PARTISANSHIP AND MASK-WEARING IN THE UNITED STATES: IMPLICATIONS FOR POLITICAL MESSAGING AND PUBLIC HEALTH POLICY

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ABSTRACT

The relationship between political factors and health behaviours has been well-examined in recent years. Recent applications are found in the COVID-19 response of the United States, where political factors motivate the divide on healthcare policies and attitudes. The current study investigates the association between political partisanship and frequency of self-reported mask-wearing in Democrats and Republicans, where partisanship is defined as external orientation with a political party. Prior literature failed to disentangle the effects of partisanship from political ideology in health outcomes, and previous partisan trends are further incongruent with novel pandemic research on mask-wearing. This relationship between partisanship and health behaviour therefore requires scrutiny in light of the current pandemic, as partisanship may explain how such divides motivate COVID-19 perceptions in the public sphere. Secondary data analysis was carried out on 2807 participants' responses to a large-scale survey on COVID-19 health behaviours. As aligned with previous literature, Democratic affiliation was associated with significant preference for reported mask-wearing, whereas Republican affiliation was linked to significant preference to report no mask-wearing. The current findings emphasize the extent to which polarized political affiliations are associated with uptake of mask-wearing in a US population, and finds comparison to similar research in the field. Current findings and literature implicate partisan-biased media and messaging in health behaviour uptake, with further applications to effective health policy with partisanship considerations. Potential further directions for the application of the current findings across culture and context are discussed.

INTRODUCTION

US Politics, Health, and COVID-19

The novel Coronavirus (COVID-19) has had a devastating global impact due to its high mortality and infection rate (Long and Aye, 2021), and measures such as social distancing, mask-wearing, and increased sanitation were initially widely implemented for outbreak mitigation (Centers for Disease Control and Prevention [CDC], 2021). The COVID-19 response in the United States warrants particular interest, as political attitudes exacerbate division on COVID-19 responses (Allcott et al., 2020), and have resulted in failure to contain the public health crisis (Carter and May, 2020). Therefore, it follows that politics influences health behaviours in the current US context, warranting scrutiny and re-examination of prior assumptions on the link between political factors and health behaviours.

The political factors in question encompass political ideology and partisanship. While political ideology reflects a spectrum of political beliefs and values, partisanship in the current exploration is similar to political affiliation, referring to an individual's external support and alignment with a political party (Cruz, 2017). The two concepts are understood to be closely related (Howard, 2021): Democrats lean towards liberal ideologies, while Republicans tend to adopt conservative values (Pew Research Center, 2020). As these political factors may impede the government from addressing issues efficiently (such as climate change: see Gupta et al., 2018; Latkin et al., 2021), it becomes critical to understand the mechanisms that motivate COVID-19 perceptions in the public sphere.

Prior literature suggests that political factors motivate and exacerbate the divide on healthcare behaviours and attitudes, which have significant implications for health outcomes. Fraser et al. (2022) suggest that political factors on the institutional level underpin the differential uptake of health campaigns and policies, which in turn affect the health of the individual by restricting access to healthcare services. Political factors further exert influence on the individual level, where they interact with behaviour attitude and uptake. Bernstein et al. (2016) reported that vaccination rates divided on party lines across states, and Hersh and Goldenberg (2016) similarly found that physicians' political affiliations predicted outcome of treatment for their patients, particularly on politicized healthcare issues where partisan divides exist, such as drug use and abortion.

In the pre-pandemic literature, these trends in politicized health behaviours are accounted for by sensitivity to health threat and sensitivity to disgust. A significant body of literature demonstrates that social conservatism is associated with higher sensitivity to health threats (Crawford, 2017), and particularly pathogen-related health threats (Fiagbenu et al., 2019). Conservatism was further linked to higher disease or disgust sensitivity (Shook et al., 2017) and predicted partisanship voting in the US (Aarøe et al., 2020). Republicans are therefore aligned with social conservatism (Kannan and Veazie, 2018), and exhibit more reactionary attitudes towards health threats. From prior trends, it follows that similar caution towards COVID-19 would be expected from Republicans, and the literature predicts that Republicans would be more likely to wear masks, particularly as disgust sensitivity predicts COVID-19 health behaviours (Shook et al., 2020). However, incongruity is present in the current trends on mask-wearing during the pandemic, which raises questions on the link between partisanship and mask-wearing for further investigation.

