WOOLF INSTITUTE

Transmission and Trust:

The Impact of Covid-19 on British Jewish and British Muslim Communities

About the Woolf Institute

The Woolf Institute was founded by Dr Edward Kessler MBE and Revd Professor Martin Forward in 1998. Their aim was to provide an academic framework and space in which people could tackle issues of religious difference constructively. Dr Esther-Miriam Wagner became the Institute's Executive Director in 2021.

Beginning as the Centre for Jewish-Christian Relations, the Institute later expanded to include the Centre for the Study of Muslim-Jewish Relations – the first centre in Europe dedicated to fostering a better understanding of relations between Muslim and Jews – and the Centre for Policy and Public Education. In 2010, these Centres were amalgamated under the designation "Woolf Institute", in honour of Harry, Lord Woolf, former Lord Chief Justice of England and Wales.

The Woolf Institute is internationally recognised as a global leader in the academic study of relations between Jewish, Christian and Muslim faith communities. The Institute uses its research and experience to educate and to foster greater understanding between people of different faiths and none. It is focused on outreach into society by providing practical tools and consultancy to improve relationships, working with interfaith practitioners and professionals, for example, in schools, the NHS, the Foreign Office and the Armed Forces. Through these three core functions – academic study, education and practical outreach - the Woolf Institute seeks to encourage discussion and engagement to overcome prejudice and intolerance.

About the authors

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He has a decade of experience conducting quantitative and qualitative social science research with work published in leading international academic journals and broadcast and news media including the BBC TV and Radio, The Times and The Guardian.

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Foreword

The impact of Covid-19 on religion and belief occasionally makes the headlines but, until now, there has been little data-driven research comparing its impact on minority faith communities as well as their responses. *Trust and Transmission* seeks to fill this gap, with a focus on British Jews and Muslims.

In 2021, the Woolf Institute undertook research, including a national survey, on Covid infection rates, compliance and rule-breaking, media representations and levels of trust. Led by Dr Julian Hargreaves, Director of Research, and ably supported by Survation, this report gives the reader an insight to what was actually happening in the Jewish and Muslim communities – in their own words, as it were – rather than relying on some of the stereotypes that sometimes populate the media, especially social media.

This report is, for the most part, a good news story and identifies higher levels of testing among British Muslim communities, as well as higher levels of trust in official guidance among Jews, than the general population. Interestingly, trust among both faith communities in the information provided by the UK Government and the NHS was greater than trust towards their own religious leaders. *Trust and Transmission* provides granularity, as well as recommendations, both of which will be helpful when responding to future waves of Covid-19 and also in preparation for possible new pandemics.

The Woolf Institute has been generous in its support but we would also like to acknowledge the financial support of the Laing Family Trusts, the Randeree Charitable Trust and the Spalding Trust.

During a 12-month period, we have been encouraged by the extent of interest *Transmission and Trust* has generated, not only among the Jewish and Muslim communities but also among all faith communities. In our view, it is essential to understand the role that religion and belief play in UK so that national and local policies can effectively help sustain our faith communities and consequently, each faith community is better able to contribute to a flourishing society. It is a two-way process.

This is an important report and I hope its findings will be widely considered across the political spectrum by policy makers, government officials (especially in the Department of Health and Social Care), the NHS, and also by religious leaders and the wider public. I commend *Trust and Transmission* to you.

Dr Edward Kessler MBE,
Founder President, Woolf Institute

Introduction

We all know the Covid-19 story. Its plotlines are only too familiar: the challenges, the disruptions and the unhappiness it brought. We are the Covid-watchers with first-hand knowledge of the virus and its effect on our family lives, workplaces and schools. We have become scholars of the pandemic – albeit with differing levels of aptitude and willingness. Some of us learnt the Greek alphabet from a chief medical officer: Alpha, Beta, Gamma, Delta and now Omicron variants. (Next slide please.) For some of us, it was all Greek.

We have witnessed the economic impacts of Covid-19: a third of a trillion pounds (and counting) set aside by the UK Government to secure wages, to write off business and council debt, to procure protective equipment, and to roll-out a national vaccination programme.[1] But Covid-19 incurred emotional costs too. Collectively, we have felt the pain of families cleaved, friendships put on hold and loved ones lost.

During the first months of 2020, as an outbreak turned into a pandemic and a pandemic turned into a crisis, we saw Covid-19 first disrupt the everyday and then, in time, become it. As the year progressed, and with mixed emotions, we developed into a nation of deft Zoomers, homeschoolers, wonky bakers and boxset addicts. Since then, some have looked at themselves and those around them and begun philosophical conversations on the nature of society and our roles in shaping it. Many have reconsidered priorities and questioned lifestyle norms. As domestic and office spaces merged, many sought to rebalance homelife and work, or to re-evaluate both. Cornwall replaced London as the most searched for location on a leading property website.[2] Journalists reported economic inactivity among young people despite the availability of work.[3] Similarly, an increase in informal volunteering in 2020 and 2021 suggested a turn towards the local with a renewed sense of neighbourliness: a kinship rekindled.[4]

For those of us from religious backgrounds, or with an interest in faith communities, the pandemic has afforded us an invaluable opportunity to pause and take stock. The continued efforts of faith leaders to support their communities, and others, have allowed us to reflect on the important role of such people within our society. Less positive media accounts of rule-breaking within minority faith communities have reminded us of the tensions that can exist between faith groups and the country at large. We might ask, did Covid-19 expose fissures in British society, fault lines defined sometimes by religion? Or did our nations' reinvigorated community spirit and localism depend, at least in part, on the values found within religious teaching and practice?

1 Brien, P. and Keep, M. (2021). Public spending during the Covid-19 pandemic: Commons Library research briefing, 7 December 2021. London: House of Commons Library.

2 Peachey, K. (2021). How Covid has changed where we want to live. BBC News, [online] 19 March 2021. Available at: https://www.bbc.co.uk/news/business-56359865 [Accessed on 17 January 2022].

3 Christian, A. (2021). The Great Resignation is here and no one is prepared. Wired, [online] 27 August 2021. Available at: https://www.wired.co.uk/article/great-resignation-quit-job [Accessed on 17 January 2022].

4 Department for Digital, Culture, Media and Sport (2021). Community Life Survey 2020/21. Available at: https://www.gov.uk/government/statistics/community-life-survey-202021 [Accessed on 17 January 2022] See also, Department for Digital, Culture, Media and Sport (2021). New Government survey results underline community spirit generated during pandemic. [online]

Available at: https://www.gov.uk/government/news/new-government-survey-results-underline-community-spirit-generated-during-pandemic [Accessed on 17 January 2022].

Since early 2020, through its research and public education work, the Woolf Institute has joined conversations and debates on Covid-19 and faith communities with academic research, podcasts and short films. Its work has explored the impact of Covid-19 on British faith communities and does so again with the *Transmission and Trust* project.

Transmission and Trust: The Impact of Covid-19 on British Jewish and British Muslim Communities explores issues related to Covid-19 and two significant minority groups in the UK. In April 2021, the Woolf Institute conducted a nationally representative survey in partnership with Survation – a British leader in polling and market research. With them, we asked questions concerning testing, symptoms, self-isolation and vaccination. Is the willingness to self-isolate and receive a vaccine higher in British Jewish or British Muslim communities, and how do both compare to the general population?

Our survey asked questions about levels of trust in various sources of public health information: from family, friends and local religious leaders, to news and social media, to the NHS and local authorities. Are faith communities less likely to heed official public health advice and more likely to follow guidance from a local imam or rabbi?

Many readers will have seen or read media reports concerning ruling-breaking during the pandemic within both Jewish and Muslim communities. To what extent does statistical evidence from the UK support or challenge these accounts? Our survey included questions on adherence to Covid-19 rules and restrictions.

Like all the best social science projects, some of our findings simply confirm things already known. For example, we found further statistical evidence for disproportionate infection rates among minority communities in the UK. Some findings echo previous studies but add a quantitative dimension to our understanding of Covid-19 within faith communities, helping us to move beyond the anecdotal, rhetorical and polemical. Other more novel findings challenge negative media accounts of faith communities during the pandemic, particularly those around the purported lack of adherence to public health rules. Other findings help us disrupt stereotypes of faith communities emanating from academics and activists who have asserted, and perhaps exaggerated, the level of distrust within faith communities towards the UK Government and its public bodies. The survey work also revealed that most precious of social science commodities, a surprising, counter-intuitive revelation. Our conclusions on the levels of trust with Jewish and Muslim communities towards local religious leaders will confound some readers.

Writing in January 2022, the so-called Omicron variant of Covid-19 – thought by some experts to be a more contagious but less deadly form of the virus[5] – has disrupted an anticipated return to New Year normalcy.[6] The story of Covid-19 may be familiar, and whilst we hope to be in its third and final act, it seems the tale's ending has yet to be revealed. In the meantime, we hope the Woolf Institute's *Trust and Transmission* study will help improve our understanding of the impact of Covid-19 on British Jewish and British Muslim communities with insights useful for faith communities, the organisations that serve and support them, politicians, policymakers, researchers, educators and students alike.

5 Gallagher, J. (2021). Omicron: How worried should we be? BBC News, [online] 6 December 2021 https://www.bbc.co.uk/news/health-59418127 [Accessed 17 January 2022]

6 BBC News (2021). What are the Covid rules in England, Scotland, Wales and Northern Ireland? BBC News, [online] 4 January 2021. Available at: https://www.bbc.co.uk/news/explainers-52530518 [Accessed 17 January 2022]

Recent academic research and government reports

British ethnic minority communities

Since 2020, much of the policy-related discussion on Covid-19 and its impacts on British society has centred on British ethnic minority communities, sometimes referred to by official sources (with increasing criticism from elsewhere) as BAME groups (see, ONS 2020a; PHE 2020a; PHE 2020b). These studies provide the wider context for our study of Covid-19 within British Jewish and Muslim communities.

Evidence emerged early on in the pandemic that ethnicity, alongside gender and age, were key determinants of Covid-19 outcomes. In April 2020, one month after the beginning of the first national lockdown (BBC 2020a), data showed that 35% of admissions to intensive care for Covid-19 in England, Wales and Northern Ireland were from ethnic minority backgrounds, despite that group making up only 15% of the general UK population (The Intensive Care National Audit and Research Centre, 2020).

The Office for National Statistics linked information from death registrations to the 2011 Census and showed that the risk of death among the Black ethnic group was 1.9 times that of the White group (once factors such as age, socio-demographic characteristics and health were considered). Those from Bangladeshi and Pakistani ethnic groups were 1.8 times more likely to die from the virus (ONS 2020a).

Evidence of higher infection and mortality rates within the UK's ethnic minority communities echoed similar findings in the US: Chicago's Black ethnic population make up 30% of the city's population but made up 60% of Covid-19 fatalities in March 2020 (Bechteler et al 2020).

One explanation asserted for this difference is the higher proportion of people from minority ethnic backgrounds working in high-risk, frontline or key worker positions. A Runnymede Trust and ICM survey revealed that 34% of working people from Black ethnic backgrounds work in these roles compared to 23% of White workers (Haque 2020: 2). Other explanations for discrepant mortality rates include: the higher proportions of ethnic minorities living in overcrowded urban areas; larger, multi-generational households in relatively poor-quality housing; and greater use of public transport (PHE 2020b: 6-7). Another important reason for higher Covid-19 related fatalities is higher rates of existing health inequalities. BAME groups are more likely to have certain co-morbidities, pre-existing conditions that can lead to complications from Covid-19, such as higher levels of diabetes (PHE 2020b: 40).

