacts have negative implications for public and environmental health, and often lead to economic loss. Although many previous studies have investigated the knowledge, attitudes and practices of students regarding food labelling, there was a gap in literature for up-to-date research involving United Kingdom (UK) university students and food labelling. Therefore, the aim of this research was to investigate the knowledge, attitudes and practices of university students studying in the UK, regarding food labelling on prepackaged food. This study hoped to gain an insight and answer questions on students' levels of knowledge and beliefs, as well as purchasing and consumption practices when it comes to prepackaged food labels. This quantitative study collected data through an online questionnaire which was posted on various social media platforms such as Instagram, Snapchat and Facebook. A convenience sampling method was used, collecting responses from 66 students, with findings including demographic information, and the knowledge, attitudes and practices that they had surrounding food labelling. Microsoft Excel was used to present the findings in graphs and tables. Results showed that 98.5% of students agreed to the importance of checking best before and use-by dates, and displayed a satisfactory level of knowledge on the meanings behind them. However, many students did not comply with the corresponding disposal practices, as 34.8% of students reported only disposing of a product with a 'use-by' date if the quality seemed poor. Almost half of students did not read the nutritional information on food labels. Older age groups of students, and those who lived at home with family, displayed the most food labelling knowledge. Students who were not responsible for purchasing food that they ate displayed less knowledge than students who had at least some food purchasing responsibility. Unfortunately, the questionnaires lacked responses from certain groups of individuals, for example, some levels of university study (Masters and PhD), older age groups and purchasing responsibility levels. Therefore, the researcher recommends that further research targeting these groups of students should be carried out to gain a better insight and to represent all UK university students. Further recommendations by the researcher to improve public and environmental health involve new clubs/campaigns introduced by the university, which encourage and explain the importance of correct food labelling practices; universities producing digital guides with food safety tips; the NHS producing posters to be displayed in university buildings, detailing the negative consequences of a poor nutritional diet; and the incorporation of education surrounding expiry dates into the school curriculum.

## Keywords:

Food labelling, prepackaged food, university students, knowledge, attitudes, practices, use-by, best before, allergens, nutritional information



# Jack Hooper

A survey study investigating Liverpool John Moores University students' attitudes and perceptions towards cannabis use and the legislation surrounding it in the United Kingdom

## Abstract

Cannabis legislation is a highly debated topic in the United Kingdom (UK), with much of the public having varying views. Cannabis use among students is also something that has varied over the years, and the prevalence of cannabis use disorder (CUD) needs to be identified. There are a variety of studies in the UK that mainly show the prevalence of cannabis use among students. Further studies in Canada and the United States have also been conducted around the same area. The aim of this research was to investigate Liverpool John Moores University (LJMU) students' attitudes and perceptions towards cannabis use and the legislation surrounding it in the UK. The study also looked to investigate how widely cannabis was used among students and determine the prevalence of CUD by using the Cannabis Use Disorder Identification Test screening tool. The study used a quantitative approach with an online anonymous questionnaire for data collection. The study had 24 respondents who were all from the Public Health Institute at LJMU, either at an undergraduate or postgraduate level of study. From the results, it was found that almost a third (29%) of the sample had used cannabis in the last 6 months, and for 43% of those there were indications of possible CUD. Of those who had used cannabis in the last 6 months, 42% were in favor of the drug being decriminalized, and 42% of those who hadn't used cannabis in the last 6 months said the same. However, 63% of the study were of the opinion that current UK drug policies have been mostly unsuccessful in reducing the harms done by drug abuse. The use of cannabis among LJMU students is evident, which shows that the use of cannabis across the UK student population must be similar. There are concerns around whether current drug policies are effective in reducing the harms done by drug abuse, which suggests that more needs to be done by the government to reduce these harms. The study found that CUD is prevalent among cannabis users at LJMU, which shows that it is likely to be an issue amongst the general student population, highlighting further need to educate students about cannabis use, in the hope to decrease the levels of CUD.

