BMJ Open

Durham University students' experiences of asymptomatic COVID-19 testing: a qualitative study

Leah Ffion Jones ,[1] Eleonore Batteux,[1] Stefanie Bonfield ,[1] Jaskiran Kaur Bhogal,[1] Jo Taylor,[1] Camila Caiado,[2] Jacqui Ramagge,[2] Dale Weston[1]

To cite: Jones LF, Batteux E, Bonfield S, *et al*. Durham University students' experiences of asymptomatic COVID-19 testing: a qualitative study. *BMJ Open* 2021;**11**:e055644. doi:10.1136/bmjopen-2021-055644

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2021-055644).

Received 19 July 2021
Accepted 09 December 2021

[1]Behavioural Science and Insights Unit, UK Health Security Agency, Salisbury, UK
[2]Durham University, Durham, UK

Correspondence to
Dr Leah Ffion Jones;
leah.jones@phe.gov.uk

ABSTRACT

Objectives To evaluate the asymptomatic coronavirus testing programme at Durham University by exploring students' barriers and facilitators to taking part and provide recommendations to improve the programme.

Design Qualitative interviews.

Setting Online.

Participants 30 students enrolled at Durham University were interviewed in March 2021.

Main outcome measures Attitudes towards testing, experiences of testing and barriers and facilitators to engaging in testing at Durham University.

Results Key motivations for testing included protecting oneself and others and accessing facilities and events. The process of booking, accessing and doing a test was mostly easy and convenient, although some may prefer home testing. There were concerns about the accuracy of tests and the implications of a positive result. Some highlighted they might be less likely to engage in testing if vaccinated. A negative test result provided confidence to engage in their daily activities, while encouraging some to socialise more.

Conclusions The findings show that the testing programme at Durham University is convenient and well organised, with testing as a potential requirement to access social events, and self-isolation support being key contributor to uptake. These findings provide insights into young adults' attitudes towards testing and can inform testing programmes in other universities and settings with asymptomatic testing programmes.

Strengths and limitations of this study

- We used a qualitative method which provided rich, in-depth insights on experiences of and attitudes towards a university COVID-19 testing programme.
- Interviews were held at a single time point during a period of national lockdown with students from one university.
- All participants had engaged in some form of testing for COVID-19 and had mostly favourable views towards testing.

INTRODUCTION

Asymptomatic testing programmes for COVID-19 have the potential to reduce asymptomatic transmission. This can be done by identifying infected individuals and enabling them to minimise contact, although the effectiveness of programmes relies on individuals taking part and responding appropriately to test results.[1] Since November 2020, mass testing programmes have been introduced across the UK, with lateral flow tests (LFTs) offered to local authorities, schools, universities and workplaces,[2–4] and more recently made available nationally.[5]

As restrictions are eased in the UK, it is crucial to understand how asymptomatic testing uptake can be maximised, particularly in environments where risk of transmission is high such as universities.[6] In November and December 2020, several UK universities, including Durham University, implemented LFT programmes to minimise the spread of COVID-19 during the Christmas break. Two LFTs to be taken 7 days apart were offered to students and staff in November and December 2020 before travelling. The programme remained available to students and staff who returned in 2021.

The first stage of the service evaluation involved speaking to college heads and test centre operatives about their experiences, which informed an online survey in December 2020 to explore experiences of and attitudes towards testing.[7] This identified barriers such as limitations in the process and concerns about the impact of testing, which echoes findings in both community[8] and university testing programmes.[9 10] This warranted an in-depth analysis to further develop recommendations to increase testing uptake. To this end, qualitative interviews were conducted with students in March 2021 to evaluate the testing programme and identify how engagement with asymptomatic testing can be maximised as students return to university.

METHOD

Participants

All participants were students at Durham University and recruited purposively by the university on behalf of Public Health England. Email invitations were sent to those who expressed an interest in follow-up interviews following the completion of an online survey about the testing programme in December 2020 (n≈600) and those interested in participating were asked to contact a member of the research team. Interviews took place between 5 and 12 March 2021 with the first 30 students who expressed their interest. Subsequent students who expressed their interest were told that no more participants were required at that stage but that they may be contacted in future if more participants were needed. Based on the insights from the online survey and previous literature,[11] it was estimated that 30 interviews would achieve thematic saturation. After the 30th interview had been conducted, the research team met to confirm that thematic saturation had been reached.

Patient and public involvement

Patients and/or the public were not involved in the development of the study due to the rapid nature of this research, although the study was informed by previous survey results.

