

## Crynodeb Cyflym o Dystiolaeth Canolfan Dystiolaeth COVID-19 Cymru (WCEC)

### Rhwystrau a hwyluswyr ar gyfer magu ymddygiadau diogelu personol mewn amgylcheddau cyhoeddus Rhif adroddiad RES\_00015 Ionawr 2022

#### CRYNODEB O'R PRIF BWYNTIAU

##### **Beth ydy Crynodeb Cyflym o Dystiolaeth?**

Briff dystiolaeth interim i ddarparu sail ar gyfer gwaith pellach a sicrhau bod darganfyddiadau allweddol ar gael yn gynnar. Mae'r adroddiad wedi'i seilio ar chwiliad cyfyngedig o adnoddau allweddol ac asesiad o gynodebau a data testun llawn cyfyngedig. Rhoddir blaenoriaeth i astudiaethau sy'n cynrychioli cyfuniad dystiolaeth gadarn. Nid yw ansawdd yn cael ei werthuso ac nid yw dystiolaeth yn cael ei chyfuno, a dylid bod yn ofalus wrth ddehongli darganfyddiadau.

##### **Cefndir / Nod yr Adolygiad Cyflym**

Mae ymddygiadau diogelu personol, fel gwisgo gorchuddion wyneb, cadw pellter cymdeithasol, hylendid dwylo, moesau anadlol a sicrhau bod yr awyru'n effeithiol yn allweddol i helpu i gyfyngu ar ledaenu COVID-19. Gall glynu at ymddygiadau o'r fath fod yn arbennig o bwysig mewn amgylcheddau a allai fod yn llawn pobl. Bydd deall y rhwystrau a'r hwyluswyr ar gyfer magu ymddygiadau diogelu personol yn galluogi'r rheini sy'n gwneud penderfyniadau i sicrhau y glywir yn well atynt mewn amgylcheddau amrywiol trwy'r cyfarwyddyd a'r cyngor a roddir, yn gyffredinol a hefyd o ran amgylcheddau penodol.

##### **Darganfyddiadau Allweddol**

Cynhwyswyd 21 o adolygiadau o dystiolaeth eilaidd, a nodwyd 5 arall o adolygiadau systematig/cyflym parhaus.

##### *Graddau'r sylfaen dystiolaeth*

- Dim ond 6 adolygiad oedd yn disgrifio'r amgylcheddau y bu'r astudiaethau sylfaenol a gynhwyswyd yn yr adolygiad yn eu gwerthuso, ond nid oedd y mwyafrif o'r rhain yn benodol iawn gan eu disgrifio fel lleoedd cyhoeddus, lleoedd llawn pobl a digwyddiadau cyhoeddus (roedd 3 adolygiad yn cynnwys astudiaeth o drafndiaeth gyhoeddus); roedd 15 adolygiad yn adrodd ar ymddygiadau diogelu personol a oedd wedi'u magu mewn amgylcheddau cymunedol generig (amhenodol).
- Roedd 9 adolygiad yn canolbwyntio ar ymddygiadau diogelu personol penodol: cadw pellter cymdeithasol (n=7); gwisgo masg (n=1), a chadw pellter cymdeithasol a masgiau wyneb (n=1). Roedd un o adolygiadau'r Du (adroddiad ar dystiolaeth) yn ymchwilio i gadw pellter cymdeithasol ar drafndiaeth gyhoeddus.
- Nodwyd rhwystrau a hwyluswyr ar gyfer ymddygiadau diogelu personol yn bennaf o astudiaethau sylfaenol oedd wedi'u cynnal mewn gwledydd nad ydynt yn aelodau o'r Sefydliad ar gyfer Cydweithrediad a Datblygiad Economaidd ac ar gyfer pandemigau heblaw am COVID-19, gan gynnwys SARS, y ffliw H5N1, a'r ffliw H1N1

##### *Diweddaredd y sylfaen dystiolaeth*

- Cafodd 17 o adolygiadau eu cyhoeddi yn 2020-21, ond roedd y dystiolaeth a gynhwyswyd yn gysylltiedig â phandemigau cynharach a oedd wedi digwydd rhwng 2004 a 2011.

### *Tystiolaeth o effeithiolrwydd*

- Mae'r dystiolaeth ynglŷn â rhwystrau a hwyluswyr ar gyfer magu ymddygiadau diogelu personol yn deillio o amgylcheddau cyffredinol ac mae'r dystiolaeth o amgylcheddau penodol yn gyfyngedig.
- Mae **ffactorau sy'n gysylltiedig â glynu'n well** at ymddygiadau diogelu personol yn cynnwys bod yn hŷn, bod yn fenyw, bod yn fwy addysgedig, heb fod yn wyn, statws economaidd-gymdeithasol uwch, mwy o hyder yn y llywodraeth, amgyffrediad mwy o risg o COVID-19, dysgu am bethau trwy'r cyfryngau newyddion traddodiadol, rhagdueddiadau canfyddedig, mwy o ffydd yn effeithiolrwydd ymddygiadau diogelu personol a lefelau uwch o orbryder yn gyffredinol.
- Roedd defnyddio'r cyfryngau cymdeithasol a chredu mewn damcaniaethau cynllwyn yn gysylltiedig â glynu'n waeth.
- Mae **rhwystrau rhag cadw pellter cymdeithasol a gwisgo masgiau** yn cynnwys effaith niweidiol ganfyddedig a'r potensial i ddenu stigma cymdeithasol, diffyg gwybodaeth a dealltwriaeth o effeithiau, cyfyngiadau ar adnoddau, credoau ynglŷn â throsglwyddo haint, perygl personol o ddatblygu haint anadlol, a phrofiad neu amgyffrediad o anghysur personol a theimlo'n annifyr. Nid oedd gorfodi'r gyfraith (fel ffordd ganfyddedig i atal torgyfraith) yn gysylltiedig â glynu.
- Cydnabuwyd y gallai glynu at rai ymddygiadau wanhaus dros amser.

### *Tystiolaeth o'r ansawdd gorau*

- Adolygiad Hanratty et al., 2021 oedd yr adolygiad mwyaf cadarn a oedd yn adrodd ar ddata ynglŷn ag amgylcheddau.

### **Goblygiadau i Bolisi**

- Nododd yr adolygiad grwpiau penodol a oedd yn fwy neu'n llai debygol o lynu at ymddygiadau diogelu personol, a gellir defnyddio hyn i ddarparu sail ar gyfer **teilwra cyfarwyddyd a chyngor**.
- Daw mwyafrif y dystiolaeth o bandemigau heblaw am COVID-19, neu'r don gyntaf o'r pandemig presennol. Mae yna **ansicrwydd ynglŷn â natur drosglwyddadwy'r dystiolaeth hon** i'r pandemig COVID-19 a'i donnau dilynol, ac mae angen gwaith pellach i werthuso sut a beth sy'n achosi unrhyw newidiadau mewn glynu trwy gydol y pandemig.
- Nodwyd pum adolygiad systematig/ cyflym parhaus perthnasol a allai ddarparu tystiolaeth bellach i ddarparu sail ar gyfer arfer neu bolisi yn y dyfodol agos.
- Mae angen **ymchwil sylfaenol bellach** ar lynu at ymddygiadau diogelu personol mewn amgylcheddau a allai fod yn llawn pobl, fel trafndiaeth gyhoeddus.