## Keywords:

Cannabis, cannabis use disorder, Cannabis Use Disorder Identification Test, drug use, attitudes, perceptions, legislation



### **Abstract**

Worldwide obesity levels have been progressively increasing over the past few decades leading the World Health Organisation (WHO) to formally recognize obesity as a major public health problem in 1997. It is argued that one of the main driving forces behind the obesity crisis is poor diet. There are an increasing number of consumers eating at restaurants or ordering food delivery which are high in calories, fat and sugar which can lead to health concerns and a greater risk of obesity. To try and tackle rising obesity levels, there has been an increasing interest in policy interventions worldwide, including calorie labelling. Consumers have expressed an interest in wanting a greater access to nutritional information and that they would use this information to help inform healthier food choices. In the United Kingdom (UK), the government introduced legislation to implement mandatory calorie labelling for large food businesses in April 2022. However, previous research has found mixed effects of calorie labelling on consumer behaviour. Furthermore, public opinion on this legislation is unclear. This study was conducted to improve our understanding of public opinion on mandatory calorie labelling using an online questionnaire. Responses from a total of 69 adults who live in the UK was collected. Our results found that most respondents were concerned about their health and weight but did not actively track their calorie consumption. Furthermore, there were mixed opinions on whether they thought calorie labelling would have a positive effect, with many respondents concerned about the detrimental effect it could have on people with current or past eating disorders. Generally, participants would like access to other nutritional information, rather than just calories, when eating out, but would prefer this as an option-to request a labelled menu, rather than it be the standard menu provided. However, there was lower positive responses to actively using calorie information to help inform their menu choices, questioning whether the mandatory calorie labelling would be effective as a policy to reduce obesity. Further research would be required to investigate whether there was any change to actual purchases in restaurants and takeaways and whether the legislation forces establishments to reduce the calorie contents of their menu.

### **Keywords:**

Mandatory calorie labelling, obesity, nutritional information





# Elliot Mackie

## Public attitudes and understanding of allergens and food labelling

### **Abstract**

The world of food allergens is forever changing and so laws, information and questions are being constantly developed. In recent years this has related to food labelling of pre-packaged foods for direct sale. There are few studies showing the attitudes and understanding of the United Kingdom (UK) public following the introduction of Natasha's Law (one of the newest pieces of legislation in relation to labelling of allergens). This caused the researcher to organize a study in attempt to gain an insight of public attitudes and understanding of allergens and food labelling. Forty-one participants responded to an invitation using the researcher's personal Facebook and LinkedIn account. Data was analyzed by the researcher. Data was compared to existing literature in attempt to find similarities and differences and develop new study questions. Results were analyzed and cross tabulated to see if attitudes or understanding differed depending on the demographic. Whilst different responses and different conclusions could be drawn from the data, the researcher was satisfied that the attitudes and levels of understanding was positive, except for anomalies. Some demographics had more negative attitudes towards certain aspects of the survey. For example, the views held by those who had a background in catering were much more negative towards the question asking how much trust they have in food business allergen labelling. From examining the data of the understandings and attitudes of the UK public it was clear, when comparing it with the data from the literature, that understanding has slightly improved. However, it was also clear that positive attitudes and good understanding did not transfer into good practice. One recommendation is to review and reflect upon current employee training and risk assessment legislation. This study has shown that there is a need for further research within this field. Hopefully, this study can be used in the future as a platform for further research.

### **Keywords:**

Allergens, food labelling, prepackaged foods, Natasha's law, food business allergen labelling, risk assessment legislation



# Max Martin

A survey study investigating the attitudes and perceptions of tattoo studios towards infection control and hygiene practices