Interviews

A semistructured interview guide (see online supplemental file 1) was developed by two researchers (SB and EB) and reviewed by a third (LFJ). The questions were loosely based on behavioural frameworks such as the COM-B model (Capability, Opportunity, Motivation and Behaviour),[12] protection motivation theory[13] and the extended parallel process model.[14] Topic areas included attitudes towards testing, barriers and facilitators to testing, behaviours following a test and future testing intentions.

Procedure

All participants provided informed consent before taking part. Interviews were conducted remotely via Microsoft Teams and led by six qualitatively trained behavioural scientists in the research team with a minimum Master of Science qualification and numerous years of experience conducting qualitative research in public health (DW, LFJ, EB, SB, JKB, JT). Interviewers explained they were interested in learning about students' experiences of the programme. During data collection, the research team regularly met to discuss themes identified. Discussions were audio recorded, transcribed by an external agency and checked for accuracy by the research team during familiarisation with the data. Each interview lasted no longer than 30 min and participants were offered £12.50 for their time. (See online supplemental file 2 for study protocol.)

Analysis

A rapid thematic analysis of key themes following the steps laid out in Braun and Clarke[15] was conducted in Microsoft Word. Five researchers (LFJ, EB, SB, JKB, JT) familiarised themselves with the transcripts and generated initial codes independently. Themes and subthemes were derived inductively from the codes by all researchers which were then refined by two researchers (SB and EB), cross referenced and checked to ensure they encompassed all relevant data. Codes were then refined and themes and subthemes defined, labelled and arranged in order to produce a structured layout for reporting the findings. This was reviewed by a third senior researcher (LFJ) followed by a final review by all members of the research team to check that themes and subthemes were an accurate reflection of the data. A draft copy of the manuscript was sent to all participants to ensure the findings accurately represented their views and that they were not identifiable.

Table 1 Participant characteristics

Characteristic	n
Gender	
Female	14
Male	15
Non-binary/prefer not to say	1
Level of study	
Undergraduate	28
Postgraduate	2
College*	
Hill	21
Bailey/St Hild and St Bede	9
Living situation	
Live-in	16
Live-out	14
Testing programme	
Took part	29
Pre-Christmas	11
Current tester	18
Did not take part	1

*Participants were from 12 different colleges at Durham University; however, due to a low number of students from some colleges they have been grouped by location. Hill colleges included students from Collingwood, Trevelyan, John Snow, Stephenson, Grey, South, Josephine Butler and St Mary's College. Bailey colleges included students from St Cuthbert's, Hatfield, University/Castle and St Hild and St Bede.

RESULTS

Thirty interviews were completed with students from 12 colleges at Durham University. Participant characteristics can be seen in table 1.

We identified three themes: motivations for testing, convenience of testing and impact of testing. The subthemes for each theme can be found in tables 2–4, respectively.