Scholars have pointed to the role of "entrenched structural and institutional racism and racial discrimination" in creating higher risk among BAME people in relation to Covid-19 (Nazroo and Bécares 2021: 2). Discrimination has been shown to play a role in divergent Covid-19 outcomes among similarly positioned staff in certain work environments. For example, the British Medical Association reported that 64% of doctors from BAME backgrounds felt pressured to work in an environment with inadequate PPE provision, compared to 33% of doctors self-identifying as White (Cooper 2020). One purported consequence of discrimination faced by ethnic minorities has been an unwillingness to receive care. According to Public Health England, mistrust of health authorities has led to ethnic minorities' "reluctance to seek care on a timely basis and late presentation with disease" (PHE 2020b: 8). This has further been reflected in levels of so-called vaccine hesitancy. ONS figures released in January 2021 indicated that while 85% of White British people were likely to accept a vaccine when offered, this dropped to 69% of adults from an ethnic minority background. This included a significant difference in attitudes between Black or Black British adults compared to other ethnic minority groups. While 28% of Black or Black British adults said they

were unlikely to take the vaccine, this was 7% for White British, and 8% for Asian or Asian British (ONS 2021). These differences have been explained as a result of "negative experiences within a culturally insensitive healthcare system" (Razai et al 2021: para 7).

It has been argued that ethnic minorities are more likely to face larger negative consequences from the UK Government's policies to control the spread of Covid-19 infection. This includes less access to digital technologies for homeschooling or being less likely to receive financial support from the UK Government's furlough scheme because of higher rates of self-employment or precarious work. A survey of 2,585 adults in summer 2020 by the Runnymede Trust found that knowledge of key government economic support differed for BAME communities. Awareness of financial support from the government was at 93% for White British people compared to 61% of Bangladeshi people (Haque 2020: 12). Similarly, retired or disabled BAME women and men reported losing support from the UK Government during the pandemic at a rate of 42.5% and 48.3%, while White women and men were at much lower levels of 12.7% and 20.6% (Fawcett Society, Women's Budget Group and LSE 2020).

British Muslim communities

Discussion concerning ethnic minority communities overlaps, for obvious reasons given known characteristics, with that on British Muslim communities. It is estimated by the Muslim Council of Britain that 90% of British Muslims are from minority ethnic backgrounds (Aziz 2020: 12). Given the disproportionate impact of Covid-19 on ethnic minority communities, it is unsurprising, therefore, that British Muslim communities, when considered separately, have also been shown to have suffered high rates of infection and mortality. An ONS study of Covid-19 fatalities by religion released in June 2020 found the Muslim group to be the worst affected faith group (after adjustments for age). Muslim males were 2.5 times more likely to die from Covid-19 than males with no religion. Muslim females were 2.1 times more likely (ONS 2020b). Explanations for these discrepancies mirror those offered for minority ethnic groups. Research has linked high mortality to the increased likelihood of working in public-facing, frontline roles: 33% for male Muslim workers and 37% for female Muslim workers, compared to a national average of 22% for male workers and 26% for female workers (Hassan et al 2021b; 2).

Considering this robust evidence for higher rates of infection and fatalities among British Muslim communities in 2020, our research updates the picture of incidence of Covid-19 within British Muslim communities in 2021 and adds up to date information regarding British Jewish communities to the overall picture.

The implementation of Covid-19 related restrictions had a considerable impact on religious practice within British Muslim communities. As a member of the Somali community explained, "mosque attendance and group prayer provide emotional, spiritual and social anchoring", and its prevention in 2020 was causing "much distress in the community" (Nazroo et al 2020: 30). Concerns that infection prevention measures could require men to shave because of the need for close-fitting PPE and women to adjust the style of wearing hijab have been described as "distressing" (Hassan et al. 2021b: 7). The Muslim Council of Britain observed financial uncertainty for mosques reliant on cash donations at Friday prayers and madrasa fees, both of which decreased (MCB 2020).

On the other hand, findings from the North-West have drawn out the role of Islamic faith in mediating the anxiety and uncertainty of Covid-19. Research has highlighted beliefs that people's fate was in the hands of Allah and perceptions of Covid-19 as a test that would produce reward (Hassan et al 2021b). The same research also revealed how some aspects of Muslim communal life could create challenges to strict adherence of the rules around social distancing, in particular the tactile nature of social interaction in the Muslim community (ibid: 6). Meanwhile, there has emerged new forms of support for Islamic practice, such as the Taraweeh at Home campaign, encouraging and enabling Muslims to perform the nightly prayers during Ramadan at home (MCB 2020: 32). Scholars have also noted the positive impacts of shifting patterns of prayer from the mosque to the home (Taragin-Zeller and Kessler 2021).

Previous small-scale studies of the role and impact of religion and participation in religious communities during the pandemic prompted us to consider the impact of religiosity and attendance at mosques on shaping outcomes of Covid-19 infections. Further, our study explores attitudes and behaviours in response to the launch of the UK Government Covid-19 measures. In doing so, it contributes to ongoing discussions by offering relevant quantitative information.

Research has drawn attention to the presence of community resources within British Muslim communities for sharing public health messaging and providing support during the pandemic for both Muslim and non-Muslim people living locally. This includes the call in an open letter by the British Islamic Medical Association on 16 March 2020 for a discontinuation of congregational activities (Al-Astewani 2021). The eventual closure of mosques at the end of March 2020 was described as a highly effective form of public health messaging for British Muslim communities (Hassan et al 2021a: 5). Throughout the pandemic, media aimed at Muslim audiences – including platforms such as 5PillarsUK with over 300,000 followers on Facebook (Al-Astewani 2021) – played an important role sharing updates on Covid-19 news and public health guidance.

Scholars have described the role of faith leadership within British Muslim communities in facilitating trust in public health guidance and, in particular, encouraging the uptake of vaccination (Razai et al. 2021). For some, a lack of trust within communities can be attributed to perceptions of being blamed for outbreaks, reflected in the imposition of lockdowns on the day before Eid in September 2020 in towns across the north of England (Common Vision 2021: 22). It is in this context that faith leaders have been described as taking on the function of "trusted mediators" (ibid). Discussing vaccinations during Ramadan, *The Lancet* encouraged health professionals to share the view of the President of the Two Holy Mosques in Saudi Arabia that being vaccinated during Ramadan is permissible. Muslim leaders also encouraged the distribution of vaccines outside of fasting hours, including at mosques during nightly Ramadan prayers (Razai et al. 2021).

The apparent role of British Muslim communities and local religious leaders in communicating health advice and the purported lack of trust towards public health messaging led us to compare attitudes towards various sources of Covid-19 information. These ranged from official sources such as the UK Government, National Health Service and local authorities, to the news media, to more informal sources such as friends and family or a local religious leader.

British Jewish communities

Early on during the pandemic, it was reported that British Jewish communities were being disproportionately affected by Covid-19. The first empirical evidence for this was presented in an ONS survey on Covid-19 impacts by religion based on data from March to May 2020. The ONS reported 453 Covid-19 related deaths among the Jewish population in the UK (ONS 2020b). Data adjusted for age showed that Jewish people had lower mortality rates than Muslim people during the period, but that Jewish men were twice as likely as Christian men to die from Covid-19. Jewish women were 20% more likely than Christian women to die from Covid-19 (ibid).

For some, this was surprising given the understanding that Jewish communities tend to face fewer of the risks associated with other ethnic minority communities, particularly in relation to employment and housing (IJPR 2020a). While 39% of the total population were in the top two socio-economic categories, 53% of Jews were in these categories according to ONS data from 2019 (IJPR 2020c: 2).

However, while higher infection rates among Jewish communities – the so-called Jewish penalty – were observed in April 2020, they appeared to decrease from May 2020 onwards (Staetsky 2021). One explanation offered for the initial spike was the consequence of gatherings taking place for the Jewish holiday of Purim from 9 to 10 March 2020, days or weeks before the onset of lockdowns in countries across Western Europe. Added to this, transmission was quicker through close-knit Jewish communities compared to the general population. Data also suggest that Jewish communities in Britain were hit harder than other Western nations. This may, in part, be accounted for by the fact that two-thirds of Jews in Britain live in London, an early hotspot for the crisis. There are also broader community and social factors that increase Jewish susceptibility, such as average household size (Staetsky & Paltiel 2020: 28). British Jewish households are slightly larger than those of the general population, 2.7 people per household compared to 2.3. Orthodox Haredi households are, on average, larger still at 5.2.

Further, there is evidence that within Haredi (or Ultra-Orthodox Jewish) communities that up to 60% of people may have been infected with Covid-19 in 2020 (LSHTM 2021). However, the Institute for Jewish Policy Research argued that Orthodox communities could not have been a major factor determining disproportionate fatality rates: they tend to be younger and Covid-19 mortality in the wider Jewish population is known to be driven primarily by old age (Staetsky 2020b).

Nonetheless, scholars have investigated how British Jewish communities are positioned and respond to Covid-19 restrictions, public health advice and vaccine deployment in the UK, Israel and elsewhere. Light has been shone on the secular logic that underpins religious arguments for refusing the vaccine (Kasstan 2021), and the kinds of creative strategy needed for communicating Covid-19 restrictions to Ultra-Orthodox communities, including recognition of “the particular challenges and disruptions that public health guidelines pose for minority sensibilities and lifestyles” (Taragin-Zeller et al 2020: 670).

In light of these insights into British Orthodox Jewish communities, we developed a more complete picture of the attitudes and behaviours of wider British Jewish communities in relation to factors such as accepting a vaccine and non-compliance with Covid-19 restrictions. Our work responds to and builds upon previous similar studies by organisations such as the Institute of Jewish Policy Research and the Office for National Statistics.

British Jewish communities, and the organisations serving them, played key roles in the support offered to their members during the pandemic. The Emergency Community Fund setup by the Jewish Leadership Council and Work Avenue provided support to acutely disadvantaged Jewish families. The enduring role of the community also seems to have played a part in alleviating some mental health impacts (Graham et al. 2020). Yet one theme throughout the pandemic in the IJPR reports is the long-term consequences of lockdowns and social distancing on the way of life of the Jewish community. In March 2020, the Institute for Jewish Policy Research described how preventing the activities and habits so important to Jewish life was “shaking the Jewish community to its core” (Boyd 2020a: 1). It was argued that disruption to youth movement activities, such as tours of Israel, could have long-lasting negative consequences. Meanwhile, concerns have been raised about community organisations and the charity sector. By summer 2020, there has been a decline in the proportion of synagogue members paying full fees from 83% to 76% (Boyd 2021).

As stated, our study aims to consider these accounts of ethnic minority, Jewish and Muslim communities and to offer recent statistical data as a contribution to ongoing discussion and debate on the impacts of Covid-19.

Recent media reports

Since early 2020, British media coverage has explored the suffering of British Jewish and British Muslim communities during the Covid-19 pandemic at length and in detail. Recognition of higher infection rates and fatalities drew attention to the exceptional demands in settings such as cemeteries and hospitals. For example, the *BBC News* website covered the pressures on gravediggers at Bradford's main Muslim cemetery, describing how they worked from 6am to 10pm preparing graves in response to higher than usual deaths (BBC 2020d). Connected to this demand for funeral services was the incapacity to fulfil burial rituals. *The Guardian* reported the trauma and guilt felt by Muslims at being unable to carry out the ritualistic washing of bodies (Parveen 2020). *The Lancashire Telegraph* reported a Blackburn hospital imam's end-of-life visit to a mother who had given birth to her fifth child only days before (Khan 2021a). Similarly, *The Guardian* covered the starkness of Jewish burials early in the pandemic, describing how one 90-year-old's funeral was attended only by a rabbi and the staff of Waltham Abbey Jewish Cemetery (Sherwood and Pidd 2020). In April 2020, the number of burials carried out by the United Synagogue Burial Society tripled (ibid).