## Abstract

The number of operating tattoo studios is increasing faster than ever within the United Kingdom (UK), formulating a growing public health concern amongst professionals. Tattoo studios that aren't operating safely and hygienically can potentially spread blood-borne diseases as a result. Very few studies in the UK have investigated the attitudes and perceptions of tattoo studios towards their infection control and hygiene practices. This study looked to help fill this gap. Additionally, the legislative controls relating to safe tattooing differs across the UK and can therefore result in inconsistent hygiene practices across different boroughs. This research study used the convenience sampling method, a non-probability sampling method, to recruit tattoo artists in the Greater Manchester area as participants. The study involved the completion of an anonymous questionnaire to understand the demographic of tattoo artists, their knowledge, attitudes and understanding of good hygiene practice and infection control. The main findings of the research study were that tattoo studios within the Greater Manchester area have a good understanding of good hygiene and infection control practices and implement them in their procedures. The overall average of participants who provided an answer that related to good hygiene and infection control practice was calculated at 95.56%, leaving an average of 4.44% of participants who provided an answer against the desired hygiene and infection control practices. Contrary to this, although they showed good levels of practice, 12.9% of respondents didn't believe that blood-borne disease could be transmitted through tattooing, showing a lack of education and understanding of the reasons for hygiene practices. This study highlights possible reasons for these results, such as lack of mandatory training across the UK and the incidence of 'underground' unlicensed tattoo studios operating with low hygiene standards.

## Keywords:

Tattoo, infection control, hygiene practices, health impacts



# Emma McClatchey

A survey study analysing a young adult's (18-24) knowledge and viewpoints on how social media impacts mental health

## Abstract

A variety of studies have presented mixed opinions on social media's impact on mental health. Depressive symptoms, poor body image, lowered self-esteem and anxiety have been linked to social media and excessive use, which are of public health concern. On the other hand, social media has been linked with aiding depressive symptoms by increasing connectivity, social security, loneliness and confidence. The aim of this research was to explore the knowledge and understanding of young adults (18- 24 years old), to explore awareness of the positive versus negative health impacts of social media and mental health. This study used a quantitative approach using JISC Online Surveys and gathered 50 respondents in the United Kingdom (UK) to analyse awareness and state of mental health. Research has shown that the population has awareness on the associations between social media and poor mental health. The population felt that social media increases connectivity with others but felt social media was addictive and can lower self-confidence. Most of the population answered questions regarding their state of mental health, suggesting that state of mental health was positive, with few reporting negative feelings. The population understood the importance of managing time spent on social media for mental health, however, some reported 'withdrawal' symptoms when not using social media platforms, which is linked to social media addiction.

## Keywords:

Social media, mental health, depressive symptoms, poor body image, lowered self-esteem, anxiety, connectivity, social security, loneliness, self-confidence, young adults, social media addiction



# Megan McLarney

A quantitative study on the students of Liverpool John Moores University which investigates the effects and influences that alcohol can have on a person's mental health

## Abstract

There is a close link between alcohol use and mental health. Alcohol misuse can contribute to the worsening of symptoms of multiple mental health problems. Drinking has become a large part of the student culture. Much of this research aims to highlight the links between alcohol and mental health and make more students aware of the detrimental effects that alcohol can have on the body mentally. This study used a quantitative approach and used an online questionnaire as the method for data collection. Participants were recruited through a social media advert posted on Facebook. The study had 31 respondents, and this made it difficult for the researcher to establish any clear trends and whether they were coincidence. Also, due to the sample size being so small, the study findings were not as representative as the researcher would have liked. The data produced by the questionnaires was analyzed using SPSS software, where graphs and chi-square tables were created to make comparisons and see if there were clear trends between questions. The results from this study showed that there was an initial trend between the amount of alcohol consumed and the emotions that students were feeling. However, after producing the chi-square results, the P value of each chart ( $<0.05$ ) suggested the results were more than likely to be coincidence or due to the sample size. A large portion of participants in this study said they were consumers of alcohol and a lot of those who responded yes to drinking alcohol were the younger students aged 18-24. Once the researcher came to the end of the study, there were a few recommendations to be made to help raise awareness on the subject. These included implementing more educational campaigns to make students more aware of the dangers of drinking, especially binge drinking; having further promotion on drinking advice and limits that are already in place. Finally, the researcher believed that this study topic would benefit from further studies, which take a qualitative approach looking more specifically into the attitudes and reasoning as to why drinking is such a big part of the student culture.

## Keywords:

Alcohol, mental health, student culture, drinking behaviours, binge drinking, stress, anxiety.