Partisan Differences in Mask-Wearing

A multitude of recent literature has established that Republicans experience lower health threat regarding COVID-19 (Hsiehchen et al., 2020; Thoma et al., 2021), which is realized in a general reluctance for Republican demographics to adopt precautionary COVID-19 behaviours (Allcott et al., 2020), directly at odds with the pre-pandemic literature. Significantly, Republican anti-mask sentiment has been observed at a

community and legislative level (Gollwitzer et al., 2020; Kahane, 2021; Kramer, 2020). As a highly politicized precautionary behaviour, mask-wearing itself merits further examination; understanding that certain groups are predisposed to lower mask-wearing may allow for more effective health policies to mitigate outbreaks in vulnerable groups (Haischer et al., 2020).

The political divide in mask-wearing has received attention across both empirical literature and journalistic narratives, attempting to discern the reasons underlying mask-wearing differences. Journalistic coverage may reflect public perceptions of the reasons underlying mask-wearing, and generally implicates conservative imposition on freedom (i.e. political ideology: see Aratani, 2020; Bender, 2020; Betz, 2020). To a certain extent, empirical literature also supports the premise that political ideology explains mask-wearing trends. Kemmelmeier and Jami (2021) suggest that liberals emphasize engagement with mask-wearing for communal benefit, and tend to display altruistic concern for others that increases precautionary behaviours (Graham et al., 2020). Comparatively, conservatives emphasize independence and individual liberty (Kannan and Veazie, 2018), and may view mask-wearing as a restriction of personal freedoms; both factors find association with higher anti-mask attitudes (Kaplan et al., 2021).

Considering social explanations, conservatives further value ingroup loyalty. Where conservatism aligns with Republican groups, conservatives may downplay the Republican mismanagement of the pandemic so as to preserve adherence to a Republican ingroup, and thus conform to group norms of anti-mask-wearing (Shin et al., 2022). The literature emphasizes that the Republican ingroup and its associated values reinforce anti-mask behaviour (Stewart and Morris, 2021). Shared ingroup values therefore conflict with mask-wearing in the current context and may underlie political motivations for such behaviours. However, two things become apparent: the attribution of external partisanship trends to internal values, and the conflation of partisanship with ideology. Given that these outcomes are distinct when partisan-biased information is considered (Howard, 2021), the current investigation seeks to disentangle the effects of political ideology from partisanship, and to place more emphasis on external partisan-related factors.

Partisan Trends as Attributed to Party Messaging and Political Elites

Prior literature established that Republicans demonstrate increased selective information processing (Rodriguez et al., 2017), which leaves them vulnerable to information bias in the polarized and conflicting media sources of the pandemic context. Republican-biased media consistently displayed a tendency to downplay the initial severity of the pandemic, thereby reducing perception of COVID-19 as a health threat (Calvillo et al., 2020). Behavioural frameworks dictate that perceived threat, perceived risk, and perceived susceptibility are crucial motivators of health behaviours and risk-reduction (Floyd et al., 2006; Janz and Becker, 1984), and the current context substantiates this claim. Republicans were more vulnerable to misinformation regarding COVID-19 (Calvillo et al., 2020; Latkin et al., 2021), and the following lack of threat perception correlated directly with lower mask-wearing (Dryhurst et al., 2020; Thoma et al., 2021). Additionally, external party affiliation determines ingroup formation (Howard, 2021). Prior arguments sought to explain how ingroups reinforced underlying anti-mask-wearing norms in a Republican demographic, but identification with a distinct political group would also reinforce selective information processing consistent with group values (Stets and Burk, 2000). This has profound implications for the influence of party membership on selective information exposure, and therefore on individual perceptions of politicized COVID-19 discourse.