Table 2 Motivation for testing theme quotes

Subtheme	Quotes
Reducing transmission	'One of the biggest mental health impacts the pandemic has had for me has been this burden of worry and guilt and responsibility. It's the kind of worry that you might go to a supermarket and then brush past an old lady by mistake and then end up giving her Covid.' (Participant 25, live-in) 'I'd happily do whatever small things I can to make what can be a big difference on the, on a national scale really.' (Participant 21, live-out)
Peace of mind	'As confidence grew in the, you know, not as many people were testing positive, I think people were more prepared to do it.' (Participant 6, live-in) 'It's made me want to get tested more because I don't know what they're [housemates] doing.' (Participant 4) 'I'd say that there's maybe just complacency… they're just not worried about Covid at all to be honest, they're not, they don't think it'll affect them.' (Participant 28, live-out)
Incentives	'Maybe like a group incentive could work. As in that would encourage you to collaborate with other people and say, look, if we all get tested, we can get a free takeaway.' (Participant 14, live-in) '[on housemates not getting tested] Because they don't work, and they don't have a reason to need to get it done, […] I don't know if I would be getting tested if I wasn't working.' (Participant 12, live-out)
Social influences	'If everyone else is going to go, you're more likely, I was more likely to want to go because it's a group experience.' (Participant 29, live-in) 'We actually all encouraged each other, and we ended up encouraging him to tag along as well, and, yeah, we managed to convince him.' (Participant 24, live-in) 'Those two that didn't get tested, they just presumed if everyone else has Covid, they would have Covid. So they said they didn't think there was any point in them getting tested.' (Participant 26, live-in) 'For people in households, not in the college accommodation, I think self-isolation is a lot easier, a lot more simple but when you're in college you have to force the entire bubble to self-isolate.' (Participant 18, live-out) 'He was saying please don't go and get tested, please don't go and get tested. And we were like well no, I want to get tested so I will.' (Participant 26, live-in) 'I did kind of worry that if I had an asymptomatic case, I could end up ruining people's plans to go home for Christmas.' (Participant 25, live-in) 'I think ideally I'd want to do it every week but the thing stopping me from doing that is social pressure I guess.' (Participant 11, live-out)
Beliefs about testing	'I do think it's a useful thing for society, and for unis, and schools, and literally I can't think of a situation where getting regularly tested would be a negative thing.' (Participant 20, live-in) 'The student opinion in Durham, from my limited experience in one college out of 16, seems to be that the lateral flow testing hasn't been a huge success… It's more that everyone's not too sure of the purpose they serve.' (Participant 3, live-out) 'The more of us that get negative results, the more you can know that it's a real result and not a false.' (Participant 20, live-in) 'Some people just didn't believe that the lateral flow tests were true at all or that they wouldn't have, would have given a false positive and things like that.' (Participant 6, live-in)
Concerns about testing positive	'The rest out them [housemates] didn't want to because they wanted to keep going to parties and things, which isn't technically allowed but they were doing it any way…and then before they went home they didn't get tested either.' (Participant 4, live-in) 'They [housemates] would rather that [those] of us who do go to get tested are the ones who go, because we are the ones who don't break the rules. They want us to get tested, so it looks like all of us are following the rules.' (Participant 4, live-in) 'If you're sat in your bedroom and you've done a test and you get a positive result, it's a bit more of a, OK, what do I do about this thing? Some students might not feel quite as comfortable disclosing that to the university.' (Participant 30, live-out)

Motivations for testing

Participants discussed a range of motivations for getting tested, as well as motivations which may lead someone not to get tested.

Reducing transmission

An important motivation for participants to get tested was to reduce transmission of coronavirus. This was often accompanied by the belief that testing will have a positive effect on reducing transmission by identifying positive cases. Participants were particularly motivated by protecting their friends and loved ones. Those getting tested before Christmas wanted to avoid passing coronavirus to their family, particularly those at high risk. Those who continued to get tested after the Christmas break wanted to keep their flatmates safe.

Participants were motivated by protecting the wider community from infection and potential deaths, particularly given the large older adult population in Durham. Some who got tested before the Christmas break were concerned about transmitting the virus to others when travelling on the train. Getting tested provided reassurance that they were doing the right thing, with some noting the benefits of testing to help track the spread of coronavirus and contribute to the national effort of reducing transmission.

Peace of mind

Getting tested gave participants peace of mind, which was a motivation for most. In general, they found it comforting and reassuring and they were curious to know whether they could have coronavirus. Some were motivated by the expectation of getting a negative result. Others worried that they could have coronavirus because someone they knew had it recently or concerns that others could bring it into the household.

Most were not worried about having coronavirus given their age and good health, although one noted testing helped them manage health-related anxieties. Some perceived that students who are not worried

Table 3 Convenience of testing theme quotes

Subtheme	Quotes
Awareness of testing programme	'I'd be shocked if there were any students who hadn't heard about it.' (Participant 3, live-out) 'When we got back this term, we got an email, but after that there's not been much communication about it. And often, I'll forget it's there and then I'll walk past the theatre and I'll see it's open.' (Participant 13, live-in) 'You zone out a bit to the emails because there's so many coming through.' (Participant 11, live-out)
Accessing a test	'I think that Durham's website isn't particularly easy to navigate, I wouldn't know where to go to book the test and book the time slot, and there's no real emails that have gone out about it.' (Participant 6, live-in) 'Luckily now in our department, two days a week there's a drop-in testing centre, so you don't have to book, you can just go.' (Participant 2, live-out) 'The location was really convenient because it was just right in college and for the third time I got tested I went to the Palatine Centre which is around a twenty minute walk from here.' (Participant 7, live-in) 'When I came after Christmas some of the test sites had moved […] they couldn't find the racecourse one and I was lucky because I play squash I knew the courts […] and so as I got there the marquee wasn't there which was a bit of a shock, they'd just moved it inside the building but it's not a very obvious entrance unless you know it.' (Participant 22, live-out) 'I think it would be easiest if they made them available in the bar again for people living in.' (Participant 25, live-in) 'A shorter booking system might be useful or even then, giving people packs of tests to take home.' (Participant 30, live-out)
Experience of getting tested	'I've been pretty impressed with everything and how quickly the results come back.' (Participant 1, live-out) 'I think the first time you do it it's a little odd but you get used to it quite quickly.' (Participant 9, live-in)

about coronavirus may not be engaging in the testing programme. Similarly, participants perceived that those who have already had coronavirus might not believe they could be reinfected and therefore not participate in the testing programme.