# Jon Newman

A qualitative study to explore the attitudes and understanding of hospitality workers towards allergens and their experiences of online allergen training

## Abstract

Food allergies are a significant problem in the United Kingdom (UK) and there are an estimated two million people living with a diagnosed food allergy. Although fatalities through accidental ingestion are rare, with typically less than 10 cases per year, hospital admissions are rising, and in the last 20 years hospital admissions for food-induced anaphylaxis increased by 5.7% per year. Evidence demonstrates that we are now eating outside of the home more than ever before due to convenience and social influences. There is an increased expectation and confidence from consumers for businesses to provide accurate allergen information. This confidence is somewhat misplaced with studies finding only 40% of business owners are confident they could answer customer questions about allergens. This study aimed to explore experiences and attitudes of hospitality workers towards allergen control and their experiences of online allergy training. Data was collected using face to face interviewing with a sample of eight hospitality workers across a multi-site hospitality business in the North West of England (70% female, 30% male). Interviews were analysed thematically, and eight themes drawn from the interviews were compared to previous research: individual learning needs; technical problems; cheating (ability to complete training for others or without understanding content); time management and convenience; effectiveness (how effective is the online training as a tool for allergen management); high confidence in process and personal knowledge; lack of confidence in process and personal knowledge; responsibility (who is responsible for allergen control, for example individual server, company or customer). The study findings identified that although there is a generally positive attitude amongst staff towards allergy control, there is uncertainty about where overall responsibility lies. The study revealed that confidence levels regarding allergens amongst staff were high, but staff felt there were problems with communication from their head office and that not all staff were entirely confident in providing information to the customer. Unsafe practices were also noted from discussions where breaches of company policy could create gaps in allergen controls. The provision of online training was perceived as a necessity, but the time constraints of learning and individual learning needs contributed to a lack of retention of information. A consensus amongst workers was that online training should be used in conjunction with other training methods, with face-to-face training as the preference. Recommendations include a thorough review of current allergy processes to ensure that the information provided is accurate and ensure sites do not deviate from the process. A review of the current training provided, considering the software in terms of time constraints for completion and accessibility for users with specific learning needs, is also needed. These recommendations aim to improve understanding of allergen controls to confidently engage with the customer to prevent the occurrence of accidental reactions to food allergens.

## Keywords:

Allergy, allergen awareness, food safety, qualitative, attitudes, experience, knowledge, training



# Catherine Orfila Manasco

A quantitative study into the knowledge and attitudes of young people in Gibraltar towards pollution

## **Abstract**

Low air quality and pollution levels have shown to affect human health all around the world. The World Health Organization has addressed this issue and concerns towards pollution and its effects on human health. The aim of this study was to acknowledge and address the primary concerns young Gibraltarian's have towards pollution in Gibraltar. Many studies have been conducted around the Straits of Gibraltar, but there have been limited studies exploring young people's attitudes and knowledge towards pollution in Gibraltar. The researcher's aim was to fill the gap in the current literature to provide the Government of Gibraltar and relevant authorities with data that could influence future research. The study collected data via a quantitative method, the use of self-selected participation, where only residents of Gibraltar were eligible to complete the questionnaire. Through assessing young Gibraltarian's knowledge and attitudes towards pollution in Gibraltar, the researcher was able to collect data portraying their demographics, attitude, behaviors, and knowledge on pollution. The study was conducted on 63 participants, which proved to be an acceptable volume of participants considering Gibraltar only has a population of around 30,000. From the data collected the researcher was able to conclude that young people in Gibraltar, ranging from 18-30, are very laid back towards their influence on Gibraltar's current pollution. The data showed that participants had a clear understanding of the health implications associated with pollution. From the research conducted the results should be used for further research on the attitudes and knowledge young Gibraltarian's have towards pollution.