Partisan information bias is further exacerbated by political leadership. Shin et al. (2022) finds that loyalty to Republican ex-president Donald Trump is associated with lower levels of mask promotion. As the Trump presidency repeatedly propagated anti-mask wearing sentiment and policies (Gadarian, 2021; Neelon et al., 2021), the influence of political figures on individual mask-wearing attitudes becomes apparent. The period spanning the Trump presidency also found the highest level of partisan polarization in the US (Jones, 2019), where Trump was highly in favour with Republican groups, and disfavoured by Democrats. This may have led the public to adopt polarized stances on mask-wearing as based on the partisan-related information propagated by Trump. Gadarian (2021) suggests that political leadership therefore serves as a source of information noise, where conflicting information between the Republican presidency and public health officials increased the likelihood of partisan effects in evaluating the threat of COVID-19. This premise finds acceptance within the literature: Kahane (2021) observed that mask-wearing was significantly lower in states that demonstrated support for Trump leadership, and established a direct relationship between Republican leadership and mask-wearing reluctance. Pro et al. (2020) elaborate, citing misinformation propagated by Trump as the reason for decreased mask-wearing in rural populations. Although other demographic factors have been proposed to contribute to this trend, rural areas generally tend to vote Republican (Oberhauser et al., 2019). It follows that public perceptions of COVID-19 were particularly influenced by political elites in Republican demographics (Schoeni et al., 2021; Shao and Hao, 2020), and reinforced lower perception of COVID-19 as a health threat (Calvillo et al., 2020). As a result, politically motivated propagation of anti-mask attitudes by leadership figures reduced mask-wearing in the respective demographics (Xu & Cheng, 2021).

The Current Study

The above literature suggests that partisanship may account for the current trends in lower mask-wearing for Republicans and implicates the role of information bias and salient political figures. A tentative relationship may therefore be established. However, there remains a lack of literature to support theoretical frameworks that connect the context of partisanship and disease outbreaks holistically (Conway et al., 2021). Political communication theories may prove informative of the ways in which political information by elite figures reinforces partisan support for public policy (Iyengar and Simon, 2000; Littlejohn and Foss, 2009), but must be adapted to the novelty of the context. A theoretical basis will further aid understanding of partisan responses to health policy and is an essential step in developing approaches that may account for partisan divides in responses to COVID-19.

Moreover, conflicts remain apparent in the current body of literature. Findings by Shook et al. (2020) identified significant differences in political orientation for precautionary behaviours such as avoidance of face-touching, but this was not significantly or reliably replicated across other behaviours including mask-wearing. This inconsistency may be attributed to the conflation of partisanship with ideology under the overarching concept of political orientation. Moreover, current research on COVID-19 health behaviour fails to make a distinction on two fronts: between mask-wearing and other precautionary behaviours, as well as political partisanship and ideology (see Cunningham and Nite, 2021). Therefore, additional nuance is required to understand how partisanship motivates certain precautionary behaviours. Given that predictions of current trends based on prior literature do not apply (see Conway et al., 2021), the novelty and distinctiveness

of the current context suggests that replication and further work in the US context is necessary. The current study aims to substantiate current findings and disentangle the potential effects of political ideology from partisanship.

The current examination gives focus to the uncertainty in findings by Goldberg et al. (2020), which found that information uptake from various sources explained demographic trends in mask-wearing. In their discussion, the authors note the potential conflation of these effects with demographic variables, particularly partisan preference for certain information sources. The current study will expand on this premise and examine mask-wearing across partisanship in the general US population. Secondary data analysis will be conducted on data provided by Goldberg et al. (2020), which provides an extensive and representative sampling pool. The study will serve as an investigation into the nuances of the political divide in the US and address the following question: how does partisanship influence frequency of self-reported mask-wearing?