Incentives

Participants were grateful that the tests are free. Those who received refreshments such as coffee and biscuits were appreciative, although this should be avoided in the 30 min before testing. Participants who did not receive a form of incentive from their college mentioned it could increase engagement, while others made alternative suggestions.

For many, a negative test result enabled them to do things they might not do otherwise, such as travelling home for the Christmas break. Since then, some colleges required a negative test to access non-essential activities such as the bar, library or gym. Anything included in a residential contract could not require a test to access, so this mainly applied to livers-out. This meant that some livers-out who had a job based in the college needed a negative test to attend work.

Many reported that they would get tested if it allowed access to social events. Several believed that taking part in the testing programme will speed up the easing of social restrictions. Some reported that this has been reinforced in university communications.

Social influences

There were both positive and negative social influences on students' motivation to get tested. In terms of positive influences, participants mentioned wanting to reassure their family and housemates and felt pressure from them to get tested. Some reported that living with people who were getting tested influenced their own decision to get tested. Others mentioned wanting to set an example to housemates who were more reticent and sometimes were able to convince them. Some reported that those who lived in colleges may be more likely to get tested compared with livers-out due to living in close proximity to a large amount of people outside their bubbles.

Table 4 Impact of testing theme quotes

Subtheme	Quotes
Behaviour	'I quite like it that pretty much when I leave the centre, I'm relatively confident that I'm currently not infectious… I know that the result doesn't mean I do not have the virus, but it means I'm unlikely to be infectious.' (Participant 2, live-out) 'I guess my mindset is a bit more, I can be a little bit more liberal now I suppose because I'm more likely to be negative than I would be if I hadn't tested.' (Participant 8, live-out) 'As soon as I test negative, I'm like, right, I'm going to go and do all of my seeing people now.' (Participant 3, live-out) 'It doesn't change anything at all because the risk is still, even if I'd had a PCR and I got a negative from that, there's still a chance that it was a, there's still risk.' (Participant 20, live-in)
Future testing	'People will be going to restaurants more and pubs, and socialising a little bit more, which is, then you'll be more likely to catch it. So, I think, a lot of us will be even more on it next term.' (Participant 29, live-in) 'In exam season where I'm going to be studying a stupid number of hours a day and it's a good reason to take a 20 minute revision break but if I'm a bit stressed… it's not going to really work.' (Participant 30, live-out) 'I would feel more justified in being able to skip it, knowing I'd had a vaccine.' (Participant 30, live-out)

In terms of negative influences, participants highlighted that some are not getting tested because they rely on housemates who are to give them a proxy indication of whether they might have coronavirus. Participants were concerned about the impact on their housemates if they tested positive, and the requirement for the whole household to self-isolate. Some were pressured by their household not to get tested, which led to tensions. This was the case before the Christmas break because housemates were worried about having to self-isolate in Durham over the holiday period. One participant reported that they tested less often than they would like due to social pressure.

Beliefs about testing

Participants mostly believed that testing is an effective measure in reducing asymptomatic transmission. All participants held positive views towards testing, although some reported that the effectiveness of testing depends on the scale of it. They believe that the more people take part the more effective testing will be. However, participants mentioned that not all students have positive attitudes towards testing and might not see the benefit, therefore lacking motivation to take part.

There were concerns about the accuracy of LFTs. This motivated some participants to get tested multiple times to be more confident in the result, whereas others believed getting tested as a household was an indicator that a negative result is reliable. Participants believed that others may not be getting tested because of their beliefs about the inaccuracy of LFTs. The view among some is that there is a high rate of false negative tests, which was reinforced by an article in a university newspaper. Participants also reported that some others are worried about false positives.

Concerns about testing positive

Participants were concerned about testing positive and having to self-isolate. Some recounted experiences of having to self-isolate and issues with getting food, although they mostly reported that they were able to access basic supplies from the university and with help from their friends. The lack of social interaction was also a concern, which some who had previously self-isolated reported as damaging to their mental health. Participants reported that missing out on socialising was a concern among some of their peers and could be a barrier for them to get tested.