The high infection and fatality rates informed coverage of heightened health risks within religious communities. These included gatherings shortly before the UK Government's announcement of lockdowns, rule-breaking, and the influence of Covid-19 conspiracy theories. Amina Lone, director of the Social Action Research Centre, writing in *The Times*, described how many within British Muslim communities, distrustful of government, "shared theories about the pandemic, which involved 5G towers, engineered biowarfare (sic) and targeted infections" (Lone 2020). Meanwhile, concerns about gatherings prior to lockdown were followed by accounts of lockdown rule-breaking. In the case of British Muslim communities, this included coverage of a gathering of 250 worshippers at a funeral at the Jamia Ghosia Mosque in Blackburn in July 2020. *The Sun* described how people "piled in" for the funeral services at a time when there was a limit of 30, but also quoted local councillors who explained that surging cases in Blackburn were primarily due to large family sizes (Cole 2021).

The Times drew attention to the risks of celebrating the festival of Purim among British Jewish communities in March 2020 and how it "may have carried a death sentence" (Norfolk 2020). There was considerable coverage of the police break-up of a Haredi Jewish wedding with 150 guests – reported elsewhere as 400 guests - at the Yesodey Hatorah girls' school in Stamford Hill in January 2021. *The Mirror* described how "windows had been covered" to stop people seeing into the "state funded" (sic) secondary school, and how police were hunting organisers (Boyd et al. 2020). In *The Jewish Chronicle*, journalist Daniel Greenberg cited these weddings as evidence of the Haredi as "a self-indulgent sect that should be disowned by the rest of the Jewish world" (Greenberg 2021). Stories of the wedding were among many in both the Jewish and mainstream press that criticised a lack of compliance to Covid-19 restrictions among the Haredi community during the pandemic. *The Manchester Evening News* reported on what it saw as a lack of understanding of lockdown rules among Greater Manchester's Ultra-Orthodox Jewish communities stemming from limited internet usage (Mwamba 2021).

Media coverage considered the repercussions of Covid-19 restrictions on religious practice. Limits placed on community-based festivals meant profound change, and with it disappointment and dislocation. *The Evening Standard* quoted Rabbi Schapiro, a founding director of the Jewish Community Council of North London, who lamented, "the vast majority of us have sacrificed a lot"; by his count, "seven or eight different celebrations and holidays" (Baynes 2021).

There was similar coverage of the changes and cancellations to Muslim festivals. *The Mirror* quoted television presenter Adil Ray who described last-minute lockdowns before Eid al-Adha in July 2020 as being "like waking up to no Christmas" (Shadwell 2020). In the same edition, the paper criticised the UK Government's alleged scapegoating of ethnic minority communities, lambasting satirically what it interpreted as a Health Minister's explanation for the lockdown as being, in their words, "thanks to the poor, brown people who won't stay indoors" (Boniface 2020).

There was admiration for the adaptations that allowed for continuing Muslim practice: for example, the airport-style security arrangements created to protect worshippers coming to pray at a mosque in Blackburn, a British town with a sizeable Muslim population (*BBC News 2020c*). There was also reporting on the adaptation of key Jewish festivals. *The Manchester Evening News* described the pre-booked drive-in candle lighting celebrations to celebrate Hanukkah organised to replace more typical mass gatherings (Timan 2021). *The Guardian* described how blowing the Shofar, a ram's horn, would take place outdoors on Rosh Hashanah and at the end of Yom Kippur. The article quoted Jonathan Mindell, Chair of the Pinner United Synagogue, displaying humour and resilience. "We're good at adapting", he said (Sherwood 2020), "that's why we've lasted so long."

Arguably, the most dominant faith-based media narrative concerning Covid-19 was positive: the emergence and role of responsible religious leadership within British Jewish and British Muslim communities. Accounts praising faith communities focussed on prominent national figures, as well as local leaders, who worked to support good practice during the pandemic. Advice and guidance from leaders urged their communities to adhere to social distancing rules and agree to take a vaccine. *BBC News* was one of many media platforms in May 2021 to report public health advice from Imam Qari Asim for Muslims to not "drop the ball" in their celebrations of Eid (BBC 2020b). Newspapers also reported the role of mosques and their senior management in combatting vaccine hesitancy. *The Lancashire Telegraph* produced a celebratory account of the pop-up vaccination clinic at the Masjid E Saliheen, a mosque in Blackburn. The story included a quote from the mosque secretary about its role in providing for the wider community (Khan 2021b). *The Sun* quoted Home Secretary Priti Patel's account of the role of mosques in combatting "tragic religious conspiracy theories" concerning the vaccine (Cole 2021).

A similar media narrative emerged in relation to responses from British Jewish communities. There was widespread coverage of the Chief Rabbi urging British Jewish communities to celebrate safely during the Purim holiday in 2021 following its purported role in spreading infection a year earlier (George 2021). *The Times* reported that Rabbi Herschel Gluck, head of a Shomrin – a neighbourhood watch group in the Stamford Hill area of London, had urged the Haredi community to "put the brakes on" after reports of large marriage celebrations during lockdown (Burgess et al 2021). Meanwhile, *The Jewish Chronicle* reported how senior Haredi rabbis encouraged their communities to get a vaccine, after requests from local doctors to help combat misinformation (Rocker 2020).

Our research analyses the veracity of media narratives concerning British Jewish and British Muslim communities using findings from a nationally-representative survey. Our analysis scrutinises the extent to which Jewish and Muslim communities in the UK had higher incidences of Covid-19 during the pandemic. We explore the extent to which implicit narratives about the risks of religious communality and practice were supported or challenged by nationally-representative survey data. For instance, are higher levels of religiosity in British Muslim communities (e.g. more frequent mosque attendance) associated with a higher risk of catching Covid-19? Given the negative accounts of Orthodox communities, we ask, are higher levels of religiosity among British Jewish communities (e.g. how religious a person feels) associated with not following measures used by the UK Government to control the spread of Covid-19? The research design enabled comparative work. We ask, to what extent does the situation for British Jewish and British Muslim communities compare to religious people from the general population (e.g. British Christians)? Were high-profile incidences of rule-breaking among the Haredi community indicative of their attitudes towards control measures and trust in health authorities? Were patterns of behaviour among the Ultra-Orthodox vastly dissimilar to the wider Jewish population, as suggested in numerous media accounts?

Finally, a major theme of media coverage has been the role of religious leadership in advising, and sometimes pressuring, their respective communities to follow public health advice. Our research tests two assumptions. First, that there is low trust in Covid-19 information from official (perhaps, more secular) sources such as the UK Government, National Health Service and local authorities among minority faith groups such as British Jewish and British Muslim communities. Second, that religious leadership is considered as a trusted source of Covid-19 information, or even as a more trusted source than official or more secular sources. What do the data tell us about faith leadership and their role in delivering public health guidance to Jewish and Muslim communities in the UK?

Methods

Nationally representative survey data were collected by Survation using a random sample. Data from the UK-wide and Jewish samples were collected between 14 and 19 April 2021. Data from the Muslim sample were collected between 16 and 22 April 2021. The study sampled 1,053 respondents for the UK-wide dataset, 404 respondents who self-described as Jewish and 400 respondents who self-described as Muslim. All respondents were 18 years old or older and living in the UK. The project team surveyed the UK-wide sample using an online poll. The Jewish and Muslim samples were surveyed by telephone. Data from the UK-wide sample were weighted by age, sex, region and highest level of educational qualification. The Jewish and Muslim samples were weighted by age, sex and region. Survation derived and applied weights from Office for National Statistics data.

Because only a sample of the full population was interviewed, all results are subject to margin of error, meaning that not all differences are statistically significant. For example, in a question where 50% (the worst case scenario as far as margin of error is concerned) gave a particular answer, given the sample of 1,053 it is 95% certain that the true value will fall within the range of 3.5% from the sample result. Subsamples from the cross-breaks will be subject to a higher margin of error, and conclusions drawn from cross-breaks with very small sub-samples should be treated with caution. As is the norm in many UK Government ministries and departments, we report findings only where the respective cell count is 30 or higher.

Due to the sensitive nature of the research topic and questions, and the typical cell counts from the analysis, we decided to adopt a more cautious approach to reporting “real” differences between the groups. Accordingly, we took the decision to report statistical significance at the 1% and 0.1% levels (rather than at the 5%, 1% and 0.1% levels, as is more usual for this type of analysis). On this basis, we treated significance at the 1% and 0.1% levels as being more conclusive, and at the 5% as more indicative. This approach was applied to all questions except those concerning trust, where the less sensitive questions and the emergent findings suggested a more conventional approach and the use of 5%, 1% and 0.1% significance thresholds.

Statistical tests

Two-sample test for the equality of proportions

We used a variety of bivariate and multivariate methods to analyse the data. First, we used a standard two-sample test for the equality of proportions, with margins of error adjusted for design effects to determine whether pairwise differences in proportions for a given response from the UK-wide, Jewish and Muslim respondents were statistically significant.

$$r_1 = \left\{ p_1 - \left(\left(\frac{(z(\alpha))\left(\sqrt{p_1(1-p_1)}\right)}{\sqrt{n_1}} \right) \left(\sqrt{deff_1}\right) \right), p_1 + \left(\left(\frac{(z(\alpha))\left(\sqrt{p_1(1-p_1)}\right)}{\sqrt{n_1}} \right) \left(\sqrt{deff_1}\right) \right) \right\}$$

$$r_2 = \left\{ p_2 - \left(\left(\frac{(z(\alpha))\left(\sqrt{p_2(1-p_2)}\right)}{\sqrt{n_2}} \right) \left(\sqrt{deff_2}\right) \right), p_2 + \left(\left(\frac{(z(\alpha))\left(\sqrt{p_2(1-p_2)}\right)}{\sqrt{n_2}} \right) \left(\sqrt{deff_2}\right) \right) \right\}$$

$$H_1, iff\ r_1 \cap r_2 = \emptyset$$

Where:

r_1 is the range of the upper and lower bounds of p_1

p_1 is the proportion of a response option for a survey question within a given sample

n_1 is the sample size

$deff_1$ is the design effect (we used: 1.32 for the UK-wide group, 1.19 for the Jewish group, 1.55 for the Muslim group)

z is the z-value

a is the relevant confidence interval (we used: 5%, 1% and 0.1% confidence levels)

H_1 is the rejection of the null hypothesis H0 (i.e., there is no overlap between the ranges, denoting a significant difference between the proportions)

Each central estimate has upper and lower bounds based on the margin of error derived from the relevant central estimate, sample size, design effect, and confidence level. For a question k response option a, if the lower bound for the sample 1 estimate is greater than upper bound for the sample 2 estimate, or the lower bound in 2 greater than the upper in 1, then there is no overlap in the intervals at the given confidence level, which indicates statistically significant difference in proportions at that confidence level.