### **Cryfder y Dystiolaeth**

Mae'r dystiolaeth o rwystrau a hwyluswyr ar gyfer magu ymddygiadau diogelu personol yn deillio o adolygiadau mapio ac adolygiadau systematig sy'n bodoli, gyda chwiliadau wedi'i diweddarau a gwaith parhaus yn eu hategu. Fodd bynnag, ni chynhaliwyd unrhyw asesiad o ansawdd fel rhan o'r adolygiad, ac roedd mwyafrif yr adolygiadau'n dibynnu ar **dystiolaeth anuniongyrchol o bandemigau eraill**. Mae'r dystiolaeth ynglŷn ag ymddygiadau diogelu personol mewn gwahanol amgylcheddau'n llai sicr. Nid oedd yr un o'r adolygiadau a oedd yn adrodd ar amgylcheddau yn adolygiadau systematig (neu gyflym). Dim ond un adolygiad (adroddiad ar dystiolaeth) oedd wedi gwerthuso'r sylfaen dystiolaeth ar gyfer magu ymddygiadau diogelu personol mewn amgylchedd penodol, a oedd wedi'i gyfyngu i gadw pellter cymdeithasol ar drafnidiaeth gyhoeddus.

### **Dylid dyfynnu'r crynodeb cyflym o dystiolaeth hwn fel a ganlyn:**

Crynodeb cyflym o dystiolaeth o rwystrau a hwyluswyr ar gyfer magu ymddygiadau diogelu personol mewn amgylcheddau cyhoeddus. Adroddiad RES\_00015. Canolfan Dystiolaeth COVID-19 Cymru, Ionawr 2022

[http://www.primecentre.wales/resources/RES/RES00015\\_Wales\\_COVID-19\\_Evidence\\_Centre\\_Rapid\\_Evidence\\_Summary\\_of\\_Barriers\\_and\\_facilitators\\_to\\_uptake\\_of\\_20Personal\\_protective\\_behaviours\\_in\\_public\\_places\\_January\\_2022-cy.pdf](http://www.primecentre.wales/resources/RES/RES00015_Wales_COVID-19_Evidence_Centre_Rapid_Evidence_Summary_of_Barriers_and_facilitators_to_uptake_of_20Personal_protective_behaviours_in_public_places_January_2022-cy.pdf)

**Ymwadiad:** Barn yr awduron yw'r rhai sydd wedi'u mynegi yn y cyhoeddiad hwn, yn hytrach na barn Ymchwil Iechyd a Gofal Cymru o reidrwydd. Mae WCEC ac awduron y gwaith hwn yn datgan nad oes ganddynt unrhyw fuddiannau sy'n gwrthdaro.

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**Wales COVID-19 Evidence Centre (WC19EC)  
Rapid Evidence Summary**

**Barriers and facilitators to the uptake of personal protective  
behaviours in public settings  
Report number RES\_00015 January 2022**

**FULL REPORT**

**1. What is a Rapid Evidence Summary?**

Rapid Evidence Summaries are designed to provide an interim evidence briefing to inform further work and provide early access to key findings. They are based on a restricted search of key resources and the assessment of abstracts and limited full text data. Priority is given to studies representing robust evidence synthesis. No quality appraisal or evidence synthesis are conducted, and the summary should be interpreted with caution.

**2. Production of this Rapid Evidence Summary**

The following individuals were involved in the Rapid Evidence Summary process and production of this report:

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**3. Requesting stakeholder group(s)**

Welsh Government Technical Advisory Group (TAG): Risk Communication & Behavioural Insights Subgroup

**4. Context / Background**

Personal protective behaviours (PPBs) such as wearing face coverings, social distancing, hand hygiene, respiratory etiquette and ensuring proper ventilation have been an important and successful evidence-based public health intervention to help limit the spread of COVID-19 during the pandemic so far. As tighter restrictions eased, these PPBs became critical to ensure we continued to limit the impact and spread of the virus. This has now been accentuated again by the Omicron wave. Although adherence around COVID-19 guidance has generally been high, adherence to PPBs appears to vary between different socio-demographic groups and is influenced by many drivers. In addition, adherence to certain measures appear to be waning, despite more people travelling to and from work. It is acknowledged that human behaviour is driven by multiple factors, which is likely to influence these varying levels of adherence. This is evident in the disparity among people's PPBs in

different environments. Understanding the barriers and facilitators to uptake of these behaviours will enable policymakers to better understand why some people are non-compliant in specific settings and thus better inform and tailor guidance and advice.

#### 4.1. Purpose of this report

This RES seeks to identify barriers and facilitators to the uptake of PPBs by adults in general public settings (such as public transport, shops and crowded areas) to better understand these behaviours within different settings.

#### 5. Research question

<b>Review question</b>	
<i>What are the barriers and facilitators to facilitate uptake of personal protective behaviours (face coverings, social distancing, hand hygiene, respiratory etiquette and ventilation) by adults in different settings including public transport (buses and trains), shops and crowded areas?</i>	
<b>Participants</b>	Adults in general public settings (including indoor and outdoor settings)
<b>Intervention / exposure</b>	Personal protective behaviours, specifically; face coverings, social distancing, ventilation, hand hygiene, (hand sanitiser use on public transport), respiratory etiquette (sneezing, coughing into elbow)
<b>Comparison</b>	No personal protective behaviours
<b>Outcomes</b>	Barriers and facilitators of adherence to the intervention (including demographic characteristics, or potential and observed perceptions such as attitudes, beliefs, emotions, knowledge etc.)
<b>Study design</b>	Secondary and tertiary evidence
<b>Other Study Considerations</b>	
<p>Only evidence published in the English language were considered.</p> <p>Sources that examine relevant personal protective behaviours in the context of viruses that cause severe respiratory illness and are transmitted in a similar way to COVID-19 (primarily respiratory droplets and aerosols, as well as direct and indirect contact), including seasonal influenza, influenza A (H1N1), influenza H5N1, SARS and MERS-CoV were also considered for inclusion.</p> <p>Reviews conducted prior to 2010 were excluded.</p> <p>Reviews that focus on the use of PPB in settings, which are not open to the general public – such as work environments, were excluded.</p>	

## 6. Summary of the evidence base

### 6.1 Type and amount of evidence available

**Twenty-six secondary sources** were identified: eight systematic reviews, four rapid reviews, four scoping or mapping reviews, two evidence reports, two literature reviews, one evidence summary, and five ongoing reviews. Of the five ongoing reviews, three are SRs (one of which is a living SR) and two are RRs.

**Table 1. Summary of review evidence identified**

Evidence type	Total identified	Comments
Systematic reviews (SRs)	8	
Rapid reviews (RRs)	4	
Scoping or mapping reviews	4	One living (currently being updated) evidence and gap map
Protocols for reviews that are underway (details in Table 4)	5	3 systematic reviews (1 living SR; due Spring 2022) 2 rapid reviews
Other	5	2 evidence reports 2 literature review 1 evidence summary

A more detailed summary of included evidence can be found in Tables 2, 3 and 4. This includes a summary of the specific settings and theoretical perspectives used in their syntheses. Secondary sources that identified barriers and facilitators for using PPBs in specific public settings in their syntheses are presented separately to secondary sources that did not specify settings within their syntheses (Tables 2 and 3, respectively). Ongoing reviews are also presented separately (Table 4). Only nine secondary sources purported using a theory informed syntheses of the evidence on behaviour.