Some students were concerned that a positive test might indicate that they are not following coronavirus guidelines. This can mean that those who follow guidelines are more likely to get tested. Some discussed how others might be concerned about the university or government finding out about a positive test. Despite these concerns, participants in this study were mostly willing to accept having to self-isolate following a positive test and did not prevent them from getting tested.

Convenience of testing

Participants overwhelmingly reported that Durham University's testing programme was a well-organised, quick and easy process, although participants had some recommendations for improvement.

Awareness of testing programme

Participants were aware of the testing programme through university or college communications. They reported receiving emails encouraging participation, communications on social media and from friends. There were mixed opinions on whether there was too much or too little communication. Some reported that reminders via text message would be good, whereas the amount of emails received was off putting. Another reported almost forgetting that testing was available despite being willing to get tested.

One participant believed that including more information about why testing is effective and the reasoning around when multiple tests are required (such as getting tested twice before the Christmas break) could motivate people.

Accessing a test

Participants reported that it was easy to access a test. The available slots were reportedly convenient, and sites had enough capacity. Those who could book tests via online links through their university portal found the process convenient as they could choose a slot, although some reported difficulty in finding or navigating the booking website.

Before the Christmas break, flats in colleges were allocated time slots, which some did not find convenient and sometimes reported having to miss lectures in order to attend. Participants preferred walk-in options as it removes the need to know in advance when a test will be required, given that tests need to be booked at least 24 hours in advance. Participants found this frustrating at times as they reported that often there were available slots within the following 24 hours.

Participants reported that testing at their college was convenient as the testing site was always located near their housing. Testing was reportedly less convenient for those living out, unless they lived near a testing site. Some reported that the racecourse testing site had moved and was harder to find. Others reported that some testing sites in colleges that were convenient had closed. Some participants reported that they would prefer home testing options.

Experience of getting tested

Participants' experiences of getting tested were mostly positive. Participants believed that the risk of infection at testing sites was low as they reported that the sites were not usually busy and did not involve much queuing or waiting. Having households sat at different tables also improved safety. Participants were satisfied with how quickly they

get their results, but some reported the results email was long and the result could be difficult to identify.

Participants reported that doing the test was not a pleasant experience, although those who were testing regularly had got used to it. However, participants believed that some of their friends do not get tested because of the stress of doing the test or the adverse physiological effects such as gagging or throwing up.

Impact of testing

Behaviour

Although participants knew that LFTs may not identify all who are infectious, they still had confidence in a negative result. Participants reported feeling more relaxed following a negative result, which gave them confidence to undertake daily activities and interact with others.

Some reported changing their behaviour following a negative result, such as hugging parents when going home or socialising more within or outside households. One reported doing their shopping and seeing people straight after a negative test result as they believed they were less likely to have coronavirus. Others reported not changing their behaviour following a negative test and continuing to engage in protective behaviours.

Future testing

Participants generally intended to continue testing. Those who were at home and had not been able to take part in testing since the Christmas break intended to get tested when they returned to Durham. Some reported that they would get tested more regularly as restrictions ease. Only one had not taken part in university testing as the participant lived next to a non-university testing centre.

Participants identified factors which could decrease the likelihood of getting tested in the future. Some reported that they will have less time during examinations season and be less inclined to get tested. Some reported that they may reduce or stop testing once vaccinated.

DISCUSSION

Participants' experiences of taking part in the testing programme were mostly positive. The process was characterised as easy and efficient, with many struggling to identify potential improvements. A number of facilitators motivate students to get tested, which resonates with wider research on university testing.[9 10 16] Protecting oneself and others was key, often accompanied by positive beliefs about the effectiveness of testing. Motivation for testing was influenced by others, particularly housemates who were reportedly encouraging if they got tested themselves, but discouraging if they were concerned about self-isolation. Participants believed that students who do not get tested have more negative beliefs about its accuracy and effectiveness, as well as concerns about the implications of testing positive. There was a perception that taking part in testing will lead to the easing of restrictions and access privileges, partly reinforced by communications in some colleges. This may have adverse consequences if it does not occur, such as reducing the legitimacy of university guidance and communications.