Pearson's chi-square test

Second, we used a standard Pearson's chi-square test to test the relationship between selected categorical variables (Pearson 1900; Fisher 1922):

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Where:

x^2 is the chi-square statistic

O is the observed frequencies

E is the expected frequencies

a is the relevant confidence interval (we used the 5% confidence level)

Cramér's V test

Third, we used a standard Cramér's V test to test the strength (i.e. effect size) of any statistically significant relationships:

$$V = \sqrt{\frac{\frac{\chi^2}{n}}{\min(k-1, r-1)}}$$

Where:

x^2 is the chi-square statistic

n is total number of observations

k is the number of columns

r is the number of rows

The reporting of effect sizes (as being small, medium or large) applied conventions established by Cohen (2008).
There are as follows:

	Small	Medium	Large
Cramér's V, k = 2*	0.10 – < 0.30	0.30 – < 0.50	≥ 0.50
Cramér's V, k = 3*	0.07 – < 0.21	0.21 – < 0.35	≥ 0.35
Cramér's V, k = 4*	0.06 – < 0.17	0.17 – < 0.29	≥ 0.29
Cramér's V, k = 5*	0.50 – < 0.15	0.15 – < 0.25	≥ 0.25
Cramér's V, k = 6*	0.05 – < 0.13	0.13 – < 0.22	≥ 0.22

Limitations

There are several limitations to our data, methods and findings. These include but are not limited to: the size of the samples; the cross-sectional nature of the study; and the limited number of survey questions used in the study.

Whilst we are extremely grateful to our funders for giving us the opportunity to undertake this research project, decisions made about our allocation of resources meant that the sample sizes for the main groups of interest were smaller than in previous similar studies by the authors (for example, Hargreaves and Staetsky 2019). However, at nearly 2,000 overall, the number of respondents in our survey was not insignificant. Moreover, our recruitment and data collection methods ensured that we had the ability to report nationally representative findings across the Jewish, Muslim and UK-wide groups. Larger sample sizes would have allowed for the use of multiple subgroups within each sample and for multivariate modelling (e.g. binary logistic regression models). Instead, we relied on more conclusive significance testing and more indicative tests of association.

We conducted our survey over seven days in April 2021 thereby affording a cross-sectional snapshot of experiences and attitudes at a given moment in time. Whilst the data provide a robust baseline measure, the study did not track, for example, shifts in attitudes over time (i.e. it was not deigned to be a longitudinal study).

Similarly, and is invariably the case with cross-sectional studies, our consideration of Covid-19-related issues arising after our data collection would have further completed our picture. For example, the survey did not consider booster jabs, so-called anti-vaxxers (i.e. anti-vaccination activists) and the recent allegations of senior members of the UK Government breaking Covid-19 rules in 2020. Nor did it address the effects of the latter on various forms of trust and adherence to public health advice on Covid-19. For now, these topics represent future lines of enquiry and future findings that may be compared to ours.

Findings

Testing for Covid-19

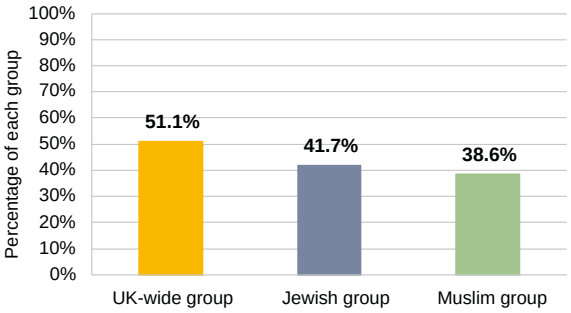
Muslim people are more likely to have tested positive for coronavirus than Jewish people and the general population (but are also more likely to have been tested than the general population).

Comparisons between the UK-wide, Jewish and Muslim groups

Due to limited resources, we combined questions for being tested and testing results (i.e. positive or negative) into one survey question. Muslim respondents were more likely to have been tested than the UK-wide group (on the basis that they were less likely to have been untested: 38.6% compared to 51.1% - see Fig. 1 and Table 1).[1]

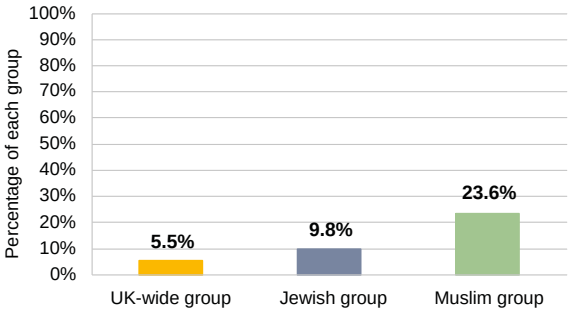
Among all participants (i.e. both tested and untested), Muslim respondents were significantly more likely to have tested positive than the UK-wide group (23.6% compared to 5.5%)[2] and Jewish respondents (23.6% compared to 9.8% - see Fig. 2 and Table 1).[3]

Fig. 1. Respondents who reported not being tested for Covid-19



Source: Survation and Woolf Institute 2021

Fig. 2. Respondents who reported testing positive for Covid-19



Source: Survation and Woolf Institute 2021

Indicative findings within the groups[4]

Further analysis revealed associations between various demographic and socio-economic factors gathered by the survey and whether respondents had been tested for coronavirus and whether they tested positive or negative (see Table 8).[5]

For the UK-wide group, age, religion (being Buddhist, Christian, Hindu, etc.), Christian denomination (being Anglican, Baptist, Catholic, etc.) and ethnicity (being Arab, Asian, Black, etc.) were all found to be associated with testing and with negative or positive test results, although effect sizes were relatively small. It would appear that a majority of older respondents (aged 65 years or older) were likely to be untested, whereas a majority of younger respondents had been tested with a negative result.[7]

For the Muslim group, region had a stronger association with testing and test results (we observed medium-sized effect sizes). Our data suggest Muslims in the North and the Midlands were less likely to have been tested than those in London, although differences were relatively small.[8]

Within this group, one of our measures of religiosity – how often respondents visit a mosque – was associated with testing although, again, effect sizes and differences were small. Our data suggest those never attending a mosque were more likely to be tested than frequent mosque-goers.[9]

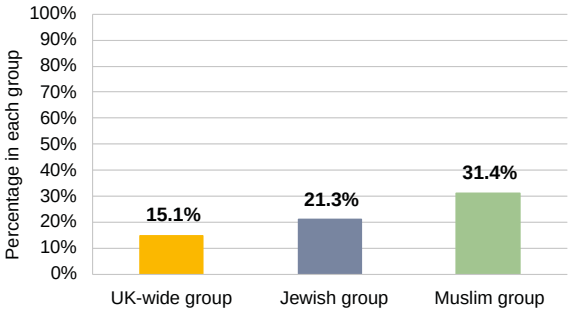
Covid-19 symptoms

Muslim people are more likely to have experienced coronavirus symptoms than Jewish people and the general population.

Comparisons between the UK-wide, Jewish and Muslim groups

As we might expect given the previous findings, Muslim respondents were over twice as likely as the general population to have had coronavirus symptoms (31.4% compared to 15.1% - see Fig. 3 and Table 2).[10] The data indicate a statistically significant difference between the Muslim and Jewish groups.[11] When combined, these findings support evidence from the ONS that British Muslims were the faith group most likely to have had Covid-19 (ONS 2020b). They also support previous research showing that the Jewish penalty of 2020 (ibid.) (i.e. the disproportionate rates of infection suffered by the group at that time) had dissipated by mid-2021. It should be noted that, despite these discrepancies, for all three groups (the UK-wide, Jewish and Muslim groups), a majority of respondents reported having had no symptoms at all.

Fig. 3. Respondents who reported having had Covid-19 symptoms



Source: Survation and Woolf Institute 2021

Indicative findings within the groups

We observed an association between age and symptoms for UK-wide and Jewish groups although effects sizes were small. Regardless of testing, our data suggest younger respondents in the UK-wide and Jewish groups were more likely to have had symptoms.[12]

We found religiosity to be associated with symptoms for Jewish and Muslim respondents although, again, effect sizes were small (see Table 8). There appears to be a relationship between having symptoms and being more religious although analysis with larger samples is required to move us beyond the merely indicative.[13]

Self-isolation

Jewish and Muslim respondents are more likely than the general population to have self-isolated during the pandemic.

Comparisons between the UK-wide, Jewish and Muslim groups

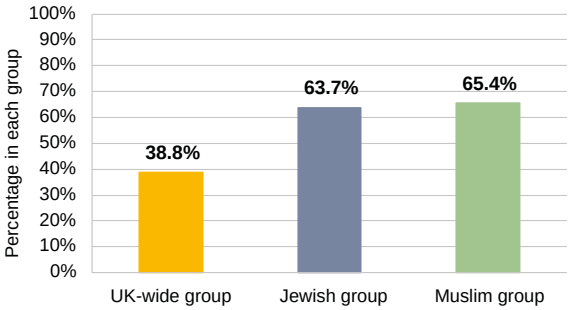
Both Jewish and Muslim respondents were more likely than those from the UK-wide group to have self-isolated at some point during the pandemic (63.7% and 65.4% respectively, compared to 38.8% – see Fig. 4 and Table 3).[14]

This provides compelling evidence to counter any assertions that these groups were less willing than the general population to adhere to public health guidance.

Indicative findings within the groups

Various factors were observed to be associated with self-isolating: for Christians within the UK-wide group, denomination; for the UK-wide group as a whole, age and religiosity; for the Jewish group, age; and for the Muslim group, Islamic denomination and religiosity (see Table 8).[15] In each case, effect sizes were small.

Fig. 4. Respondents who reported having self-isolated during the pandemic



Source: Survation and Woolf Institute 2021

Trust

We found high levels of trust towards the NHS and the UK Government within British Jewish and Muslim communities, and rather less towards local religious leaders.

Within Jewish and Muslim communities, levels of trust in the NHS and UK Government as sources of Covid-19 information were higher than in the general population.

Within Jewish and Muslim communities, levels of trust in local religious leaders as sources of Covid-19 information were lower than for more official sources such as the NHS.

Comparisons between the UK-wide, Jewish and Muslim groups

We compared levels of trust in various sources of Covid-19 information: the UK Government; friends and family; the news media; the National Health Service; a local, county or regional authority; and local religious leaders (see Figs. 5 to 10 and Table 4).

Respondents were most likely to report high levels of trust in the NHS: recognised by participants as the leading authority for Covid-19 information.[16] At least three quarters from each group did so. Jewish respondents were the group most likely to report high levels of trust in the NHS; higher than both UK-wide and Muslim groups (90.9%, 76.8% and 79.1% respectively – see Fig. 5 and Table 4).[17]

A majority of Jewish and Muslim respondents reported high levels of trust in the UK Government compared to less than half from the general population (55.9% and 68.6% respectively, compared to 43.6% – see Fig. 6 and Table 4).[18] A broadly similar number reported high levels of trust in more local forms of government.

Overall, Jewish respondents had higher levels of trust in their local, county or regional authority than the general population (57.6% and 48.5% respectively – see Fig. 7 and Table 4).[19]

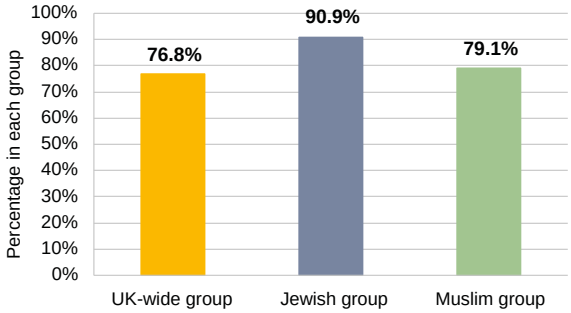
Despite media accounts of low levels of trust in official sources of Covid-19 information (sometimes implied through reports of Covid-19 rule-breaking or a lack of adherence to public health guidance), Jewish and Muslim communities appear to have relatively high levels of trust in the UK Government, NHS and local authorities compared to the UK-wide group. Moreover, in some cases, Jewish respondents had more trust than found elsewhere in our data (see Figs. 5 to 7 and Table 4).[20]

Most respondents reported low levels of trust in the news media. That said, the Jewish group appeared slightly more trusting than the general population with more reporting high levels of trust (45.8% compared to 32.7% – see Fig. 8 and Table 4).