Nine secondary sources focussed on specific PPBs. **Seven** (three systematic reviews, one rapid review, one scoping review, one evidence report and one protocol) were specific to **social distancing**. **One** literature review focussed on **mask wearing**, and **one** evidence summary focussed on **social distancing and face masks**. The remaining secondary sources reported on non-pharmaceutical interventions that aimed to reduce the transmission of COVID-19 or other acute respiratory infections, including social distancing, face masks, hand hygiene, social isolation and quarantine. The majority of secondary sources appeared to focus on the general population, although this was not well reported. Of the 26 secondary sources, **most included evidence relating to earlier pandemics** that occurred between 2004 and 2011.

**Six** secondary sources extracted data from the primary studies on settings. However, these were mostly non-specific and described as **public places, crowded places and public**

**events.** Three secondary sources identified studies that evaluated PPBs on **public transport** (Bish and Michie, 2010; Hanratty et al., 2021; HCCBCU, 2020). However, only **one** of these secondary sources specifically aimed to evaluate PPBs (**social distancing**) on **public transport** (HCCBCU, 2020), and examined public perceptions and behaviours in response to the evolving COVID-19 pandemic. This was an evidence report that did not provide details about the included sources, but did acknowledge that behavioural research evidence specifically related to social distancing on public transport in England is limited. The authors, therefore, considered the application of broader research on adherence to this context.

There was some overlap of included primary studies among the six secondary sources reporting findings on any settings. Of those reporting their included primary studies, there were around **20 primary studies** included across multiple secondary sources. These were mostly duplicated across two secondary sources (n=16). One primary study, published in 2004, examining factors influencing the wearing of facemasks to prevent severe acute respiratory syndrome among Chinese in Hong Kong was included across four secondary sources. The majority of the primary studies were published between 2003 and 2011, although one cross-sectional study published in 2020 which examined the attitudes and beliefs of Australian adults towards the COVID-19 pandemic and willingness and capacity to engage with mitigation measures was included across two secondary sources.

Two of the six secondary sources were published prior to the COVID-19 pandemic (Bish and Michie, 2010; Sim et al., 2014), the remaining four were published in 2020 or 2021, and although published to inform the COVID-19 response, two utilised indirect evidence from prior pandemics to inform the COVID-19 response (Hanratty et al., 2021; Seale et al., 2020). Two secondary sources (Ernawati et al., 2021; HCCBCU, 2020) included primary studies directly on COVID-19. One of these (Ernawati et al., 2021) aimed to determine community knowledge, attitudes and behaviours in preventing the transmission of COVID-19. However, no quality assessment of the ten included cross-sectional studies appears to have been undertaken and the source only mentioned crowded places in terms of avoidant behaviour, rather than anything specific to barriers and facilitators of PPBs.

Our searches identified several outputs from the **COVID Health Related Behaviour Review** (COHeRe) project, funded by UK Research and Innovation. This project aims to help us understand more about the factors that influence behaviours such as washing your hands, wearing a facemask and social distancing in the general public. Outputs already published include one rapid review (Hanratty et al., 2021) and an evidence and gap map (COHeRe 2021b). Ongoing work includes a series of living systematic reviews on individual behavioural determinants. Authors have advised they hope the first systematic review will be available in spring 2022, and will be updated at least until October 2022.

## 6.2 Key Findings

### 6.2.1 General key findings

- Secondary evidence related to PPBs in settings were mostly drawn from indirect evidence obtained from previous respiratory viral pandemics (such as the SARS, H5N1 influenza, and H1N1 influenza).
- Primary studies included in the secondary sources were from a number of countries including UK, USA, China, Hong Kong, Korea and Taiwan. Barriers and facilitators of

PPBs were mostly identified from studies conducted in **non-OECD countries**, so may not be generalisable to Wales.

- Theoretical perspectives utilised by the secondary sources included: Behaviour Change Wheel Framework (including COM-B), Expected Utility Theory, Health Belief Model, the Social Cognitive Theory, Theoretical Domains Framework and Theory of Planned Behaviour.
- **Factors relating to higher rates of adherence** to mask wearing, hand hygiene and social distancing include being **older**, identifying as **female**, being more **educated**, being non-white, **higher socio-economic** status, increased **trust in government**, increased **risk perception** of COVID-19, accessing information through **traditional news media**, perceived susceptibility, greater **belief in effectiveness** of recommended protective behaviours and heightened levels of **general anxiety**.
- Barriers to PPBs including isolation and social distancing may include **perceived adverse impact and potential to attract social stigma**.
- The use of **social media as a source of information and belief in conspiracy theories** was associated with less adherence to PPBs including hand hygiene, wearing of face coverings, and physical distancing, compared to those who used traditional news media.
- **Potential barriers to social distancing and masking** include **lack of knowledge** and comprehension about a behaviour and its consequences, and being uncomfortable or unsure how to ask others to remain distanced. **Opportunity barriers** include **time** and **resource constraints** that make a desired behaviour more difficult or costly to carry out. **Motivation barriers** include emotional reactions and **inaccurate beliefs** that create obstacles for carrying out a behaviour. Other barriers include beliefs about infection transmission, personal vulnerability to respiratory infection, and **experience or perception of personal discomfort and sense of embarrassment**. Law enforcement (as a perceived deterrent) was not associated with adherence in two secondary sources.
- The COHeRe project is currently ongoing and will comprise a series of living systematic reviews and an evidence and gap map on individual behavioural determinants, to reduce the spread of COVID-19. A rapid review has already been completed (Hanratty et al., 2021, Table 2) and the evidence and gap map outlining the sources identified in the rapid review is published online. The map will be updated with the evidence identified from the systematic reviews which are currently being undertaken. Authors advised they aim to publish these systematic reviews in spring 2022.

## 6.2.2 Key findings related to specific settings

- Secondary evidence relating to understanding the barriers and facilitators of PPBs in specific settings is limited. We identified six secondary sources that reported on settings in their findings (Table 2). These were mostly non-specific settings such as public places and crowded places. Two sources used indirect evidence from earlier pandemics to inform COVID-19 practice (Seale et al., 2020; Hanratty et al., 2021), and two utilised primary studies directly from the early phases of the COVID-19 pandemic (Ernawati et



al., 2021; HCCBCU, 2020). Two studies were published prior to the COVID-19 pandemic (Bish and Michie, 2010; Sim et al., 2014).

- Of the six secondary sources reporting data on settings, only one of these specifically set out to look for evidence relating to various modes of public transport settings (HCCBCU, 2020). The remaining five aimed to identify key demographic determinants of protective health behaviours among the general population with no particular emphasis on settings.
- **Social distancing on public transport** may be increased by **reducing the perceived costs** of performing a behaviour and creating a **sense of a shared identity** or common fate. The Hertfordshire County Council Behaviour Change Unit (HCCBCU, 2020) acknowledged adherence to social distancing was likely to wane over time, particularly when end dates for adherence were uncertain. Fear of the virus, police or law were not significant factors. This work (HCCBCU, 2020) was conducted to inform practice during the COVID-19 pandemic, but noted that behavioural research evidence specifically related to social distancing on public transport in England is limited, and therefore considered the application of broader research on adherence to this context.
- Sociodemographic factors associated with (risk) **avoidant behaviours** in settings such as public transport and crowded places include being female, older age, and being of non-White ethnic background (Bish and Michie, 2010; Hanratty et al., 2021). Findings were from other respiratory pandemics and mostly drawn from primary studies set in non-OECD countries, and may not be generalisable to the current pandemic or the Welsh context. Knowledge about the H1N1 virus was found to be positively related to avoiding crowds (Hanratty et al., 2021).
- Evidence from the H1N1 influenza outbreak suggests that individuals who perceived mask wearing to be an effective self-protection measure and those who perceived H1N1 infection to have a very high fatality rate, were significantly more likely to wear facemasks in public areas (Sim et al., 2014).