## **Keywords:**

Young people, pollution, low air quality, Gibraltar





# Patrick Owens

To understand how the Food Hygiene Rating Scheme in England impacts on consumers choice of food venues

## Abstract

The Food Hygiene Rating Scheme (FHRS) was launched in 2010 by the Food Standards Authority and is used by local authorities in England to identify food safety and hygiene standards in food establishments. The scheme provides visible food hygiene rating scores, allowing consumers to easily review ratings and make informed decisions. The Chartered Institute for Environmental Health (CIEH) are in favor of introducing mandatory display of FHRS scores, commonly referred to as “scores on the doors” in England - this is already the case in Wales and Northern Ireland. Food businesses in England are currently exempt from displaying their food hygiene score rating. This study aimed to understand how the FHRS in England impacts on consumer choices, specifically to understand consumer behaviour in regard to the scheme, whether the COVID-19 pandemic changed this behaviour and finally to gather consensus on whether or not the scheme should be made mandatory in England. A quantitative questionnaire was created to cover the aims of the study and was circulated via social media, approached by a hybrid of snowball and convenience sampling. In total, 52 responses were returned, analyzed and presented. The study found that a substantial 98% of people believe that displaying food hygiene ratings as part of FHRS should be made mandatory, and that food hygiene ratings do influence consumer behaviour to varying degree with 67% of respondents believing it is an important factor when deciding where to eat. In general, the impact of COVID-19 was unclear from the result. An evident shift in opinion of consumers is not truly reflected in their behaviors. Of those surveyed, 59% believed that perceptions of food safety have changed since the pandemic, but 65% of individuals have not checked food safety ratings any more frequently than before. This study can firmly recommend that the display of food hygiene rating should become mandatory in England. However, there needs to be more investigation into how COVID-19 has impacted consumer behaviour in the context of food safety.

## Keywords:

Food Hygiene Rating Scheme, Chartered Institute of Environmental Health, Food Standards Agency, consumers, COVID-19, pandemic, purchasing, food businesses



# Somsi Poulsen

A survey study investigating attitudes and perceptions of consumers towards food pollution affecting food purchasing practices or other lifestyle choices

## Abstract

Food polluted by chemical contaminants is a serious public and environmental health concern. Consumer attitudes to food pollution and how this affects food purchasing practices or other lifestyle choices is dependent upon their knowledge of what food pollution is, and their concern about the risks that food pollution poses to health. The aim of the research was to explore attitudes and perceptions of consumers towards food pollution, specifically chemical contamination of food affecting food purchasing practices or other lifestyle choices. The researcher did not address other food safety hazards such as microbial contamination of foods. The method used was an anonymous questionnaire which comprised 32 questions and followed a logical, structured approach to measure perceptions, attitudes, and behaviours, centred around the areas of demographics, knowledge, attitudes, and practice. The population surveyed was 'consumers' and the inclusion criteria for participation in the study was that they must be aged 18 or over. The research study used convenience sampling as the data collection method. The questionnaire was distributed to open social media platforms: Twitter and LinkedIn, using various hashtags to access participants. This non-probability sampling allowed participants to self-select, based on availability and willingness to take part, and allowed for wide and inclusive coverage to obtain comprehensive data. Data collected from the questionnaire included demographics of the participants, their knowledge and attitudes towards food pollution and their practices in terms of food purchasing and other lifestyle choices. This data was analysed, and the findings revealed: most consumers, but not all, are knowledgeable about the different chemical contaminants that may be present in food; the sources of food pollution; the types of food that could be at risk of being polluted (identifying fish, seafood, and vegetables to be most at risk of containing contaminants); the different pathways that could introduce pollution into food, both during primary and secondary food production; and the populations most at risk from consuming polluted food, for example, pregnant women, babies and the elderly; the attitudes of consumers regarding food pollution is one of concern. In particular, consumers are 'very concerned' or 'concerned' about consuming food contaminated with pollutants such as microplastics, agrochemicals, and heavy metals; and are 'very concerned' or 'concerned' about the transmission and concentration of such pollutants through the food chain; and that, despite this knowledge of food pollution and these attitudes towards it, the practices of consumers when it comes to food purchasing and other lifestyle choices was varied. Previous studies have considered consumer attitudes towards food pollution, and these prior studies called for further research and investigation into consumer knowledge and food purchasing practices. This research adopted a quantitative approach using a survey design, to collect and analyse anonymous data to add to the research base in this area of food pollution. As a consequence of the findings, a number of recommendations have been proposed to inform future initiatives to prevent food pollution; inform initiatives to influence consumer purchasing practices and other lifestyle choices to prevent food pollution and/or limit the consumption of food contaminated by pollution.