Trust in friends and family was similar across the UK-wide groups, Jewish and Muslim groups: a majority in each reported high levels (see Fig. 9 and Table 4).

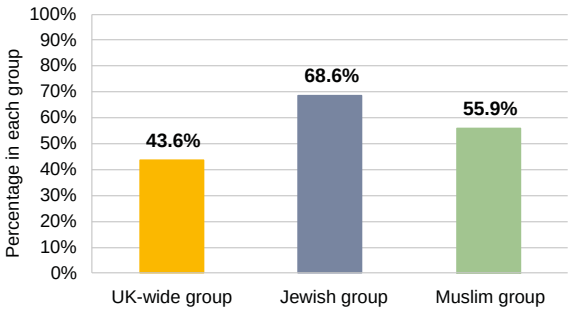
We were surprised to observe that only a minority from Jewish and Muslim communities, and of religious people from the UK-wide group, reported high levels of trust in a local religious leader (42.1%, 45.2% and 34.1% respectively[21] – see Fig. 10 and Table 4). Whilst observed across the faith groups, low levels of trust were more common in people of faith from the UK-wide group than among Jewish and Muslim respondents (65.9% compared to 45.6% and 39.8%, respectively – see Table 4).[22]

Fig. 5. Respondents who reported high levels of trust in the NHS



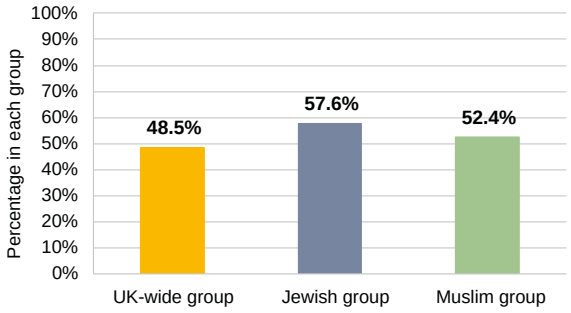
Source: Survation and Woolf Institute 2021

Fig. 6. Respondents who reported high levels of trust in the UK Government



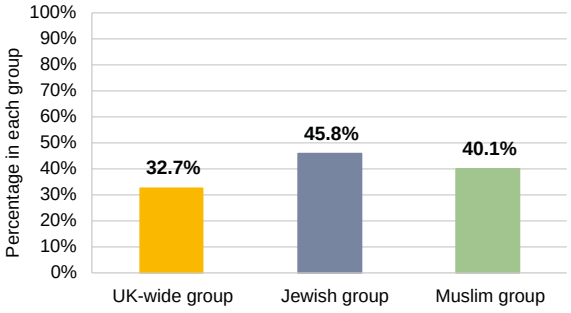
Source: Survation and Woolf Institute 2021

Fig. 7. Respondents who reported high levels of trust in a local council, county council or regional authority



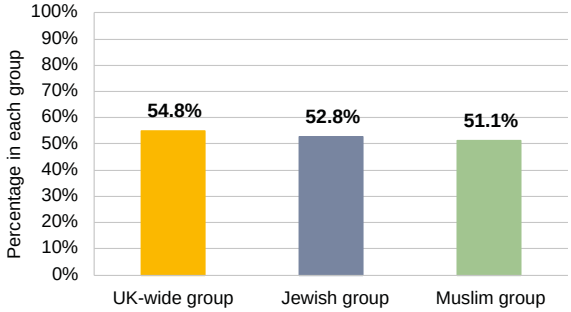
Source: Survation and Woolf Institute 2021

Fig. 8. Respondents who reported high levels of trust in the news media



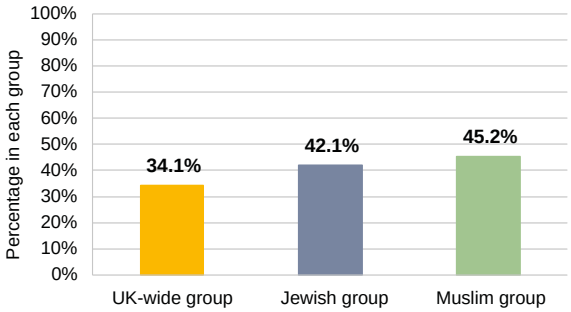
Source: Survation and Woolf Institute 2021

Fig. 9. Respondents who reported high levels of trust in friends and family



Source: Survation and Woolf Institute 2021

Fig. 10. Respondents who reported high levels of trust in a local religious leader



Source: Survation and Woolf Institute 2021

Indicative findings within the groups

The overall picture of the associations between various demographic and socio-economic factors and reported levels of trust in various sources of Covid-19 information is rather complex (see Table 8).

Within the UK-wide group, religiosity is associated, albeit fairly weakly, with trust. For example, the data suggest those who self-describe as more religious, within the UK-wide, Jewish and Muslim groups, are less likely to report high levels of trust in the NHS and local government and more likely to report high levels of trust in local religious leaders.[23]

Within the Jewish and Muslim groups, religiosity was associated with trust in faith leaders. Our data suggest that, in both groups, those who reported being more religious were also more likely to report high levels of trust in a local religious leader.[24]

Only two factors were observed to have more than a small effect size. For the Jewish group, age had a medium-sized effect on levels of trust in friends and family. Older respondents were more likely to report high levels of trust in family and friends; younger respondents less likely.

For the UK group, we observed another medium-sized effect in relation to the aforementioned association between religiosity and trust in the NHS. A large majority of those who never attend a service were more likely to have high levels of trust in the NHS; those attending once a week or more were more evenly divided between higher and lower trust levels.[25]

Vaccination

Jewish people are more likely to be vaccinated than Muslim people and the rest of the general population. At the same time, Muslim people are no more likely to refuse a vaccine than others.

Comparisons between the UK-wide, Jewish and Muslim groups

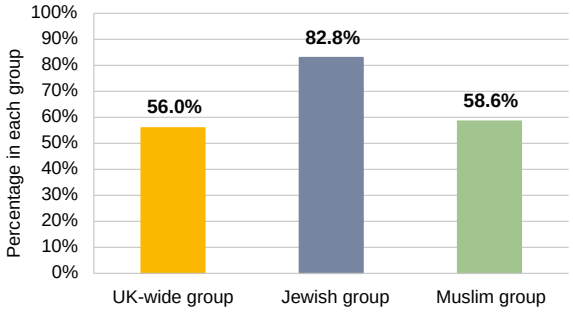
In terms of being vaccinated, Jewish respondents were more likely than those from the Muslim and UK-wide groups to have received one or both vaccines (82.8% compared to 58.6% and 56%, respectively – see Fig. 11 and Table 5).[26]

In terms of respondents who have refused to take a vaccine, sample sizes were too small (i.e. the numbers of respondents who had refused a vaccine too small) to report with confidence any statistically significant differences between the UK-wide, Jewish and Muslim groups (7.3%, 1.4% and 5.7% respectively).[27] That said, there was no evidence of widespread vaccine hesitancy among either Jewish or Muslim groups.

Among those not vaccinated, Jewish respondents were more likely to say they would take one (89.4% compared to 72.9% of Muslim respondents and 72.1% from the UK-wide group – see Fig. 13 and Table 6).[28]

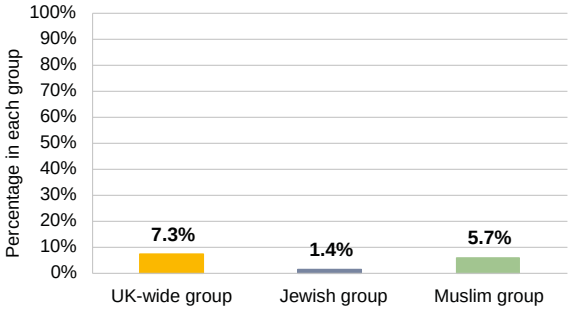
In terms of respondents who had not been offered a vaccine and reported that they would refuse one, sample sizes and cell counts were too small to determine whether differences between the three groups were statistically significant.[29]

Fig. 11. Respondents who reported having had one dose or both doses of a Covid-19 vaccine



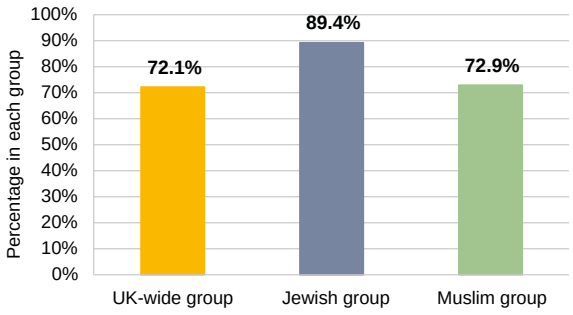
Source: Survation and Woolf Institute 2021

Fig. 12. Respondents who reported having been offered a vaccine and refusing it



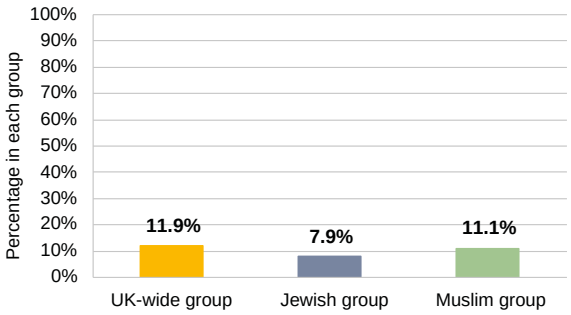
Source: Survation and Woolf Institute 2021

Fig. 13. Unvaccinated respondents who reported that they will take a vaccine when offered one



Source: Survation and Woolf Institute 2021

Fig. 14. Unvaccinated respondents who reported that they will not take a vaccine when offered one



Source: Survation and Woolf Institute 2021

Indicative findings within the groups

Within the UK-wide group, we observed a strong association between age and being vaccinated or not. Our data suggest vaccine hesitancy was more common in the UK-wide group for younger people.[30]

There was a medium-sized association between being vaccinated and both being Christian and service attendance – see Table 8).[31] We found other weaker associations between vaccination and region, ethnicity, religion and self-reported levels of religiosity (see Table 8).

Within the Jewish and Muslim groups, we found associations between being vaccinated or not and age – with age associated more strongly within the Jewish group.[32]

Weaker associations were also found within the Jewish group between vaccination and sex, ethnicity, denomination and service attendance.

In terms of refusing a vaccination or not, we found medium-sized associations within the UK-wide group between refusal and both age and religiosity (see Table 8). Younger people and respondents attending a service at least weekly appeared more likely to refuse a vaccine.

We found weaker associations between refusal and region, ethnicity, religion, Christian denomination and religiosity. Within the Jewish group, religiosity was only weakly associated with refusal.

Following rules and restrictions

Muslim people are no more likely to break lockdown rules than the general population. Jewish people are more likely to break some of the rules, although a majority follow all or most of them.