### 6.3 Areas of uncertainty/Evidence gaps

Remaining uncertainties include:

- Many of the secondary sources identified included primary evidence from non-COVID-19 pandemics or the first wave of the current outbreak. Sources did acknowledge adherence to some behaviours may wane over time.
- There is **uncertainty around the transferability of this evidence** to the COVID-19 pandemic and its subsequent waves, and further work is needed to evaluate how and what determines any changes in adherence over the duration of a pandemic.
- It is possible that some drivers of PPBs are COVID-19 specific, and the reviews included will not have identified these.
- Our inclusion criteria focussed on individual barriers and facilitators around PPBs. However, we did identify a number of sources looking at **behaviour change interventions** that may increase adherence to PPBs. These were not included but may be relevant if considering implementing interventions to increase adherence.

- Limited evidence was identified for **public transport**, but no other specific settings, such as **night clubs** were identified. However, settings were not well defined among the secondary sources identified and it is unclear if findings would be transferable across all types of settings. It may be possible we did not identify all the evidence relating to specific settings as we only looked for secondary sources.
- Five protocols outlining ongoing systematic and rapid reviews were identified (Table 4). Although we are unsure of publication dates at present, they may be relevant to this review topic and are likely to contribute to the current body of evidence. None of the protocols identified stated that they intend to investigate specific settings as part of their analyses.
- It is uncertain if or how any **new variants of concern, the current vaccination programme and the duration and longevity of the pandemic** may impact individual PPBs.

## 6.4 Options for further work

We identified some ongoing systematic reviews including a Cochrane systematic review (Ryan et al., 2021a) which builds on an already published rapid review (Ryan et al., 2021b), and the COHeRe project (COHeRe, 2021a/2021b). The living systematic reviews and evidence and gap map being undertaken by the COHeRe project appear highly relevant to our review question, but these are not due to be published until spring 2022, at the earliest. There appears to be a lack of primary evidence relating barriers and facilitators to PPBs in specific settings. Therefore it may be useful to consider **commissioning primary research** on this topic in specific settings. It would also be pertinent to revisit the ongoing systematic reviews.

## 7. Next steps

In view of the limited available evidence regarding barriers and facilitators of PPBs within different public settings, it was decided, in consultation with the stakeholders, **not to proceed to a (more detailed) rapid review**. It is anticipated that ongoing reviews, in particular those conducted as part of the COHeRe project and the Cochrane review, will be able to provide further evidence to inform practice or policy in the near future.

## 8. Methods used in this Rapid Evidence Summary

COVID-19 specific and general repositories of evidence reviews noted in our resource list were searched between 11<sup>th</sup> and 12<sup>th</sup> November, 2021. An audit trail of the search process is provided within the resource list (Appendix). Searches were limited to English-language publications and did not include searches for primary studies as secondary research relevant to the question was found. Search hits were screened for relevance by a single reviewer.

Our initial assessment of secondary sources was based on the abstracts, as is usual practice for a RES. However, as information regarding specific settings was very limited in the abstracts, it was agreed with stakeholders to retrieve secondary sources at full text to investigate this further. Information regarding the settings, findings and theoretical perspectives from the full text of all secondary sources were obtained and used to populate

the tables in this report. However, we only scrutinised the six secondary sources that extracted data on settings in detail. Priority was given to robust evidence synthesis using minimum standards (systematic search, study selection, quality assessment, appropriate synthesis). However, no secondary research was formally quality assessed. The included secondary research varies considerably in quality, and the degree of such variation was not investigated in-depth. Citation, recency, evidence type, document status, PPE behaviour, setting and key findings were tabulated for all relevant secondary research identified in this process. We have also included comments about quality assessment of primary studies in the 'reviewers comments' column in Tables 2 and 3 for each secondary source.

<b>Date of Search</b>	November, 2021
<b>Search Concepts Used</b>	COVID-19, personal protective behaviours, barriers and facilitators
<b>Search Completed by</b>	Rocio Rodriguez Lopez, Public Health Wales Alesha Wale, Public Health Wales

## 9. Summary of included evidence

Table 2. Secondary sources identifying barriers & facilitators to personal protective behaviours in specific settings				
Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p>Bish A, Michie S. <a href="#">Demographic and attitudinal determinants of protective behaviours during a pandemic: a review</a>. <i>British journal of health psychology</i>. 2010; 15(4):797-824; doi: 10.1348/135910710X485826</p> <p>SR</p>	<p><b>Question/Aim:</b> To identify key demographic and attitudinal determinants of three types of protective behaviour during a pandemic: preventive, avoidant, and management of illness behaviours.</p> <p><b>Recency (search dates):</b> Not given.</p> <p>Databases searched for papers published since 2002.</p> <p><b>Specific settings stated:</b> Public places, large crowds and gatherings and public transport.</p> <p><b>Theoretical perspective:</b> SR authors did not appear to utilise a theoretical perspective in their review.</p> <p>However, reviewers described conceptual frameworks used in included studies, to better understand predictors of protective behaviour. Three of the included studies used a psychological theory, including the <b>expected utility theory, health belief model, theory of</b></p>	<p><b>Inclusion criteria:</b></p> <p><b>Population:</b> General population (excluding patient groups, healthcare workers).</p> <p><b>Behaviour:</b> Preventive, avoidant, or management of pandemic disease behaviours. Studies about avian influenza risk which focus solely on the handling of chickens or food consumption are not included, as they are less relevant to the hygiene and avoidance behaviour for protection against other pandemic influenzas. Studies of uptake of influenza vaccinations were excluded if they were not carried out in the context of a pandemic outbreak.</p> <p><b>Psychological variables and demographic characteristics</b> had to be included and associations between these and behaviours (reported, intended, or actual behaviour) reported.</p> <p><b>Date:</b> Published after 2002 (when SARS emerged as a pandemic).</p> <p><b>Language:</b> published in the English language.</p>	<p>Twenty-six papers of variable quality were included in the review. Most were cross-sectional design.</p> <p>Two Hong Kong studies found that <b>older people were more likely to avoid public places during the SARS outbreak and to report that they would avoid crowds in the event of an Avian flu outbreak.</b></p> <p>An internet survey carried out at the beginning of the Swine flu outbreak also found that <b>older age was associated with more avoidant behaviours, such as avoiding large gatherings, infected people, and public transport.</b></p> <p>A UK study found that participants from <b>non-White ethnic backgrounds were more likely than White</b> participants to take protective action and to adopt avoidant behaviours (e.g., avoiding large crowds or public transport). The same UK study also reported that <b>women were no more likely than men to avoid crowds and public places.</b></p>	<p><b>Non COVID-19 specific sources were included.</b></p> <p>This SR was published in 2010 during the H1N1 influenza (Swine flu) pandemic, and focuses only on SARS, Avian influenza/flu H5N1, and Swine influenza/flu H1N1.</p> <p>It is unclear from the full text if critical appraisal of included studies was undertaken.</p> <p>Some studies that included specific settings were conducted outside of OECD countries, so may not be generalisable to Wales.</p>