## Keywords:

Food pollution, perceptions, attitudes, consumers, food purchasing, lifestyle, chemical contaminants



# Pamela Radakovic

A qualitative study on people's experiences of fuel poverty in the North West of England

## Abstract

Fuel poverty is currently one of the biggest public health issues facing the United Kingdom. With the continuous increase in energy prices, more families are being placed into fuel poverty and it is only set to get worse. This qualitative study aims to investigate and analyse people's experience of living in fuel poverty in the North West of England. The study of fuel poverty is of importance to environmental and public health as local authorities have a duty to ensure people live in a household of an adequate temperature to ensure the health and well-being of the public. The findings from this study shows how government intervention may not be as successful as anticipated and although households receive some government support, it simply is not enough to alleviate the problem. The results drawn from interviewing six participants could not possibly give a complete indication of the severity of fuel poverty in North West England, but collectively all interviews drew the same conclusion. The results showed that not only were people in social housing and in receipt of benefits suffering from fuel poverty, but homeowners and full-time workers were quite possibly in a worse situation as they could not access the help offered to the aforementioned. This led the researcher to conclude that the government interventions were not as successful as anticipated and there was an unfairness in the distribution of support made available to households. Suggestions included more sustainable homes, better support for fuel poor households, government intervention to ban energy companies from continuous price hikes.

## Keywords:

Fuel poverty, qualitative, cold homes, housing



# Jessica Rogers

An exploration of the environmental impact of single-use menstrual management products

## Abstract

Innovative options for menstrual management have the potential to greatly reduce solid waste and aid in a healthier and cleaner environment. As a significantly used group of products, menstrual management products make up a mass amount of waste produced. However, there are a variety of management options that have the potential to reduce waste impacts if they replace conventional methods. Religion and cultural beliefs have an impact on how people perceive menstruation and restrict menstruators. Stigmas around menstruation in society that were formed as long ago as 77AD present menstruation negatively using verbs such as dirty, unclean, and shameful. Inadequate education and taboos around menstruation have enabled menstrual silence. Single-use menstrual management products such as disposable sanitary pads and tampons are the most impactful on the environment. Sanitary pads were the most impactful product, with the damage to the environment taking place from the first step of production to the end of life. The bleaching process that occurs to make the absorbency layer appear white, releases toxins such as carcinogens into the environment. The environment is then further at risk from physical pollution if single-use sanitary pads are placed into landfill or carcinogens being released while products are thermally treated.

## Keywords:

Menstrual hygiene, menstrual disposal, sanitary waste management, environmental impacts, menstrual sustainability, societal views on menstruation, history of menstruation, menstrual management, feminine hygiene



# Nina Rowntree

A quantitative study surveying knowledge of safe sexual habits in young adults in the United Kingdom

## Abstract

Sexual health is a significant factor in the lives of many young adults. It is important for young adults to know and practice safe sexual habits. Unsafe sex can lead to unplanned pregnancies, contracting sexually transmitted infection (STIs) or sexually transmitted disease (STDs) which, if untreated, can lead to long-term morbidity and have an impact on fertility. With young adults at higher risk of performing risky sexual behaviors, it is important to find out young adults' views on sexual health in the United Kingdom - doing so could assist in finding gaps in care and education. This was a quantitative research study examining the knowledge of young adults between 18 and 24 years of age. The aims of the study were to determine what young adults know about safe sex, where they obtained that knowledge and explore their confidence levels and anxieties around practicing safe sex. This study used an anonymous online questionnaire to sample 52 participants, young adults between 18 and 24 years of age, to address the research aims. The survey was open for three months, using convenience sampling to recruit participants. Data was analyzed using Microsoft Excel and then presented in figures and tables. Many young adults reported schools as a primary resource of sexual health knowledge and 69% of participants believed they were not taught enough. In questions that tested knowledge females tended to select the correct answer more often than males. Females (n=16; 62%) said they would feel comfortable asking a partner to use a barrier. A higher number of males said they would feel confident putting on a condom (n=12; 88%) and establishing consent before sex (n=18; 69%). This study found that overall young adults have a decent knowledge of sexual health, with female participants seemed more knowledgeable than male participants. Young adults reported feeling comfortable communicating with their partner and establishing consent before sex. An intervention focusing on the sexual health knowledge of young adult males is recommended, as well as more inclusive sex education in schooling, a campaign spreading information on symptoms of STIs/STDs and more research into the sexual health knowledge of the population.