Comparisons between the UK-wide, Jewish and Muslim groups

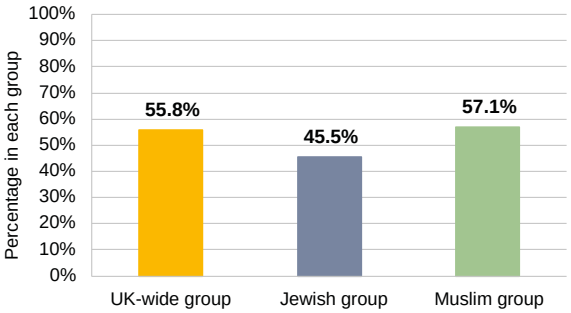
The data suggest that Jewish respondents were the least likely to follow all the Covid-19 rules and restrictions when compared to the UK-wide and Muslim groups (45.5% compared to 55.8% an 57.1%, respectively – see Fig. 15 and Table 7).

Similarly, the Jewish group were more likely than the UK-wide group to report not following all the rules (i.e. breaking some). The data suggest they are also more likely than the Muslim group to do so (see Fig. 16 and Table 7).[33]

While it would appear that rule-breaking was more prevalent within the Jewish group, it should be noted that this discrepancy was driven, in the main, by Jewish respondents following most, but not all, of the rules.

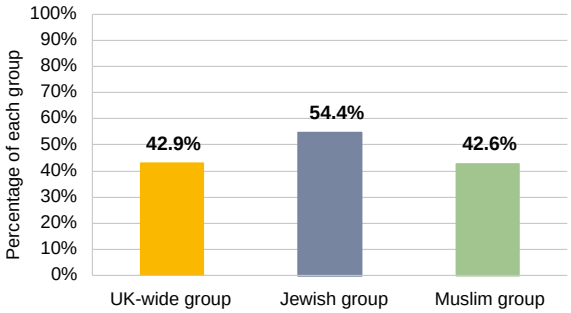
Muslim respondents were no more likely to break Covid-19 rules than the general population: a majority from both groups (as before, 57.1% and 55.8%, respectively) reported following all of them.[34]

Fig. 15. Respondents who reported following all the Covid-19 rules and restrictions



Source: Survation and Woolf Institute 2021

Fig. 16. Respondents who reported not following all the Covid-19 rules and restrictions



Source: Survation and Woolf Institute 2021

Indicative findings within the groups

Within the UK-wide group, we found associations between rule-breaking and age in the UK-wide and Jewish groups and, although effect and sample sizes were small, our data suggest more rule-breaking within younger adults (see Table 8).[36]

Within the UK-wide group, we found similar associations between rule-breaking and region, ethnicity and religious service attendance.

Within the Jewish group, we found an association between rule-breaking and sex. It appears that a majority of Jewish men are likely to break some rules, whilst only a minority of Jewish women are likely to do so (see Table 8).[37]

We observed an association between rule-breaking and religiosity within the Muslim group. Associations between rule-breaking and religiosity within the UK-wide and Muslim groups appeared to push rule-breaking in opposite directions. Our data suggest that very religious Muslim respondents, despite some media reporting to contrary, were less likely to break the rules than those who are not that religious. On the other hand, respondents from the UK-wide group who attend a religious service at least once a week were more likely to break rules than those who never attend a service.[38] It would appear that very religious Muslim people follow the rules more than very religious people from the general population (see Table 8).

1 Significant at the 1% level or lower.

2 Significant at the 1% level or lower.

3 Significant at the 1% level or lower.

4 As for all indicative findings within each of the three groups reported here and below, our survey work was able only to determine the presence of associations and their effect sizes. Further research work is needed to determine a more detailed picture. For example, even though we may observe an association between testing and age and the data may suggest younger people are more likely to test negative, we would need a larger sample size to report the latter finding as being conclusive rather than indicative.

5 We used Pearson's chi-square tests and Cramér V tests to estimate the strength of associations between respondents' demographic characteristics and survey responses concerning Covid-19. Both tests are appropriate for use with small sample sizes when estimating overall associations between demographic variables and Covid-19 responses (e.g. between age and testing positive for Covid-19). However, conclusions relating to how the variables are associated (e.g. whether younger or older respondents are more likely to test positive) remain indicative given the small cells counts involved. Following the convention in UK Government reports, proportions in respect of chi-square and Cramér's V testing and demographic variables are reported only when cell counts are 30 or more. A full set of findings from the tests (including all Pearson's chi-square and Cramér's V results with cell counts) is available upon request from the Woolf Institute.

6 The reporting of effect sizes applies conventions established by Cohen (2008) which are as follows:

	Small	Medium	Large
Cramér's V, k = 2*	0.10 – < 0.30	0.30 – < 0.50	≥ 0.50
Cramér's V, k = 3*	0.07 – < 0.21	0.21 – < 0.35	≥ 0.35
Cramér's V, k = 4*	0.06 – < 0.17	0.17 – < 0.29	≥ 0.29
Cramér's V, k = 5*	0.50 – < 0.15	0.15 – < 0.25	≥ 0.25
Cramér's V, k = 6*	0.05 – < 0.13	0.13 – < 0.22	≥ 0.22

*Minimum row or column (i.e. the lesser of the two)

7 Within the UK-wide group (and after recoding to create a binary variable where 0=not tested and 1=tested), 35.6% of 18- to 34-year-olds compared to 59.9% of those aged 65 or over had been tested for Covid-19. Within the UK-wide group: 51.4% of 18- to 34-year-olds compared to those aged 65 or over 36.4% tested negative for Covid-19.

8 Based on "I have not been tested for coronavirus" responses, 35.5% in London compared to 41.5% in the North.

9 Based on "I have not been tested for coronavirus" responses, 45.6% of those attending once week or more compared to 38% of those never attending.

10 Significant at the 0.1% level lower.

11 Significant at the 5% level or lower.

12 Based on "no" responses (i.e. no symptoms): in the Jewish group, 18 to 34 year olds=67.7%, 55 years old or over=87.4%; in the UK-wide group, 18 to 34=75.6%, 65 or over=92.8% (cell counts for "yes" responses were too small to report).

13 Similarly, the weak association between ethnicity and symptoms should be read only as a product of our small sample sizes rather as a challenge to previous research into disproportionate infection rates among ethnic minority communities.

14 Significant at the 0.1% level or lower.

15 Small cell counts negated further conclusions.

16 Trust was measured on a scale from 0 to 10. 0 to 6 is considered to be a relatively low level of trust, 7-10 is considered to be a relatively high level of trust.

17 Significant at the 1% level or lower.

18 Significant at the 5% level or lower.

19 Significant at the 5% level or lower.

20 Significant at the 1% level or lower.

21 Significant at the 5% level or lower.

22 Significant at the 0.1% level or lower.

23 For the UK-wide group, high trust (where high is 7-10 (net)): in NHS, "quite religious"=73.1%, "not at all religious"=87.6%; in local government, "quite religious"=55.5%, "not at all religious"=45.5%; in local religious leaders, "quite religious"=50.5%, "not that religious"=31.1%.

24 For Jewish group, findings are based on low levels of trust in local religious leaders (where low is 0-6 (net)), "quite religious"=48%, "not that religious"=70.1% (i.e. Jewish quite religious respondents were less likely to report low levels of trust in religious and thus more likely to report high levels of trust). Cell counts were too small to report high trust findings with confidence.

For the Muslim group, and for high levels of trust (where high is 7-10 (net)) in local religious leaders, "quite religious"=42.1%, "not that religious"=73.3%.

25 For the UK-wide group, findings are based on high levels of trust, "never"=87.6%, "once week or more"=52.4%.

26 Significant at the 0.1% level or lower.

27 P>0.05 but cells counts were lower than 30 for both Jewish and Muslim groups.

28 Significant at the 0.1% level or lower.

29 P>0.05 but cells counts were lower than 30 for both Jewish and Muslim groups.

30 Within the UK-wide group, accepted or would accept a vaccine, 65 or over=97.9%, 18 to 34=68.2%. Cell counts for those refusing a vaccine were too small to report with confidence. This tallies with recent ONS findings. For example: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/coronavirusandvaccinehesitancygreatbritain/13januaryto7february2021 (now updated) [Accessed 17 January 2022]

31 For the UK-wide group, age was associated with being vaccinated: 65 or over=97.5%, 18 to 34=15.7%.

32 Within the Jewish group, vaccinated, 55 or over=99.5%, 18 t0 34=48.4%.

Within the Muslim group, 55 or over=94.7%, 8 to 34=37%.

33 Differences between the Jewish group and both of the Muslim and UK-wide groups were found to be significant at the 5% level or lower. The difference between the Jewish and UK-wide group in respect of not following all the rules (54.4% compared to 42.9%) was found to significant at the 1% level or lower.

34 No statistically significant difference between the groups at the 5% level or lower (i.e. p>0.05).

35 Recoded variable.

36 For the Jewish group, "not following all the rules", 18 to 34=72.9%, 55 and over=46.6%.

For the UK-wide group, 18 to 34=59%,65 and over=31%.

37 For Jewish respondents, "not following all the rules", male=64%, female =45.4%.

38 For the Muslim group, not following all the rules, "very religious"=27.9%, "not that religious"=57.1%. For the UK-wide group, not following all the rules, "once week or more"=52.2%, "never"=28.1%.

Discussion

Introduction

Within the context of Covid-19 and its impact on minorities in the UK, British Jewish and Muslim communities have featured regularly within academic studies, media reporting and political debates. Accounts have described the consequences of Covid-19 on both communities including the direct effects of infection, self-isolation, vaccination, and the disruptions to religious practice and everyday life. Other consequences include the more indirect effects of media depictions of faith communities and local religious leaders: sometimes as responsible citizens demonstrating commendable civic responsibility; other times, as wilful rule-breakers threatening the nation's health. Our study sought to test assertions concerning British Jewish and British Muslim communities and Covid-19 in circulation since February 2020 and contribute towards a data-driven understanding of the situation as we found it in 2021.

Previous studies

Much of our data concerning issues related to testing and infection support previous studies of British Jewish and Muslim communities. Our analyses revealed similarities between British Jewish communities and the general population in terms testing positive for Covid-19 (e.g. ONS 2020b). Findings match those by the Institute of Jewish Policy Research that described a levelling off of cases within British Jewish communities and a diminishing of the so-called Jewish penalty first observed in 2020 (e.g. Staetsky 2021).

Our conclusions also echo those from the Office of National Statistics that revealed disproportionate rates of Covid-19 infection within British Muslim communities (e.g. ONS 2020b). The proportion of British Muslim people testing positive for Covid-19 was significantly higher than for British Jewish communities and the general population. Similarly, British Muslim people are more likely to have had symptoms than the general population.

Media accounts

In terms of addressing media accounts and political debates around British Jewish and British Muslim communities, our findings revealed a more complex picture. Not least because the media picture so far has been varied; with celebratory coverage mixed in with explicit or implicit expressions of concern.

Overall, we found much to challenge media depictions of non-compliance and rule-breaking with British Jewish and Muslim communities. Similarly, we found little evidence linking religiosity and non-compliance. Media accounts of strictly observant worshippers cramming into mosques and synagogues may have highlighted a series of concerning single cases but generalisations and stereotypes based on these reports do not bear the weight of empirical scrutiny. Overall, our data support the more positive media accounts reviewed for the study.

We found higher rates of testing among British Muslim communities than among the general population and evidence for the types of community drivers underpinning many successful local Covid-19 testing initiatives. These include recent surge testing (i.e. mass testing) in Blackburn (a British town with a sizeable Muslim population).

Other findings appear to answer accusations of inherent non-compliance within British Jewish and Muslim communities. Rates of self-isolation in both were far higher than among the general population. Muslim people were as likely as the general population to be vaccinated by April 2021: Jewish people were more likely; hardly the stuff of mass disobedience.