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	<p><b>planned behaviour and the social cognitive theory.</b></p>			
<p>Ernawati K, et al. <a href="#">Community knowledge, attitudes and behaviors in prevention of COVID-19 transmission: A systematic review</a>. <i>International Journal of Public Health Science</i>. 2021; 10(1):16-26. Doi: 10.11591/ijphs.v10i1.20664</p> <p>SR</p>	<p><b>Question/Aim:</b> To examine the community's participation in the prevention of COVID-19 transmission with a systemic review approach.</p> <p><b>Recency (search dates):</b> Not given. However, papers published between January and July 2020 were eligible for inclusion.</p> <p><b>Specific settings stated:</b> Crowded places.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p><b>Inclusion criteria:</b> Quantitative research, primary data, publication date (Jan-July 2020), English language, open access article, peer-reviewed article, full text articles and discussion on community participation on prevention of COVID-19 transmission.</p> <p><b>Exclusion criteria:</b> Qualitative research, literature other than articles, literature reviews, and health worker samples.</p>	<p>Ten articles were included in the review.</p> <p>Maintaining distance, doing social distancing, and <b>avoiding crowded places</b> showed significant results in 6 out of 8 articles. In one Ethiopian study, 33.2% of respondents reported avoiding crowded places, although the knowledge of this behaviour was high (90.3%).</p> <p><b>Using a mask when going out</b> and doing self-isolation gave statistically significant results in 2 out of 8 articles (25%).</p>	<p><b>No theoretical perspectives were stated.</b></p> <p><b>Sources specific to COVID-19 were included</b></p> <p>The SR appears well conducted and in line with PRISMA principles. However, it is unclear from the full text if critical appraisal of included studies was undertaken.</p> <p>Some studies that included specific settings were conducted outside of OECD countries, so may not be generalisable to Wales.</p>
<p>Hanratty J. et al. <a href="#">Determinants of health behaviours intended to prevent spread of respiratory pathogens that have pandemic potential: A rapid</a></p>	<p><b>Question/Aim:</b> 1. What factors determine uptake and adherence to the recommended health behaviours? 2. What factors do not determine uptake and adherence to the recommended health behaviours?</p>	<p><b>Inclusion criteria:</b></p> <p><b>Types of studies:</b> Any that quantify the relationship between a potential determinant and the extent to which an individual engages with one or more of the behaviours of interest. This includes cross-sectional and longitudinal studies.</p>	<p>Fifty-eight studies were included in the review. Most studies were conducted during the H1N1 influenza pandemic in 2009. Most examined the determinants of wearing a face covering, handwashing and social or physical distancing.</p> <p>In relation to specific settings authors found a small association between</p>	<p><b>Non COVID-19 specific sources were included</b> (most notably the 2009 H1N1 influenza pandemic).</p> <p>Methodological quality and potential for bias was assessed using the</p>

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<p><a href="#">review</a>. <i>Acta psychologica</i>. 2021; 220:103423; doi: 10.1016/j.actpsy.2021.103423</p> <p>RR</p>	<p>3. How largely do identified factors relate to uptake and adherence to the recommended health behaviours? What is the quality of this evidence?</p> <p><b>Recency (search dates):</b> August 3th to 5<sup>th</sup>, 2020.</p> <p><b>Specific settings stated:</b> Crowded places, public transport.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p><b>Population:</b> General public, any age, specific groups at risk.</p> <p><b>Behaviours of interest:</b> Commonly recommended behaviours to mitigate spread of COVID-19.</p> <p><b>Condition:</b> Viruses that are transmitted in similar ways to COVID-19, e.g., influenza, SARS MERS-CoV. Not other infectious diseases that are not respiratory e.g., HIV, Ebola, measles.</p> <p><b>Determinants:</b> Published studies that examined any variable presented as a potential determinant of one or more of the behaviours of interest described above. These determinants were limited to variables that 'resided' with the individual. For example, demographic characteristics, attitudes, personality characteristics, emotions, beliefs, but not variables such as length of time since the beginning of the outbreak or number of cases reported.</p>	<p><b>being female and avoiding public transport</b> (3 studies, 1 = Hong Kong, 1= Korea, 1 = UK). Associations between <b>age and avoiding crowded places, education level and avoiding crowded places</b> were small and inconsistent. <b>Knowledge about the virus</b> is positively related to <b>avoiding crowds</b> (3 studies, 1 = Hong Kong, 2 = USA).</p>	<p>Joanna Briggs Institute (JBI) tools for longitudinal and cross-sectional studies.</p> <p><b>No theoretical perspective was stated.</b></p> <p>Some studies that included specific settings were conducted outside of OECD countries, so may not be generalisable to Wales.</p> <p>This RR is phase one of the COVID Health Related Behaviour Review (COHeRe) project – a series of living systematic reviews and evidence and gap maps on determinants of COVID-19 health related behaviours.</p> <p><a href="https://www.qub.ac.uk/schools/psy/Research/OurResearchThemes/HealthWelfareClinicalPsychology/COHeRe/">https://www.qub.ac.uk/schools/psy/Research/OurResearchThemes/HealthWelfareClinicalPsychology/COHeRe/</a></p>
<p>Hertfordshire County Council Behaviour Change Unit.</p>	<p><b>Question/Aim:</b> To Identify the most appropriate behavioural science insights, theories, tools and techniques</p>	<p>Not given.</p> <p>Due to the limited body of direct behavioural science evidence on</p>	<p>A number of factors were found to increase/ decrease compliance with social distancing:</p>	<p><b>COVID-19 specific sources were included.</b></p>

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<p><a href="#">Public Health Compliance to social distancing on Public Transport</a>. 2020. [Last accessed 19/11/2021].</p> <p>Evidence report</p>	<p>that can be used to support compliance to social distancing on public transport; Provide evidence-based behavioural science recommendations to enable public transport operators to make decisions to support social distancing. The focus will be on practical measures that can be implemented with the least amount of disruption to services.</p> <p><b>Recency (search dates):</b> Not given.</p> <p><b>Specific settings stated:</b> Public transport.</p> <p><b>Theoretical perspective:</b> Recommendations were developed using the <b>Behaviour Change Wheel framework and the COM-B model of behaviour change</b>.</p>	<p>social distancing on public transport in England, authors researched and reviewed interventions that were implemented in other countries.</p> <p>Authors also noted that evidence specifically related to social distancing in the context of public transport was limited, therefore considered broader research on compliance and applied to the context.</p>	<ul style="list-style-type: none"> <li>- Reducing the perceived costs of performing a behaviour can boost compliance</li> <li>- Compliance to social distancing is <b>likely to reduce over time</b>, particularly where end dates for specific measures are uncertain</li> <li>- A survey of 1,200 people across 10 cities in the UK found that the “most important factor to self-reported lockdown compliance was the belief that <b>‘we are all in it together and we all need to come out of it together’</b>”. Highlighting that the importance of creating/ communicating a shared identity, a common fate, and acting for the common/ social good can support compliance.</li> <li>- Fear of the virus, police or law were <u>not</u> significant factors, neither was the legitimacy of the police or law.</li> </ul>	<p>Authors report that evidence relating to social distancing in the context of public transport was limited, so applied broader research on compliance in this context.</p> <p>No methods are described in the report so we cannot comment on the methodological quality, or the generalisability of included studies.</p> <p>No characteristics of included studies were reported.</p> <p>It is unclear from the full text if critical appraisal of included studies was undertaken.</p> <p>Authors note the reviewed interventions were implemented in countries outside of England.</p>
<p>Seale H, et al. <a href="#">Improving the impact of non-pharmaceutical interventions during COVID-</a></p>	<p><b>Question/Aim:</b> To identify the key determinants impacting on engagement with individual protective behaviours and non-pharmaceutical interventions (NPIs) but to also</p>	<p><b>Inclusion criteria:</b></p> <p>Quantitative observational and qualitative published peer-reviewed articles</p>	<p>This review explored strategies and factors/characteristics that impact on the effective implementation of NPIs.</p> <p>In relation to specific settings, one study (Hong Kong) found 95% of</p>	<p><b>Non COVID-19 specific sources were included</b> (SARS, MERS, and 2009 H1N1/A influenza pandemic) as well as studies published on</p>