Receiving a negative test result was perceived as reassuring. Some said it increased confidence in going about their daily lives or socialising more than they would otherwise. Negative results are reportedly giving false reassurance to some who believe they reduce their likelihood of infectiousness, which could be problematic for transmission. It is best to treat LFTs as a 'red light' rather than a 'green light' test, whereby people adapt their behaviour after a positive test but not a negative test.[17]

Strengths and weaknesses of the study

These detailed insights can inform improvements to Durham University's testing programme which has the potential to improve testing uptake and limit the spread of coronavirus within the university population and among the general public in Durham. The study provides a useful point of reference for future research that seeks to investigate the barriers and facilitators to testing in a specific setting. Moreover, the findings from this work may be transferrable to wider university, community and workplace testing programmes that are contextually similar.

Participants were recruited after having taken part in an online survey on their testing experience and were therefore willing to engage with university communications and initiatives. All participants had taken part in some form of coronavirus testing and were favourable to it. They were able to provide insights on the motivations and experiences of those who were reticent to testing, although this is not first-hand data. Therefore, the findings from this work may not provide an exhaustive account of the factors that influence the decision not to engage in asymptomatic testing, particularly among those who have not previously been involved in testing. Gathering qualitative insights from non-testers is needed to further understand motivations and beliefs about testing.

Implications

Participant suggestions to improve uptake as well as barriers and facilitators to testing informed recommendations for improving the testing programme. While some of which were specific to Durham University, others offer solutions that may be transferrable to other settings and are discussed in the context of the existing literature.

Communications

Communications could be improved to address several barriers to testing. There were varied opinions on the availability and amount of information about the testing programme. Thus, testing communications must remain concise, easy to read and consistent to maximise information remembered and prevent disengagement. Testing reminders should be sent close to times when students are most likely to get a test[11] and alternative communication channels to emails could be explored, particularly during

term time when students are likely to receive several emails a day. Text messages have been evidenced as an effective nudge for engaging undergraduate students with university communications and therefore may be a worthwhile method for delivering testing reminders.[18 19]

Participants reported that some students were unaware of the purpose and accuracy of testing indicating that university-wide messaging could be refined to better communicate the benefits of testing. This could be a useful opportunity to promote the programme as a collective effort to keep others safe as this was a key motivation to test in this study and elsewhere.[20] Testing invitation messages could remind students that the testing programme is designed to increase safety, which could also be reinforced in testing centre exit routes or test result messages by way of thanking people for contributing to the safety of the university and the surrounding locality.

Communications could also be harnessed to address student concerns about testing positive and the implications of self-isolation. Colleges and departments should adopt a unified approach to providing detailed and transparent information about how and where students can access support, both before they test as well as when receiving results.

This research presents important findings on the power of social influence on student testing behaviours and provides novel insight on the conflict that may arise between housemates, especially in university halls. As a result, social media communications could be drawn on to present testing behaviour as a social norm, sharing pictures of students testing and updates on weekly testing numbers/targets. However, caution should be taken to ensure that these measures do not elicit a boomerang effect whereby existing testers no longer feel inclined to test as a result of the perception that others will serve as a proxy measure of infection.[21]

Testing to access

Some students reported that the requirement of a negative test result to enter premises or access events would increase motivations to test, underlining the importance of making tests easily accessible and convenient if negative results continue to be required to access events. Where this is the case, the reason must be justified and well communicated as survey data suggest there is less acceptance of COVID-19 certification in domestic settings where risk is low and nearly half of those aged 18–24 years are against the introduction of requiring vaccine passports to access university campuses.[22] Narratives surrounding testing for privileges should be approached with caution as in some studies the provision of incentives to increase vaccine uptake has been found to have potentially adverse consequences.[23 24 23 24]

Testing environment

The findings also suggest that the testing environment could be adapted to facilitate uptake. Drop-in testing clinics could be made available to remove the need to book an appointment, capacity permitting. Alternatively, the availability of same-day bookings would be preferable so that students can arrange testing around their personal responsibilities, and the booking system should be easily navigated to accommodate this.

Additionally, the testing programme should remain responsive to changes in testing demand to maintain the convenience of testing. Test site capacity and locations should be routinely evaluated to ensure testing is largely accessible and that transmission risk remains low. As students return to campus, test sites could be provided close to teaching departments and should be well signposted with entrances and queue areas clearly marked.