METHODS

The current study utilizes data from Goldberg et al. (2020) and conducts secondary analysis on the provided data.

Ethics

The original study was approved by the Yale University and George Mason University institutional review boards.

Participants

The original sample consisted of 3,933 participants who were recruited via Climate Nexus Polling. Climate Nexus Polling utilized market research panels to acquire their sample. The subsample was then selected from the original sample, and only included participants who reported either a Democrat or Republican party alignment. After relevant filtering, the final subsample consisted of 2,807 participants. Within the sample, 1,535 participants reported a Democratic affiliation, with a mean age of 46.25 ± 17.04 years. 1,272 participants reported a Republican affiliation, with a mean age of 48.38 ± 16.67 years.

Materials and Procedure

The current study utilizes a correlational design, which investigates the relationship between two variables: partisanship and self-reported mask-wearing. Goldberg et al. (2020) utilized survey methods to collect demographics and relevant data from the sample in the early stages of the pandemic. The following demographic characteristics were requested of respondents: age, ethnicity, education level, region, sex (Male, Female), and political party (Republican, Democrat, No affiliation, Independent). Two categories of partisanship were measured: Democrat and Republican.

Another section of the survey examined participants' values and behaviours. This included trust regarding information about COVID-19, consumption of various media, personal beliefs, political beliefs, and preventative behaviours at a total of 27 items. 23 of those items then measured COVID-19 preventative behaviours specifically. The question stem is as given: "which, if any, of the following actions have you taken because of the spread of the coronavirus?" (Goldberg et al., 2020). To measure mask-wearing behaviours specifically, the participants were asked whether they had "worn a mask in public to help protect [them]selves or others from getting sick". Participants responded regarding their engagement with the behaviours. Answers were coded, with 0 corresponding to: "No, I prefer not to" or "No, I'm not able to", and 1 corresponding to: "Yes". Missing answers corresponded to: "don't know", or "does not apply".

Participants completed the above survey concerning health behaviours, then completed a demographic section of the survey (see Goldberg et al., 2020 regarding survey material). In the current study, further examination of partisanship on mask-wearing behaviours was conducted. Mask-wearing behaviours were measured via frequency of the mask-wearing response in either group, and a percentage of both political groups who responded 'yes' and 'no' to the mask-wearing item on the survey. Prior research in the field by Bruine de Bruin et al. (2020) utilized similar survey methods to examine COVID-19 mask-wearing, which justifies the current methods. However, a numerical scale indicating willingness to wear masks found a disproportionate cluster around the median response option, which the researchers attributed to uncertainty in their response. Thus, this uncertainty may be eliminated in the current study by reducing the answers possible to a binary 'yes' or 'no' option.

RESULTS

Data Preparation

Before conducting any data analysis, data was processed via R, a statistical programming software (v4.0.3; R Core Team, 2020) through the RStudio Integrated Development Environment (v1.4.1103; RStudio Team, 2019). The subsample was obtained from the original sample using the R package tidyverse (v1.3.1; Wickham et al., 2019), filtered to include only participants who reported Democratic or Republican affiliation. Incomplete responses were excluded from the sample. The data was split into Democrat and Republican participants, and the percentage of group members that responded with 'yes' or 'no' for mask-wearing behaviours was calculated. A bar plot was generated using the R package ggplot2 (v3.3.3; Wickham, 2016), and displays the frequency of mask-wearing in participants for both groups.

Data Analysis

To evaluate the hypothesis that Democratic political affiliation would report higher levels of mask-wearing, descriptive analysis in the form of a bar plot and sample percentages were utilized (detailed above in data preparation). Figure 1 depicts how responses to mask-wearing differ with political affiliation. Figure 1 shows that participants with Democratic affiliation more often reported mask-wearing behaviour than not. In comparison, the Republican sample reported more negative responses to mask-wearing.