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<p><a href="#">19: examining the factors that influence engagement and the impact on individuals.</a> <i>BMC Infectious Diseases</i>. 2020;20(1):1-13; doi: 10.1186/s12879-020-05340-9</p> <p>Literature review</p>	<p>explore the impact of these strategies on the individual.</p> <p><b>Recency (search dates):</b> March 2020 (Update search July 2020).</p> <p><b>Specific settings stated:</b> Public places and educational settings (not relevant to this work).</p> <p><b>Theoretical perspective:</b> The key issues identified were mapped using a <b>behaviour change framework</b>.</p>	<p>Undertaken in response to the emergence of infectious disease events (SARS, MERS, and 2009 H1N1/A pandemic influenza) as well as studies published on COVID-19 (as of July 2020) and hypothetical pandemics (pre-2009).</p> <p>General community (excluding healthcare workers)</p> <p>Strategies (both preventative and avoidance focussed) and factors/characteristics (social, physical, psychological capacity, economic, motivation and demographic) that impact on effective implementation.</p>	<p>participants refer to a '<b>civic responsibility</b>' in relation to <b>mask wearing in public places</b>.</p>	<p>COVID-19 (as of July 2020) and hypothetical pandemics (pre-2009).</p> <p>It is unclear from the full text if critical appraisal of included studies was undertaken.</p> <p>No characteristics of studies included have been provided.</p> <p>Some studies that included specific settings were conducted outside of OECD countries, so may not be generalisable to Wales.</p>
<p>Sim SW, Moey KSP, Tan NC. <a href="#">The use of facemasks to prevent respiratory infection: a literature review in the context of the Health Belief Model.</a> <i>Singapore medical journal</i>. 2014; 55(3):160-7; doi:</p>	<p><b>Question/Aim:</b> To conduct a literature review to determine the factors that influence the use of facemasks as a primary preventive health measure in the community and provide a framework for future interventions directed at increasing facemask usage as an effective public health measure to curb airborne infectious disease outbreaks.</p> <p><b>Recency (search dates):</b></p>	<p><b>Inclusion criteria:</b></p> <p>Published studies and reviews that explored reasons for adherence and/or non-adherence with mask-wearing, and literature covering factors affecting facemask use in the community and hospital settings.</p>	<p>Fifty-one studies were included in this review.</p> <p>A study (Hong Kong) found during the H1N1 outbreak, those who perceived <b>wearing facemasks in public areas</b> to be a very effective self-protection measure were more likely to wear facemasks (OR 1.90, p &lt; 0.001). The same study also found that over the duration of the H1N1 outbreak, <b>those who perceived that H1N1 infection had a very high fatality rate were more likely to wear facemasks regularly in public areas</b> (OR 1.64, p &lt; 0.01).</p>	<p>This literature review was conducted in 2014 and <b>non COVID-19 specific sources were included</b> (mostly about H1N1 pandemic).</p> <p>Some studies that included specific settings were conducted outside of OECD countries, so may not be generalisable to Wales.</p> <p>It is unclear from the full text if critical appraisal of</p>



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10.11622/smedj.2014037  Literature review	<p>Not given. Studies retrieved were published between November 2003 and December 2012.</p> <p><b>Specific settings stated:</b> Public areas.</p> <p><b>Theoretical perspective:</b> A modified version of the <b>Health Behaviour model</b> was used to present the results, by classifying the determinants of mask-wearing behaviour.</p>			included studies was undertaken.

**Table 3: Secondary sources identifying barriers and facilitators to personal protective behaviours (non-specific settings)\***

Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p>COVID-19 Scientific Advisory Group. <a href="#">Attitudes and Adherence to COVID-19 Guidelines.</a> Alberta: Alberta Health Services. 2021 [Last accessed 19/11/2021].</p> <p>Evidence report</p>	<p><b>Question/Aim:</b></p> <p>1. What factors impact attitudes toward or adherence to COVID-19 public health guidelines, including hand hygiene, wearing of face coverings, and physical distancing?</p> <p>2. What interventions can create more positive attitudes toward following public health guidelines with the goal of increasing guideline adherence?</p>	<p><b>Inclusion criteria:</b> Academic and grey literature sources on attitudes toward following or adherence to COVID-19 public health guidelines. Studies of interventions intended to improve attitudes toward or adherence to COVID-19 public health guidance.</p> <p><b>Exclusion criteria:</b> Articles from a region other than North America, Europe, Australia or New Zealand.</p>	<p>Thirty articles, mostly using convenience samples were included in this rapid evidence report.</p> <p><b>Higher adherence rates to COVID-19 guidelines were consistently reported among those who trust the government, those who perceive COVID-19 to be a greater threat, those who are older, or identify as a woman as well as those who have a greater knowledge of the pandemic.</b></p> <p>The use of social media to access information was associated with less adherence and a higher chance of holding conspiracy beliefs</p>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p> <p>Only COVID-19 specific sources were included</p> <p>The report included 30 studies from North America, Europe, Australia and New Zealand.</p> <p>A critical evaluation of evidence from included</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
	<p><b>Recency (search dates):</b> Search dates not specified.</p> <p>(Most recent included studies were published in 2020).</p> <p><b>Specific settings stated:</b> Specific settings are not mentioned in the context of barriers and facilitators in the synthesis.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p>Except where these studies are international in scope. Articles not available in English. Articles measuring adherence to guidelines but not commenting on factors that impact attitudes or adherence. Study protocols. Opinion pieces. Review articles. Purely descriptive studies. Studies relying on convenience samples of &lt;1,000 where weighting or resampling was not done. (The 1,000 participant threshold is arbitrary. Excluding all convenience sample studies would have resulted in an empty review).</p>	<p>compared to those who used traditional news media.</p>	<p>articles was conducted using three criteria: 1) Peer reviewed or from a reputable source; 2) Clear research question or issue; 3) Whether the presented data/evidence is appropriate to address the research question. However, no valid critical appraisal tools were used and the process does not appear robust.</p> <p>The results of this evidence report were also reported in Moran et al., 2021 (Table 3).</p>
<p>(COVID Health Related Behaviour Review Project (COHeRe), <a href="#">Determinants of COVID-19 Health Related Behaviours: An evidence and gap map developed and maintained as part of the COHeRe project.</a> 2021b <i>[Last</i></p>	<p><b>Question/Aim:</b></p> <p>Authors have published an open access 'evidence and gap map' (EGM) that contains information on all of the studies they have already found (see Hanratty et al., 2021). It will also include information on all studies included in the phase 2 series of SRs looking at determinants of behaviours recommended to reduce the spread of COVID-19.</p>	<p><b>Inclusion criteria:</b></p> <p>Presumed to be the same as rapid review (see Hanratty et al., 2021; table 2) and ongoing review (see COVID Health Related Behaviour Project, 2021; table 4).</p>	<p>The evidence and gap map displays evidence on a range of PPBs in relation to a number of determinants, highlighting key areas where further research is needed.</p>	<p><b>No theoretical perspectives were stated.</b></p> <p>This evidence and gap map forms phase three of the COHeRe project. Phase 1 is reported below (Hanratty 2021; Table 2).</p> <p>Phase two will be focused solely on existing and emerging COVID-19 research.</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p>Accessed 19/11/2021]</p> <p>Evidence and gap map – published and currently being updated</p>	<p><b>Recency (search dates):</b> Last search date given July, 20 2021.</p> <p><b>Specific settings stated:</b> None stated in relation to the EGM, but data extraction for the SRs in phase 2 will include whether participants were asked about preventative behaviours in the following sectors:</p> <ul style="list-style-type: none"> <li>• Work</li> <li>• Retail</li> <li>• Education</li> <li>• Travel</li> <li>• Family and community</li> <li>• Sport, culture, leisure</li> </ul>			
<p>Desveaux L, Mosher R, Buchan J. <a href="#">Behavioural science principles for enhancing adherence to public health measures.</a> <i>Science Briefs of the Ontario COVID-19 Science Advisory Table.</i></p>	<p><b>Question/Aim:</b></p> <ol style="list-style-type: none"> <li>1. What behaviour change strategies can support maintaining already established behaviours?</li> <li>2. What behaviour change strategies can support enhanced adherence to public health measures among those who don't realize they aren't complying?</li> </ol>	<p>Not given.</p>	<p>This evidence summary focusses on strategies to enhance existing protective behaviours in Canada, in light of current fatigue in following COVID-19 public health measures due to the ongoing pandemic. Its focus on two key public health measures; physical distancing and masking. Methodology was not reported, so we are unsure of the number of included studies.</p> <p><b>Barriers to physical distancing include:</b></p> <ul style="list-style-type: none"> <li>- All or nothing attitude</li> <li>- Hard to ask or uncomfortable to ask others to respect your space or remain distanced</li> <li>- Space too crowded</li> </ul>	<p><b>No particular settings were stated in the synthesis.</b></p> <p>No methods were reported so we are unable to comment on methodological quality.</p>