Trust

Our findings around trust provide further evidence of a more positive overall picture. A purported lack of trust towards the UK Government and its effect on health outcomes formed a major narrative during the pandemic, rehearsed by sections of the media, Public Health England and others (and sometimes implied through media accounts of non-compliance and rule-breaking). However, levels of trust in the UK Government, the NHS and local government as sources of Covid-19 information were all higher among British Jewish and Muslim communities than we might have assumed from an uncritical reading of previous negative accounts, and in some cases higher than among the general population. Levels of trust were particularly high within the UK's Jewish communities.

Arguably, this represents a good news story for policymakers. Is there a high degree of latent trust among British Jewish and British Muslim communities available as a resource to those tasked with designing or communicating public health guidance to minority faith communities? Was it the case that the hard work begun in 2020 by public bodies (the NHS, health trusts, local councils, etc.) to tackle vaccine hesitancy among British Muslim communities had begun to pay-off by early 2021? Larger sample sizes are needed to test these possibilities. At the very least, our findings offer a warning against simplified accounts of mistrust towards public bodies among British minority faith communities (whether related to Covid-19, public health or any other policy-related matter).

Similarly, the higher levels of trust in the news media as a source of Covid-19 information among British Muslim communities suggests that, despite strong evidence of negative media biases against Muslims and Islam, defining the relationships between journalists and British Muslim communities solely in terms of Islamophobia and exclusion risks leaving the overall picture incomplete or at least risks underestimating (or even disregarding) those holding positive feelings within a large, diverse Muslim population towards the media.

Our findings concerning trust in local religious leaders as providers of Covid-19 information were surprising. We observed lower levels of trust than we anticipated given previous studies (e.g. Taragin-Zeller and Kessler 2021). Compared to these, we found demonstrably lower trust towards faith leaders within British Jewish and British Muslim communities: less than half within each reported high levels of trust. Crucially, trust towards local religious leaders was lower overall than towards Covid-19 information from the UK Government and NHS.

This raises important questions about a dominant narrative found across academic literature, media accounts and public health advice asserting the importance of faith leadership – sometimes characterised as trusted mediators – and their role in sharing public health guidance and increasing trust in it. Our findings suggest that, despite the excellent and vital work undertaken by imams, rabbis and Christian clergies during the pandemic, depictions of faith communities as self-exclusionary groups trusting only their local leaders, or trusting them more than public bodies are likely to be reductivist and risk essentialising religious groups. The message from the data is simple: people of faith are citizens too.

Rule-breaking and British Jewish communities

However, this positive picture is accompanied by evidence of a greater tendency within British Jewish communities to break Covid-19 rules and restrictions. British Jewish communities were less likely than British Muslim communities and the general population to follow all Covid-19 rules (i.e. they were the most likely to break at least some). This is a sensitive finding that needs to be handled carefully and reported cautiously.

The discrepancy between high levels of trust in public bodies providing public health advice, and higher rates of rule-breaking becomes more understandable when we consider the fact that many of the Jewish people surveyed reported following “most of the rules”. This tendency to follow most, if not all, of the rules is not necessarily at odds with high levels of trust in public bodies and high levels of self-isolation.

Possible explanations for these apparent contradictions between trust and rule-breaking might include the challenges of complying with Covid-19 rules and restrictions given known patterns of sociability and family-life with Jewish communities, such as the higher likelihood of living in close geographic proximity to extended family members. There is also the matter of sociability being a requirement of ritual with Judaism: for example, the minyan – the minimum number of males (ten) required for liturgical purposes. Another explanation might be more honest reporting among Jewish participants. Perhaps Jewish respondents felt less social pressure to conceal their rule-breaking than others. (How many readers of this discussion have followed all the Covid-19 rules? How many would admit their transgressions in a survey?)

Whatever the true explanation, our data suggest that, despite considerable focus on British Haredi Jewish communities as transgressive spreaders of the Covid-19 virus, rule-breaking (albeit in its mildest form) is observable across the wider British Jewish population.

Whilst we have insufficient data to make claims about the levels of trust and behaviour of specific denominational groups (within the Jewish population, for example) we might have expected to see higher levels of religiosity driving attitudes and behaviours given myriad negative accounts of more strictly observant communities during the pandemic. The fact we did not suggests, again, that media reports and research studies have not provided us with a complete picture of more observant faith communities.

For example, previous academic research has concluded, based on small sample sizes, that more religiously observant Christian, Muslim and Jewish people tend to break Covid-19 rules and guidance fails to recognise religious or cultural needs. Even where recognised, such needs are seldom met by new technologies such as those facilitating engagement online (Taragin-Zeller and Kessler 2021).

On balance, however, it would appear that a disproportionate focus on such issues is unhelpful for those seeking a complete understanding of Covid-19 and British faith communities. Cases and issues of concern may abound and may well present themselves as interesting research items. Using such cases as the bases for generalisations of the wider Jewish and Muslim populations may risk an inaccurate overall picture. In terms of our understanding of Covid-19 and faith communities, anecdotal evidence remains a necessary component but not one that is sufficient.

Religiosity and British Muslim communities

In contrast to the lack of association between adherence to rules and religiosity within British Jewish communities, we observed a stronger association between the two within British Muslim communities: our data suggest that those who are more religious are less likely to break the rules than those who are not as religious.

Findings such as these support positive media accounts of responsible religious leadership in British Muslim communities and suggest the positive role of faith in shaping community-mindedness. Whilst our data reveal greater trust of public bodies than religious leaders when it comes to health advice, we should not disregard the role of imams and mosque management groups in encouraging adherence to Covid-19 protection measures, or striving to maintain Covid-19 safety within their mosques. Reports of interventions such as an airport-style security system at a mosque in Bradford (a British city with a sizeable Muslim population), demonstrate the sophistication with which this was achieved. Neither should we ignore the positive approach of everyday Muslim people across the UK.

Returning to the data for a final time, we observed no associations between rule-breaking and symptoms within British Muslim communities. (This was not the case for the UK-wide and Jewish groups, where rule-breaking and symptoms appeared to be associated – although no claim about causation is asserted.) If we exclude rule-breaking as a major factor associated with infection rates within British Muslim communities (and with it any claims around causation), remaining explanations include the higher proportion of multi-generational households, the higher prevalence of frontline work (consider key workers, NHS staff, etc.) and the greater use of public transport. Or expressed another way, it would appear that following the Covid-19 guidelines appears to offer little guarantee of lower infection rates among British Muslim communities. If this does not provide an example of a systemic health inequality or systemic racism, as many have suggested, then, at the very least, we see an outcome that appears entirely unfair for British Muslim communities.

Despite this negative aspect of our findings, the picture overall looks far more encouraging than we might have expected given the negative media accounts and stereotypes of British Jewish and British Muslim communities in circulation since 2020. Whilst it is undoubtedly true that both communities have been scrutinised disproportionally and demonised unfairly, and whilst health inequalities persist, the data help tell a more balanced story.

Appendix A

Questionnaire

Q1: Which of the following statements applies to you? Since the pandemic began:

- ☐ I have not been tested for coronavirus (Covid-19)
- ☐ I have tested negative for coronavirus (Covid-19)
- ☐ I have tested positive for coronavirus (Covid-19)
- ☐ Don't know
- ☐ Prefer not to say

Q2: Have you had coronavirus (Covid-19) symptoms?

- ☐ I have not been tested for coronavirus (Covid-19)
- ☐ I have tested negative for coronavirus (Covid-19)
- ☐ I have tested positive for coronavirus (Covid-19)
- ☐ Don't know
- ☐ Prefer not to say

Q3: Have you self-isolated during the coronavirus (Covid-19) pandemic?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Prefer not to say

Q4: On a scale of 0 to 10, where 0 is do not trust at all and 10 is completely trust, how much do you trust the following to provide you with information about Covid-19? (7-10 (net) = high levels of trust, 0-6 (net) = low levels of trust

- ☐ UK Government
- ☐ Friends/family
- ☐ News media
- ☐ National Health Service
- ☐ Local council / county council / regional authority
- ☐ Local religious leader

Q5: In relation to the Covid-19 vaccine, which of the following statements applies to you?

- ☐ I have received the vaccine (one dose or both doses)
- ☐ I have been offered the vaccine and I will take it
- ☐ I have been offered the vaccine and I will not take it
- ☐ I have not been offered the vaccine yet
- ☐ I don't know
- ☐ Prefer not to say

Q5.1: When you are offered the vaccine, will you take it?

- ☐ I will take it
- ☐ I will not take it
- ☐ Don't know
- ☐ Prefer not to say

Q6: Thinking about how you are personally applying the Covid-19 rules and restrictions, which of the following statements best describes you?

- ☐ I am following all of the rules
- ☐ I am following some of the rules
- ☐ I am following most of the rules
- ☐ I am not following the rules
- ☐ Prefer not to say

Appendix B

Reported proportions and significance testing

a = a statistically significant difference between the Jewish and UK-wide group
b = a statistically significant difference between the Muslim and UK-wide group
c = a statistically significant difference between the Jewish and Muslim group

* = statistically significant at the 5% level
** = statistically significant at the 1% level
*** = statistically significant at the 0.1% level

Table 1. [Q.1) Which of the following statements applies to you? Since the pandemic began:

	I have not been tested for coronavirus		I have tested negative for coronavirus		I have tested positive for coronavirus		Don't know		Prefer not to say		
	n	p	n	p	n	p	n	p	n	p	Total n
UK Total	541	51.1 b**	442	41.7	58	5.5 b***	8	1.1	4	0.5	1053
Jewish	167	41.7	198	48.4	38	9.8 c**	1	0.2	0	0	404
Muslim	148	38.6 b**	168	37.5	83	23.6 b*** c**	1	0.3	0	0	400

Table 2. [Q.2) Have you had coronavirus (Covid-19) symptoms?

	Yes		No		Don't Know		Prefer not to say		
	n	p	n	p	n	p	n	p	Total n
UK Total	166	15.1 b***	841	80.3 b**	43	4.3 b**	3	0.0	1053
Jewish	88	21.3	309	77.2	7	1.5	0	0	404
Muslim	108	31.4 b***	289	68.1 b**	3	0.5 b**	0	0	400

Table 3. [Q.3) Have you self-isolated during the coronavirus (Covid-19) pandemic?

	Yes		No		Don't Know		Prefer not to say		
	n	p	n	p	n	p	n	p	Total n
UK Total	418	38.8 a*** b***	625	60 a*** b***	7	0.9 b**	3	0.3	1053
Jewish	250	63.7 a***	154	36.6 a***	0	0 b**	0	0	404
Muslim	260	65.4 b***	139	34.5 b***	1	0.1	0	0	400

Table 4. [Q4.] On a scale of 0 to 10, where 0 is “do not trust at all” and 10 is “completely trust”, how much do you trust the following to provide you with information about COVID-19?