For clarity, Table 1 shows the total number and percentages of participants for each response. As seen in Table 1, a higher number of Democrats reported mask-wearing in comparison to Republicans, with 55.11% and 44.58% of each sample respectively reporting 'yes'. Furthermore, Republicans were more likely to report no mask-wearing, at 55.42% of the sample, in comparison to 44.89% of Democrats. Taken together, this suggests that there is a tendency for Democrats to wear masks, whereas Republicans will tend towards not wearing masks, and that there exists a proportional gap between the levels of mask-wearing in Democrats and Republicans.

Table 1: Total Percentage of Democrat and Republican Response to Mask-Wearing

Partisanship	Mask-Wearing Response	N	Percentage (%)
Democrat	No	689	44.89
Democrat	Yes	846	55.11
Republican	No	705	55.42
Republican	Yes	567	44.58

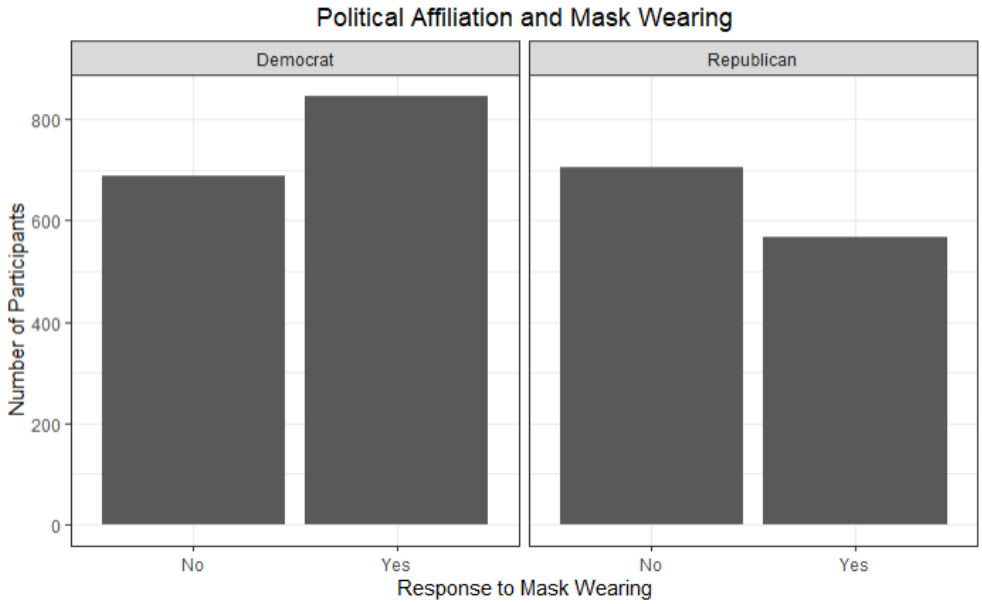

Figure 1: Democrat and Republican Report of Mask-Wearing

Although the above finds support for the hypothesis that there is an association between partisanship and mask-wearing, further chi-square analysis may determine whether these findings are significant. A chi-square test determines whether values differ significantly between categorical conditions. The assumptions for a chi-square analysis entail that the sample size is sufficiently large, and randomly sampled from the population. Moreover, the variables under examination must be categorical, and the participants' responses must be independent of each other. The expected frequencies for each condition (which details the expected number of responses within a category) must also be sufficiently large.

Visual observation finds that the data meet these assumptions for further analysis, and a cross-tabulation chi-square analysis revealed a significant association between mask-wearing and partisanship (χ^2(df = 1, N = 2807) = 30.90; p < .05). This is elaborated upon by the effect size, denoted by Cramér's V (V = .1), which shows that there is a small but significant effect of partisanship on mask-wearing response. Thus, the above analysis determines that there is a significance in the data, i.e., that response to mask wearing varies systematically according to either Democrat or Republican alignment. However, it does not denote where this significance lies in the data: do Democrats and Republicans differ significantly in their likelihood to report wearing or not wearing masks? Further chi-square analyses on the individual partisan categories were carried out to examine this, demonstrating that Democrats were significantly associated with likelihood to report mask-wearing (χ^2(df = 1, N = 1535) = 14.00; p < .05, Phi = .10), whereas Republicans displayed significant preference for not wearing masks (χ^2(df = 1, N = 1272) = 16.90; p < .05, Phi = .12). This aligns with the hypothesis that partisanship was significantly associated with frequency of reported mask-wearing, so the null hypothesis is accordingly rejected.