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<p>2021; 2(24); doi: 10.47326/ocsat.2021.02.24.1.0</p> <p>Evidence summary</p>	<p>3. Who is in a position to act on renewed strategies?</p> <p><b>Recency (search dates):</b> Not given.</p> <p><b>Specific settings stated:</b> Specific settings are not mentioned in the context of barriers and facilitators in the synthesis.</p> <p><b>Theoretical perspective:</b> The advice on this evidence summary has been developed using the <b>COM-B model</b>.</p>		<ul style="list-style-type: none"> <li>- Lack of motivation</li> <li>- Not adhering to the 2 metre requirement</li> <li>- Accommodation to existing signage.</li> </ul> <p><b>Barriers specific to outdoors highlighted:</b></p> <ul style="list-style-type: none"> <li>- Conflicting messaging re: distancing while outdoors.</li> </ul> <p><b>Barriers to wearing a mask include:</b></p> <ul style="list-style-type: none"> <li>- Not motivated to adhere</li> <li>- Unsure what to do in atypical settings</li> <li>- Seeing others unmasked</li> <li>- Wearing masks incorrectly</li> <li>- Assumptions that one is wearing a mask properly</li> <li>- Inconsistent use of masks across settings</li> <li>- Positive outcomes or progress is unclear</li> <li>- Forgetting to bring or wear a mask.</li> </ul> <p>In terms of the COM-B model:  <b>Capability barriers include lack of knowledge and comprehension</b> about a behaviour and its consequences, and <b>lack of skill necessary to carry out a behaviour</b>.  <b>Opportunity barriers include time and resource constraints</b> that make a desired behaviour more difficult or costly to carry out.  <b>Motivation barriers include emotional reactions and inaccurate beliefs</b> that create obstacles for carrying out a behaviour.</p>	
<p>Kooistra EB, Van Rooij B. <a href="#">Pandemic</a></p>	<p><b>Question/Aim:</b> This SR sought to understand what variables</p>	<p><b>Inclusion criteria:</b> Studies were included that reported a number of</p>	<p>The review identified 45 studies with data about compliance behaviour during the first wave.</p>	<p><b>No particular settings or theoretical perspectives</b></p>

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<p><a href="#">Compliance: A Systematic Review of Influences on Social Distancing Behaviour during the First Wave of the COVID-19 Outbreak.</a> SSRN. NOV 25 2020. doi: 10.2139/ssrn.37.38047</p> <p>SR Preprint</p>	<p>made people comply with social distancing (including physical distancing and stay-at-home measures), and hygiene practices (only if combined with social distancing measures), during the first wave of the COVID-19 outbreak.</p> <p><b>Recency (search dates):</b> March 1 - June 30 2020.</p> <p><b>Specific settings stated:</b> Not given.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p>independent variables that affect self-reported, individual-level, past compliance with COVID-19 social distancing measures. To be included studies must present results from statistical analyses that can show how an independent variable predicts compliance.</p> <p><b>Exclusion criteria:</b> Studies were excluded if they 1) only reported objective data on compliance at an aggregated level 2) only reported behavioural intentions 3) only described descriptive statistics or correlates of compliance or 4) assessed compliance as an independent variable, rather than the main outcome variable of interest.</p>	<p>The review found that a combination of variables shaped compliance behaviour, including people's <b>fear of the virus</b>, <b>psychosocial factors</b> (including impulsivity, negative emotions, self-efficacy, and social norms), <b>institutional variables</b> (including attitudes towards the mitigation measures, <b>belief in conspiracy theories</b> and knowledge of the virus), and <b>situational variables</b> (capacity to obey and opportunity to violate the rules). The review did not find a significant association between law enforcement (perceived deterrence) and compliance.</p>	<p><b>were stated in the synthesis.</b></p> <p>This paper is a preprint and has not yet been peer-reviewed.</p> <p>Only COVID-19 specific sources were included</p> <p>It is unclear is a critical appraisal of included studies was undertaken</p>
<p>Majid U et al. <a href="#">Knowledge, (mis-)conceptions, risk perception, and behavior change during pandemics: A scoping review of 149 studies.</a> <i>Public</i></p>	<p><b>Question/Aim:</b> This scoping review was conducted to examine how knowledge, awareness, and misconceptions influence risk perceptions and the adoption of hygiene (e.g. hand washing) and physical distancing (e.g. avoiding crowded places) behaviours.</p>	<p><b>Inclusion criteria:</b> Primary quantitative, qualitative, and mixed-methods studies pertaining to how communities, individuals, groups, and societies respond to outbreaks, epidemics, and pandemics, including articles that conducted social media analyses.</p>	<p>149 studies from five major pandemics or outbreaks of the twenty-first century were analysed (SARS, influenza A/H1N1, MERS, Ebola, and COVID-19). Results commented on participant <b>knowledge</b> about pandemic or disease, hygiene behaviours, social distancing, social pressures, knowledge risk perception and behaviour, misconceptions about the infection and treatment and origin of infection, how misconceptions spreads, and the impact of misconception on behaviour.</p>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p> <p><b>Non COVID-19 specific sources were included.</b></p> <p>Authors report the STROBE checklist was used for quality appraisal of</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p><i>understanding of science (Bristol, England), 2020; 29(8):777-799; Doi: 10.1177/0963662520963365</i></p> <p>Scoping review</p>	<p><b>Recency (search dates):</b> Searches conducted on 7 March 2020.</p> <p><b>Specific settings stated:</b> Not given.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p>Included articles had to focus on any of the five pandemics and global outbreaks of the twenty first century: severe acute respiratory syndrome (SARS), influenza A/H1N1, Middle East respiratory syndrome (MERS), Ebola virus disease (EVD), and coronavirus disease 2019 (COVID-19).</p> <p><b>Exclusion criteria:</b> Articles on mass media communication strategies - such as newspapers and television, abstracts, theses, dissertations and published papers without empirical primary data.</p>		<p>included studies. However, this is a reporting guideline and not a critical appraisal tool.</p>
<p>Mills M, Rahal C, Akimova E. <a href="#">Face masks and coverings for the general public: Behavioural knowledge, effectiveness of cloth coverings and public messaging</a>. The Royal Society. 2020. [last accessed 19/11/2021]</p>	<p><b>Question/Aim:</b> The aim of this RR was to focus on behavioural factors related to adherence, with five central themes that emerged: i) public understanding of the virus, ii) risk perception, iii) previous national experience with pandemics, socio-political systems, and trust in government and science, iv) individual characteristics; and, v) perceived barriers.</p>	<p>Not given.</p>	<p>Using GRADE, authors deemed the level of evidence as high quality regarding behavioural literature but note limited evidence regarding perceived barriers in the general public. Authors identified a systematic review that isolated key socio-behavioural factors to understand public adherence to wearing face masks and coverings, including:</p> <ul style="list-style-type: none"> <li>• <b>Public understanding of virus transmission</b>, including efficacy of source versus wearer protection, diagnostic uncertainty and inability to self-diagnose</li> <li>• <b>Risk perception</b>, individuals' underestimation of health risks and perception that protection is only relevant</li> </ul>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p> <p><b>Non COVID-19 specific sources were included.</b></p> <p>This RR is a preprint and has not been peer-reviewed.</p> <p>The review was conducted early in the pandemic, so</p>