	7-10 (Net)		0-6 (Net)		Don’t Know		Prefer not to say		
	n	p	n	p	n	p	n	p	Total n
UK Government - UK Total	469	43.6 a*** b*	584	56.4 a*** b**	0	0	0	0	1053
UK Government - Jewish	273	68.6 a*** c*	129	30.9 a*** c*	1	0.2	1	0.3	404
UK Government - Muslim	234	55.9 b* c*	159	42.8 b** c*	7	1.3	0	0	400
Friends/family - UK Total	560	54.8	493	45.2	0	0 a** b**	0	0 b*	1053
Friends/family - Jewish	222	52.8	174	44.7	7	2.3 a**	1	0.2	404
Friends/family - Muslim	202	51.1	182	43.8	13	3.6 b**	3	1.5 b*	400
News media - UK Total	342	32.7 a**	711	67.2 a**	0	0 b*	0	0	1053
News media - Jewish	184	45.8 a**	218	53.6 a**	2	0.6	0	0	404
News media - Muslim	168	40.1	221	58.0	10	1.7 b*	1	0.2	400
NHS - UK Total	828	76.8 a***	225	23.2 a***	0	0	0	0	1053
NHS - Jewish	362	90.9 a*** c**	40	8.6 a*** c**	1	0.2	1	0.3	404
NHS - Muslim	319	79.1 c**	75	19.8 c**	6	1.2	0	0	400
Local council / county council / regional authority - UK Total	522	48.5 a*	531	51.5 a***	0	0 a*** b***	0	0	1053
Local council / county council / regional authority- Jewish	224	57.6 a*	152	35.3 a***	27	6.9 a***	1	0.2	404
Local council / county council / regional authority - Muslim	203	52.4	176	42.4	21	5.2 b***	0	0	400
Local religious leader - UK Total	223	34.1 b*	413	65.9 a*** b***	0	0 a*** b***	0	0 a**	636
Local religious leader - Jewish	176	42.1	182	45.6 a***	37	9.9 a***	9	2.4 a**	404
Local religious leader - Muslim	168	45.2 b*	173	39.8 b***	55	14.0 b***	4	1.0	400

Table 5. [Q.5) In relation to Covid-19 vaccination, which of the following statements applies to you?

	I have received the vaccine (one dose or both doses)		I have been offered the vaccine and I will take it		I have been offered the vaccine and I will not take it		I have not been offered the vaccine yet		Don't know		Prefer not to say		
	n	p	n	p	n	p	n	p	n	p	n	p	Total n
UK Total	606	56.0 a***	70	7.4 a***	69	7.3	285	26.5 a***	11	1.1	12	1.7 a*** b***	1053
Jewish	345	82.8 a*** c***	3	0.4 a*** c***	7	1.4 c*	48	14.9 a*** c**	1	0.4	0	0 a***	404
Muslim	264	58.6 c***	27	7.8 c***	19	5.7 c*	89	27.5 c**	1	0.4	0	0 b***	400

Table 6. [Q. 5.1) When you are offered the vaccine, will you take it?

	I will take it		I will not take it		Don't Know		Prefer not to say		
	n	p	n	p	n	p	n	p	Total n
UK Total	212	72.1 a***	32	11.9	41	16.0 a***	0	0	285
Jewish	42	89.4 a*** c***	4	7.9	2	2.7 a*** c***	0	0	48
Muslim	61	72.9 c***	12	11.1	15	14.8 c***	1	1.2	89

Table 7. [Q.6) Thinking about how you are personally applying the Covid-19 rules and restrictions, which of the following statements best applies to you?

	I am following all of the rules		I am not following ALL of the rules		Don't Know		Prefer not to say		
	n	p	n	p	n	p	n	p	Total n
UK Total	587	55.8 a*	452	42.9 a**	10	0.9	4	0.4	1053
Jewish	187	45.5 a* c*	216	54.4 a** c*	1	0.1	0	0	404
Muslim	233	57.1 c*	166	42.6 c*	0	0	1	0.2	400

Appendix C

Pearson's chi square and Cramér's V tests

Table 8. Results of Pearson's chi square and Cramér's V tests

Question 1

		x^2	df	p	Ø	p	k*	Effect Size**
UK	Age	43.717	8	<.001	.145	<.001	3	Small
	Religion	11.124	4	.025	.073	.025	3	Small
	Christian denomination	16.266	6	.012	.128	.012	3	Small
	Ethnicity	15.491	8	.050	.087	.050	3	Small
Jewish	Age	10.046	4	.040	.112	.040	3	Small
	Religiosity 1	12.672	6	.049	.126	.049	3	Small
Muslim	Region	19.990	6	.003	.165	.003	3	Medium
	Religiosity 2	24.349	4	<.001	.176	<.001	3	Small

Question 2

UK	Age	37.245	4	<.001	.193	<.001	2	Small
	Ethnicity	10.039	4	.040	.100	.040	2	Small
	Religiosity 1	19.360	3	<.001	.186	<.001	2	Small
	Religiosity 2	27.974	2	<.001	.222	<.001	2	Small
Jewish	Age	17.943	2	<.001	.212	<.001	2	Small
	Religiosity 1	15.813	3	.001	.201	.001	2	Small
Muslim	Religiosity 2	12.920	2	.002	.181	.002	2	Small

Question 3

UK	Age	12.424	4	.014	.109	.014	2	Small
	Christian denomination	13.485	3	.004	.165	.004	2	Small
	Religiosity 2	7.363	2	.025	.112	.025	2	Small
Jewish	Age	10.229	2	.006	.159	.006	2	Small
Muslim	Denomination	8.039	2	.018	.145	.018	2	Small
	Religiosity 2	8.418	2	.015	.146	.015	2	Small

Question 4 UK Government

UK	Age	35.359	4	<.001	.183	<.001	2	Small
	Ethnicity	18.854	4	.001	.134	.001	2	Small
	Religion	23.172	2	<.001	.148	<.001	2	Small
	Christian denomination	8.330	3	.040	.130	.040	2	Small
	Religiosity 1	8.015	3	.046	.117	.046	2	Small
	Religiosity 2	28.607	2	<.001	.219	<.001	2	Small

Question 4.2 Friends/family

UK	Age	30.944	4	<.001	.171	<.001	2	Small
	Ethnicity	16.470	4	.002	.125	.002	2	Small
	Religion	22.751	2	<.001	.147	<.001	2	Small
	Religiosity 2	31.777	2	<.001	.231	<.001	2	Small
Jewish	Age	38.060	2	<.001	.310	<.001	2	Medium
Muslim	Ethnicity	6.527	2	.038	.131	.038	2	Small
	Religiosity 1	13.134	3	.004	.189	.004	2	Small

Question 4.3 News media

		x^2	df	p	Ø	p	k*	Effect Size**
UK	(Ethnicity)	*(9.570)*	*(4)*	*(.048)*	*(.096)*	*(.048)*	*(2)*	*(Small)*
	Religiosity 2	11.356	2	.003	.138	.003	2	Small
Jewish	Denomination	13.828	4	.008	.187	.008	2	Small
	(Religiosity 1)	*(7.709)*	*(3)*	*(.052)*	*(.140)*	*(.052)*	*(2)*	*(Small)*

Question 4.4 National Health Service

UK	Age	86.146	4	<.001	.286	<.001	2	Small
	Ethnicity	38.604	4	<.001	.192	<.001	2	Small
	Religion	41.613	2	<.001	.199	<.001	2	Small
	Religiosity 1	20.303	3	<.001	.186	<.001	2	Small
	Religiosity 2	83.505	2	<.001	.374	<.001	2	Medium
Jewish	Religiosity 1	8.043	3	.045	.142	.045	2	Small

Question 4.5 Local Government

UK	Age	27.897	4	<.001	.163	<.001	2	Small
	Christian denomination	11.190	2	.004	.103	.004	2	Small
	Religiosity 1	14.228	3	.003	.156	.003	2	Small
	Religiosity 2	30.217	2	<.001	.225	<.001	2	Small

Question 4.6 Local religious leaders

UK	Ethnicity	10.325	4	.035	.127	.035	2	Small
	Religion	7.344	2	.025	.107	.025	2	Small
	Christian denomination	9.995	3	.019	.142	.019	2	Small
	Religiosity 1	45.861	3	<.001	.280	<.001	2	Small
	Religiosity 2	23.634	2	<.001	.199	<.001	2	Small
Jewish	Age	27.849	2	<.001	.280	<.001	2	Small
	Religiosity 1	11.859	3	.008	.184	.008	2	Small
Muslim	Sex	4.183	1	.041	.111	.041	2	Small
	Denomination	7.243	2	.027	.149	.027	2	Small
	Religiosity 1	15.803	3	.001	.218	.001	2	Small

Question 5*** Vacinated or not

UK	Age	502.962	4	<.001	.700	<.001	2	Large
	Region	41.213	6	<.001	.201	<.001	2	Small
	Ethnicity	73.774	1	<.001	.269	<.001	2	Small
	Religion	69.135	2	<.001	.260	<.001	2	Small
	Christian denomination	59.209	3	<.001	.349	<.001	2	Medium
	Religiosity 1	35.603	3	<.001	.250	<.001	2	Small
	Religiosity 2	104.677	2	<.001	.426	<.001	2	Medium
Jewish	Sex	5.432	1	.020	.116	.020	2	Small
	Age	118.165	2	<.001	.541	<.001	2	Large
	Ethnicity	14.073	2	.001	.187	.001	2	Small
	Denomination	15.635	4	.004	.199	.004	2	Small
	Religiosity 1	22.196	3	<.001	.237	<.001	2	Small

Question 5**** Refused vacine or not

		x^2	df	p	Ø	p	k*	Effect Size**
UK	Age	*84.234*	*4*	*<.001*	*.336*	*<.001*	*2*	Medium
	Region	26.724	6	<.001	.190	<.001	2	Small
	Ethnicity	35.164	1	<.001	.218	<.001	2	Small
	Religion	25.130	2	<.001	.184	<.001	2	Small
	Christian denomination	18.464	3	<.001	.214	<.001	2	Small
	Religiosity 1	20.184	3	<.001	.212	<.001	2	Small
	Religiosity 2	66.491	2	<.001	.380	<.001	2	Medium
Jewish	Denomination	20.172	3	<.001	.245	<.001	2	Small
Muslim	(Age)	(5.926)	(2)	(.052)	(.143)	(.052)	2	(Small)
	(Region)	(7.665)	(3)	(.053)	(.171)	(.053)	2	(Small)
	(Religiosity 2)	(5.974)	(2)	(.050)	(.145)	(.050)	2	(Small)

Question 6 Following all the rules or not

UK	Age	52.840	4	<.001	.226	<.001	2	Small
	Region	16.014	6	.014	.124	.014	2	Small
	Ethnicity	15.904	4	.003	.124	.003	2	Small
	Religiosity 2	17.880	2	<.001	.174	<.001	2	Small
Jewish	Sex	13.646	1	<.001	.184	<.001	2	Small
	Age	18.202	2	<.001	.212	<.001	2	Small
Muslim	Religiosity 1	13.282	3	.004	.186	.004	2	Small

*k=minimum row or column number
**Effect size (small, medium or large) (Cohen 1988)
***Recoded binary variable (vaccinated or not)
****Recoded binary variable (refused vaccination or not)
(Italics)=borderline cases

Notes:
Positive result reported (small, medium or large) if Pearson chi-square asymptotic result is statistically significant (where, p<0.05) and if both Cramér's V value > .150 (including rounding up from .145, 146, etc.) and result is statistically significant (where, p <0.05). Otherwise result is not reported and excluded from the table.

Assumes relationships:

	Small	Medium	Large
Cramér's V, k = 2*	0.10 – < 0.30	0.30 – < 0.50	≥ 0.50
Cramér's V, k = 3*	0.07 – < 0.21	0.21 – < 0.35	≥ 0.35
Cramér's V, k = 4*	0.06 – < 0.17	0.17 – < 0.29	≥ 0.29
Cramér's V, k = 5*	0.50 – < 0.15	0.15 – < 0.25	≥ 0.25
Cramér's V, k = 6*	0.05 – < 0.13	0.13 – < 0.22	≥ 0.22

***Minimum row or column**

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