## Keywords:

Young adult sexual health, sexual health, young adult health, sexual health knowledge



# Jaleela Sambo

A quantitative study exploring the knowledge, attitudes and behaviour of undergraduate students in the United Kingdom towards food safety



## Abstract

Food-borne illness is a major public health concern that results in over 2.2 million deaths per year in the United Kingdom (UK) due to consumption of contaminated food. Studies conducted worldwide have noted shortcomings in food safety knowledge, attitudes and behaviour among university students. Although students themselves are not considered to be at high risk, there are broader implications, as they will eventually become caregivers for their households and a majority will be responsible for vulnerable groups in their immediate environment. The study aimed to explore the overall food safety knowledge, attitudes and behaviours of UK undergraduate students and to compare the relationship between their knowledge, attitudes and behaviour and demographic characteristics. To gather data for this study, a quantitative research design was employed using an online questionnaire as the data collection method. The questionnaire was distributed through the researcher's social media page, Canvas and with the help of a gatekeeper to recruit Public Health Institute students. Data analysis was conducted using SPSS (version 27) and Spearman's correlation was used to measure association between variables. The sample for this study consisted of 54 undergraduate students in the UK, with half of the respondents being between 18-25 years, with more than half being female. The mean knowledge score was 3.31 out of seven questions. There was a weak positive correlation found between food safety knowledge and behaviour scores [ $r=0.168$ ], as well as a weak positive correlation between food safety attitudes and behaviours ( $r=0.295$ ). The study found that female respondents had better food safety knowledge, attitudes and more hygienic food behaviours. Most respondents did not correctly answer questions related to keeping foods at safe temperatures and cross-contamination. Additionally, participants rarely practiced using a thermometer to determine correct temperatures of foods and they discarded leftover food prematurely. The results can help students to increase their knowledge and awareness of food poisoning. The study highlights the need for educational initiatives, particularly in the context of food insecurity for this population.

## Keywords:

Food safety, knowledge, attitudes, practice, undergraduate students, university students





# Lucy Stockley

## Cannabis comparative study: public impact and government intervention across the United Kingdom and Canada

### Abstract

This research paper aimed to compare, contrast, and analyse the extent to which cannabis had harmful impacts and whether current policies in Canada and the United Kingdom (UK) are successful in controlling and monitoring these impacts. Cannabis is one of the most accessible and used narcotics globally. Known for its medical and recreational properties, it is a drug of cultural and economic importance for various countries globally (WHO,2020). Throughout this study the policies examined included the UK's Misuse of Drugs Act 1971, with declassification reviews in 2004 and 2009; as well as the Canadian Cannabis Act 2018. Comparisons were made across both populations with insight into how they differ and whether one should adopt the other's approach. Focus was held on the actions of each policy regarding their regulation measures and success with protection regarding public health. All policies were examined according to a set criterion ensuring that they were evidence-based, with peer-reviewed data. Evidence-based policies need to be examined as it demonstrates not only practical implementation of policies, but also provides scientific data and knowledge needed to ensure the credibility of each policy. Examination also considered governmental policy reviews and secondary academic reviews to allow for a transparent analysis across both populations. Examples of those reviewed included, as previously mentioned, the Canadian Cannabis Study 2017 and the UK Advisory Council on Drugs Misuse 2001. With public approval rates of cannabis legislation increasing over previous years in the UK (Office of National Statistics, UK, 2022), it raises the question: are healthcare policies within the UK outdated and is there a need for re-examination of The Misuse of Drugs 1971, specifically regarding cannabis at local and regional levels? Impacts of cannabis were identified and analysed with inclusions of harms and risk across various industrial categories, including cannabis-related drug offenses, health impacts both physical and mental, and economic impact.