DISCUSSION

The current study investigated the partisan divide in the US as contextualized in the initial stages of the COVID-19 pandemic, and aimed to examine if partisanship would be associated with preference for self-reported mask-wearing behaviour. An examination of the current findings aligned with the experimental hypothesis, finding a significant association between partisanship and preference for mask-wearing. Further analysis suggested that Republicans were significantly more likely to report not wearing masks, whereas Democrats were significantly more likely to report wearing masks. The observed effect size for all associations above were small.

With consideration for methodology and context, the current results replicate prior findings successfully and substantiate recent research trends suggesting that political partisanship is associated with mask-wearing behaviour across polarized political groups. In particular, Huang, Huang and Huang (2021) find that Republicans reported significantly more instances where they did not wear masks in the early stages of the pandemic, in comparison to Democrats. This aligns with the current study, where Republicans tended towards self-reporting that they did not wear masks. Moreover, Howard (2021) suggests that face masks are linked with political information, which validates self-reported mask-wearing as a measure for the direct association between partisanship and health behaviours (Milosh et al., 2021). Partisanship therefore emerges as a key factor that influences mask-wearing over political ideology, and supports the aforementioned emphasis on external factors that influence mask-wearing attitudes and behaviours. In conjunction with the existing literature on political information theories, the observed trends in the current study may direct attention towards external partisan factors that account for mask-wearing differences. Findings by Baxter-King et al. (2022) provide additional context and nuance: partisan divides for mask-wearing were largest in Republican neighbourhoods, and less apparent in Democratic areas, which emphasizes the importance of the external political context in driving demographic trends for not wearing masks. This would also provide tentative explanation for the Republican trends in the current study: Republican tendency towards not wearing masks was slightly more pronounced than Democratic preference to wear masks, and would emphasize the increased polarization and effect of party membership in Republican ingroups (see Rodriguez et al., 2017).

The wider literature highlights the role of partisan messaging in media and from elite political figures and ultimately validates an emphasis on external partisan considerations in future research. Thus, drawing upon the existing literature may prove informative of applications for public health campaigns and

policy. Huang, Huang and Huang (2021) suggest that pandemic awareness campaigns on a policy level should seek to target Republican groups, given that anti-mask-wearing trends were especially prevalent in their demographics. In doing so, it becomes critical to examine how interventions consider partisanship factors and not political ideology to increase their efficacy. Gelfand et al. (2022) assert that mask-wearing remains a predominantly partisan issue, but proposed interventions that targeted the political values associated with partisan groups. Although the authors hypothesized that appealing to political values (i.e., conservative ingroup loyalty) would increase mask-wearing behaviour, their findings suggested there was no significance. This contradicts prior findings that implicated political values in mask-wearing behaviour (see Kemmelmeier and Jami, 2021), and ultimately reveals the importance of shifting focus towards external messaging to yield effective behaviour interventions and outcomes. Gadarian (2021) stresses that message propagation by political elites must align with official health communication to compensate for the bipartisan gap in mask-wearing effectively, and reduce informational conflict in the media environment. Given that the current study is based on case-specific data, further directions may seek to replicate these findings in more controlled conditions, with considerations for the impact of political information, rather than internal values, to develop effective public health interventions.