Behaviour

Finally, the findings also suggested that more could be done to sustain appropriate responses to test results and maintain future testing behaviours. Students often felt more confident and relaxed after receiving a negative result, which meant some socialised more. Test result messages should communicate the residual risk of infection inherent in a negative test result and remind individuals of the importance of continuing to adhere to guidelines and engage in protective behaviours.[25] Importantly, some students noted that they or others may be less motivated to test during busy examination periods or after being vaccinated. Testing reminders should be sent during these busier periods and testing made as easy as possible. The benefits of testing after vaccination should also be communicated, emphasising that vaccination does not eliminate the risk of transmitting the virus to others.[26]

Unanswered questions and future research

The testing and vaccination landscape has changed dramatically since the period of national lockdown in which this study was conducted. Shortly after the interviews took place, LFTs became available to all UK adults on a twice weekly basis, allowing individuals to conduct tests in their home rather than visiting a test centre,[5] and by November 2021, nearly 80% of the population aged 12 and over had been double vaccinated.[27] This may have reduced student engagement with the testing programme because of the relative convenience of home tests and lower perceptions of infection risk following vaccination. This means that ongoing evaluations to maintain engagement in the testing programme will be needed as safety measures change. However, this study offers important insights into the context of student lifestyles such as the role of social influences, particularly in university halls and the changing nature of student timetables which would be worth considering in future research evaluating COVID-19 behaviours.

Twitter Eleonore Batteux @E_Batteux and Camila Caiado @CamilaCSCaiado

Acknowledgements The authors thank Durham University students who took part in the survey and the qualitative interviews, as well as colleagues at Durham University who helped facilitate this service evaluation.

Contributors LFJ, CC, JR and DW initiated the study. LFJ, EB and SB designed the study. LFJ, EB, SB, JKB, JT and DW completed the data collection. LFJ, EB, SB, JKB and JT analysed the data. LFJ, EB and SB drafted the manuscript. All authors contributed to, and approved, the final manuscript. LFJ and EB are the guarantors of the study. All authors have had access to the data and can take responsibility for the integrity of the data and the accuracy of the data analysis.

Funding The study was funded by Public Health England, where the funders are separate from the research team. All authors at the UK Health Security Agency (previously Public Health England) completed the study as part of their roles at Public Health England.

Competing interests All authors have completed the Unified Competing Interest form (available on request from the corresponding author) and declare: DW's time on this project was supported by the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emergency Preparedness and Response, a partnership between Public Health England, King's College London and the University of East Anglia, and the NIHR HPRU in Behavioural Science and Evaluation, a partnership between Public Health England and the University of Bristol.

Patient consent for publication Not required.

Ethics approval This study involves human participants and was reviewed and approved by Public Health England's Research Ethics and Governance Group (NR0261). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement No data are available. The data cannot be shared given that the transcripts of the qualitative interviews contain potentially identifiable contextual information despite the removal of personal identifiers (eg, names, locations, etc). No additional data available.

ORCID iDs
Leah Ffion Jones http://orcid.org/0000-0002-0448-3471
Stefanie Bonfield http://orcid.org/0000-0001-7513-2575

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Durham University Students' Qualitative Interview Guide

Behavioural Science and Insights Unit (BSIU)[1]

1. **Very briefly, tell me a little bit about yourself.**

REQUIRED: Gender? Undergrad or postgrad? Which college? Did you take part in the university testing programme?

PROMPT: What are you studying and which year are you in? What is your living situation – are you at home or university right now?

2. **Tell me about any experiences you have of being tested at University.**

PROMPT: How did you find out about lateral flow (rapid) testing?

PROMPT: Was it easy it for you to get tested at University?

PROMPT: Was it pleasant/unpleasant?

If NOT been tested, skip to question 4

3. **What motivated you to get tested at University?**

PROMPT: Were you worried about contracting Covid-19 or passing it onto others?

PROMPT: Did you think it was likely/possible that you had Covid-19?

PROMPT: Were there any incentives to get tested (food, drink, prize)?

If has been tested, skip to question 5

4. **If no experience, why not?**

PROMPT: Did you know how you could get one/how to do it?

PROMPT: Did you want to get tested?

5. **Tell me about any difficulties there were for you to get tested when you were at University.**

PROMPT: Was it convenient? (location, booking slots/allocated slots etc)

PROMPT: Were you worried about the impact of a positive test? (financial, not wanting to isolate, impact on social life)

6. **What did people around you think about testing?**

PROMPT: What did your housemates think about testing? Did they get tested?

PROMPT: What did your family and friends think? Did they think you should get tested?