### Keywords:

Cannabis, Canada, United Kingdom, policy, impact, medicinal, recreational



# Elizabeth Ugwualia

A survey investigating students' concerns, attitudes and perceptions of working while studying at university

## Abstract

Working while studying is a common experience among students today. This is because students have different motivations to work while studying. The aim of this study is to investigate the concerns, perceptions and attitudes of undergraduate and postgraduate students as they work while studying at university. The study is important because it will highlight various challenges and benefits experienced by students who work while studying and this will inform the development of programs to support students to overcome the challenges. The objectives of the study included identifying the reasons why Liverpool John Moores University (LJMU) students work while studying, to determine the positive benefits gained by the LJMU students who are working and to ascertain any obstacles experienced by LJMU students who work while studying. The study adopted the use of questionnaires which had both open ended and closed ended questionnaires and consisted of 31 questions. The total sample involved 41 participants. The findings of the study agreed with the contents of the literature review: 42.5% found it challenging to balance work and studies and 5% worked to raise fees. In comparison, 27.5% wanted some work experience; 45% indicated average performance at work; 52.5% indicated that they enjoyed work and did not intend to quit; 30.8% participants indicated that they successfully balanced work and education. Therefore, the researcher recommends programs that assist students who work while studying to overcome their stressors and challenges to have better academic performance. Working while studying could be beneficial. Despite this, it is also likely to generate significant drawbacks to the learner's academic performance, like reduced time to study, higher levels of stress, and reduced academic performance. The survey also highlights areas that need further studies, like the effects of working while studying on mental health and the students' academic performance.

## Keywords:

Concerns, attitudes, perspectives, working, studying



# Isobel Westwood

A literature review considering the changing nature of student housing in the United Kingdom and its impact on environmental health



## Abstract

It is key that students secure their accommodation carefully, as their housing can have a great impact on their health. Choosing the wrong housing can lead to poorer overall health. It is becoming more popular for university students to live away from home and with their limited funds, this means that students often lean towards cheaper and therefore lower quality housing. Common implications of poor housing are respiratory problems caused by mould, transmission of communicable diseases, or the development of mental health issues like anxiety or depression. All of these factors affect students' ability to learn. To find relevant literature, search criteria included "student housing", "student accommodation", "environmental health", and "health". The traditional housing experience for students was often living in university-owned halls of residence in their first year, before moving out of the city centre into HMOs rented by landlords exclusively to students. Despite, the increasing populating of new-build private student flats, a significant proportion of student accommodation remains 3-floor terraced houses with a large number of bedrooms and little space. To a more unscrupulous landlord, these HMOs were less a way to provide good housing to vulnerable students and more a way to fit as many students as possible into as little space as possible to achieve maximum profit. It was even common for some communal areas to be renovated into another bedroom to fit more tenants in and make more money. These houses often had mould that could lead to tenants developing respiratory conditions and suffering exacerbated symptoms. Lack of space meant mould was often more likely and would promote poor mental health due to the unwelcoming atmosphere. Students in an NUS survey reported they often felt their landlords did not respond quickly enough to complaints of poor conditions or required maintenance which led them to seek other accommodation with other landlords. The neighbourhoods these houses were in often became "student ghettos" where the area became overrun with students as many houses were bought by landlords and rented to students. This often made the permanent residents unhappy due to the increases in antisocial behaviour and the student residents constantly changing every academic year. Private purpose-built student accommodation (PBSA) has become increasingly more popular recently. Student accommodation buildings, newly built with the specific intention of private ownership and use as halls of residence for students, are usually formed of cluster flats, the most common style containing ensuite bedrooms and a communal living area. The buildings are gated for security and to create a community of student residents. The concept behind these PBSA is that the onsite management team, overnight security team, and cleaning staff will work together to ensure the buildings are kept clean, safe, and well-maintained. However, this is not always the case as there are reports of poor conditions like mould, pest infestations, and amenities breaking without being fixed or replaced. This accommodation is also often very expensive which can make it inaccessible to a number of lower income students who then find themselves being pushed back into poorer quality housing.

## Keywords:

Housing, students, environment, health, environmental health



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