Closer comparison of the effect sizes in the current study with the wider literature is warranted, where effect size confers the strength of a relationship within the sample. Howard (2021) finds significant medium-sized effects for mask-wearing in relation to partisanship, which strikes a contrast with the small effect size observed in the current study. This may be attributed to the difference in sample sizes, where Howard (2021) utilized a notably smaller sample of 508 in comparison to the current study. This has implications for the general size of the effect within the population as sample size increases; it may be the case that the smaller effect in the current findings is more representative of the real-life effect in the population at the time of data collection, and highlights a strength of the current study.

At the same time, methodological limitations for the current study must be considered. Goldberg et al. (2020) utilized a single question to measure mask-wearing but observed conflation between preference for not wearing a mask and inability to wear a mask. Although attitudes may be accurate indicators of not wearing a mask, this does not map directly onto behaviour, that is, although an individual may display positive preference towards mask-wearing, this does not translate directly into consistent mask-wearing behaviour with the consideration for non-political barriers in health behaviours (i.e., peer pressure, physical and/or social discomfort; Shelus et al., 2020). As Shelus et al. (2020) further explains, people chose not to wear masks due to physical discomfort or peer pressure within the local community. The conception of inability may therefore not be wholly explained by politicization, but rather social cues and context. As the current study utilized data from Goldberg et al. (2020), little control is exerted over the methods employed by the original authors, and renders the current findings lacking in analysis of the reasons for which individuals chose not to wear masks. Future directions could therefore seek to elaborate on whether political barriers as examined here present a significant interaction with other factors that facilitate mask-wearing.

Furthermore, the current methods yielded correlational findings, which suggests an association between Republican partisanship and anti-mask behaviours. However, it remains unclear as to whether partisanship influences mask-wearing, or if mask-wearing influences partisanship in the current context. Certainly, prior evidence merits this claim: Killian and Wilcox (2008), for example, propose that health attitudes could reversely influence party alignment, and therefore find uncertainty in the interplay between health attitudes, behaviours, and their relationship to political factors. Further work could seek to clarify this relationship, examining if mask-wearing determines party affiliation, or vice versa. Moreover, the current study is based on data collected at the start of the pandemic in April 2020, and may pertain only to trends of that time. Given the rapid development of the pandemic, drastic polarization in trends has been observed, particularly for mask-wearing (see Huang, Huang and Huang, 2022), and the findings may not be wholly representative of developments in the current time and worldwide context. The current findings serve as an insight into a certain timepoint of the pandemic, and more elaboration is needed to investigate longitudinal effects of mask-wearing and partisanship. Gadarian (2021) notes that Republican bias for not wearing masks is also at odds with the traditional position held by political parties, and so the current findings may be taken only as an explanation of the phenomenon within the US context. To a certain extent, the findings may be generalizable to recent research on other COVID-19 health behaviours in the US, such as vaccination uptake rates (Pink et al., 2021), but prior literature has established that political trends are reversed for parties in similar political positions in the UK (Klymak and Vlandas, 2022). Given that parties with similar political alignments hold different stances on health behaviour across the world, uncertainty remains in establishing a holistic association.

CONCLUSION

The current study found a significant association between partisanship and self-reported mask-wearing in the early stages of the pandemic in the US, and is merited for its representative sample. Particularly, Republicans were significantly associated with preference to not wear masks, thus validating prior findings in the field. The current findings also provide an exploratory view into the unique political context of the US, particularly in comparison to phenomena observed in cross-regional political climates, and raises further questions into cross-cultural political contexts for investigation. By confirming prior findings, this study highlights the body of literature that considers partisan factors such as political messaging and elite figures in constructing effective health campaigns and guidelines; cooperation on a politically elite level proves critical to shift public opinion on the pandemic via media platforms. Although such applications seem uniquely consolidated within the US context, the current study finds rich application to further research on the influence of external political factors on individual health attitudes and behaviours, which remains particularly prevalent as research and context continues to develop on the pandemic.

ACKNOWLEDGMENTS

I would like to express my gratitude to Dr Phil McAleer and Dr Helena Paterson for their insight and advice on this paper.

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