If has NOT been tested, skip to questions 9 and 10

7. **What happened after you received the test result?**

PROMPT: How did you feel? What did you do?

PROMPT: Did you trust the result?

PROMPT: Did you think differently about the possibility of infecting others?

8. **How did the test result influence your behaviour, if at all?**

PROMPT: i.e. social distancing, hand washing, socialising, meeting others etc.

If has been tested, skip to question 11

9. **If you had been tested, how do you think you would have reacted?**

PROMPT: Would you have trusted the result?

PROMPT: Would you have thought differently about the possibility of infecting others?

10. **To what extent would the test result have influenced your behaviour, if at all?**

PROMPT: I.e. social distancing, hand washing, socialising, meeting others etc.

11. **How important do you think it is to get tested?**

PROMPT: For you personally, and for the wider population.

PROMPT: What do you think the impact will be of getting tested? (Transmission, infection rates, mental health and wellbeing, financial implications etc.)

PROMPT: Do you think it is effective to reduce the impact of COVID-19 on yourself, and on others?

PROMPT: Have your views on this changed at any point, for example depending on whether you are at university or home?

12. **How likely are you to get tested in future?**

PROMPT: Is it something that you would want to do?

13. **If you did want to get tested, what would make it easier to do so in the future?**

PROMPT: (location, others getting tested, time, reminders?)

14. **Is there anything else you would like to add?**

PROMPT: Anything about testing that I haven't asked you about?

Protocol: Durham University students' experiences of asymptomatic Covid-19 testing: A qualitative study

Introduction

Durham University offered mass testing on a voluntary basis to all its students and staff from 24th November to 16th December with a view to enabling people to undertake two tests, seven days apart before travelling during the Christmas vacation. 10,523 tests were taken by students, of which 6,485 represent individual students tested. Durham University have been doing a service evaluation of this programme, with some aspects in collaboration with PHE's COVID-19 Behavioural Science and Insights Unit.

PHE have previously co-designed an online survey with Durham University, hosted by them for their students and staff, to understand barriers and facilitators to testing. The next step to evaluate this testing programme is to conduct in-depth qualitative interviews with Durham University students to understand the barriers and facilitators to testing, their behaviours following a test and their attitudes towards testing. This study is conducted in collaboration with Durham University who will use it as part of their service evaluation.

This work will also inform current and future testing programmes with the aim of increasing testing uptake, which is beneficial for infection control. To do so, we need to understand the barriers and facilitators to testing and any unintended consequences arising from testing programmes. Indeed, surveys have shown that although a high proportion of people intend to get tested if they develop symptoms, a much lower proportion actually do (Covid-19 Social Study, 2021). There are also concerns that those who do get tested and receive a negative test change their behaviour as a result and are less likely to follow coronavirus rules and regulations. This is particularly problematic for lateral flow testing where false negatives are prevalent.

Aims

The aim of this work is to understand students' attitudes and behaviours towards the Durham University testing programme.

Methods

Design

Qualitative remote interviews with Durham University students.

Data Collection

Up to 30 interviews will be conducted remotely using Microsoft Teams. Interviews will be audio recorded and transcribed verbatim.

Participants

We will aim to recruit 30 students who indicated in a previous online survey that they would be happy to take part in a follow up interview.

Interview schedule

The interview schedule will be loosely based on behavioural frameworks such as the COM-B, Protection Motivation Theory and the Extended Parallel Process Model. Topics for discussion will include:

- Attitudes towards testing
- Barriers and facilitators to getting tested
- Subsequent behaviours prior to and following a test
- Behavioural intentions
- Understanding of test results

The schedule will be used flexibly and may be adapted throughout data collection to account for new topics of interest raised during the discussions.

Recruitment

PHE have previously co-designed an online survey with Durham university, hosted by the University for their students and staff, to understand barriers and facilitators to testing. Students were asked in the online survey whether they would be willing to take part in a follow up interview. 600 participants responded to say that they would be willing to take part in a follow up interview. As this data belongs to Durham University, they will be emailing the students to recruit them to this study. Students will be directed in their recruitment email to contact a member of the BSIU team to organise a suitable time for interview.

Data analysis

A rapid thematic analysis of key themes, using QSR NVivo.

Data handling

Audio files, information forms and other forms of identifiable information will be stored on secure PHE servers and will not be shared outside of the working group, in line with GDPR regulations. Audio files will be deleted once they have been transcribed, and interview transcripts will be anonymised to remove any identifiable information and will be stored on secure PHE servers.