**Table 3: Secondary sources identifying barriers and facilitators to personal protective behaviours (non-specific settings)\***

Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
RR Preprint	<p><b>Recency (search dates):</b> Not given.</p> <p><b>Specific settings stated:</b> Healthcare</p> <p><b>Theoretical perspective:</b> Not given.</p>		<p>for vulnerable groups, or outside of their proximity</p> <ul style="list-style-type: none"> <li>• <b>Previous national pandemic experience</b> resulting in rapid response and socio-political systems, allowing for more or less coordinated action and public trust</li> <li>• Individual characteristics, such as <b>younger people and men having a lower threat perception and adherence</b> with interventions</li> <li>• <b>Perceived barriers, lack of supply of surgical masks</b> and perceived competition with medical resources, resource constraints to obtain coverings, comfort and fit.</li> </ul>	<p>may not be generalisable to the current context.</p> <p>Authors emphasise the majority of studies were conducted in <b>healthcare</b> settings and there are therefore caveats in the ability to transfer results directly to community settings.</p> <p>We are unable to ascertain if this review is well conducted.</p> <p>GRADE was used to assess strength of the evidence.</p>
<p>Moran C, et al. <a href="#">Predictors of attitudes and adherence to COVID-19 public health guidelines in Western countries: a rapid review of the emerging literature.</a> <i>Journal of Public Health.</i> 2021; fdab070; doi: 10.1093/pubmed /fdab070</p>	<p><b>Question/Aim:</b></p> <p>1) What factors impact attitudes toward COVID-19 public health guidelines, including physical distancing, wearing facemasks and hand hygiene?</p> <p>2) What factors impact adherence to COVID-19 public health guidelines, including physical distancing, wearing facemasks and hand hygiene?</p>	<p><b>Inclusion criteria</b></p> <p><b>Population:</b> Adults (≥18 years) (adults residing outside of North America, Europe, Australia or New Zealand were excluded).</p> <p><b>Intervention:</b> Intended to improve attitude towards or adherence to COVID-19 public health guidelines of any kind.</p> <p><b>Predictors:</b> Any factor that may be related to individual-level behaviour and could be used to either inform or act as targets of</p>	<p>This RR sought to identify predictors of attitudes toward and adherence to COVID-19 public health guidelines, and to identify interventions aiming to improve adherence.</p> <p>The RR included 29 studies.</p> <p>The review findings suggest that people who are <b>older, identify as female, trust governments, view COVID-19 as a threat and access information through traditional news</b> media are more likely to adhere to COVID-19 public health guidance.</p>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p> <p>Only COVID-19 specific sources were included.</p> <p>The results of this RR were also reported in the COVID-19 Scientific Advisory Group Rapid Evidence Report (Table 3).</p> <p>The RR included primary studies, only included</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
RR	<p>3) What interventions can create more positive attitudes toward following public health guidelines with the goal of increasing guideline adherence?</p> <p><b>Recency (search dates):</b> Search conducted 6th August 2020.</p> <p><b>Specific settings stated:</b> Specific settings are not mentioned in the context of barriers and facilitators in the synthesis.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p>public health response to promote adherence to COVID-19 behaviours.</p> <p><b>Outcome:</b> Attitudes towards following or adhering to COVID-19 public health guidelines (hand hygiene, physical distancing and wearing of face coverings).</p> <p><b>Study design:</b> Primary studies, in English, published in peer-reviewed journals, grey literature or preprints.</p>		<p>adults and highlights specific PPBs such as mask wearing, hand hygiene and social distancing.</p> <p>This review included studies conducted in North America, Europe, Mexico, Australia or New Zealand or with international scope including any of these countries.</p> <p>No formal quality assessment of included studies was undertaken.</p>
<p>Noone C et al. <a href="#">A scoping review of research on the determinants of adherence to social distancing measures during the COVID-19 pandemic.</a> <i>Health psychology review.</i> 2021; 1-21; doi: 10.1080/174</p>	<p><b>Question/Aim:</b></p> <p>1) In what ways have social distancing measures been defined and how has adherence to these measures been operationalised?</p> <p>2) What determinants of adherence to social distancing measures have been studied?</p> <p>3) How do the determinants of adherence to social distancing measures that</p>	<p><b>Inclusion criteria:</b></p> <p>Studies had to focus on human participants, but no further exclusions on the basis of participant characteristics were made. Included studies had to evaluate adherence to social distancing measures (e.g., quarantine, lockdown, and physical distancing) and include potential determinants of adherence to these measures as independent variables. They could be written in any</p>	<p>84 studies were included in the review. The most commonly coded domains of the Theoretical Domains Framework (TDF) in the included studies were:</p> <ul style="list-style-type: none"> <li>• <b>Environmental Context</b> and Resources' (388 codes across 76 studies)</li> <li>• <b>Beliefs about Consequences'</b> (34 codes across 21 studies)</li> <li>• <b>Emotion'</b> (28 codes across 12 studies)</li> <li>• <b>Social Influences</b> (26 codes across 16 studies)</li> </ul> <p>The least frequently coded TDF domains included:</p>	<p><b>No particular settings were stated in the synthesis.</b></p> <p>Only COVID-19 specific sources were included.</p> <p>Authors note that the quality of the included studies was variable and their generalisability was threatened by their reliance on convenience samples.</p>



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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p>37199.2021.193 4062</p> <p>Scoping review</p>	<p>have been studied map onto the Theoretical Domains Framework?</p> <p>4) What is the quality of the evidence?</p> <p>5) What study designs have been used?</p> <p>6) Where has this research taken place?</p> <p>7) What gaps exist in the literature that need to be addressed in future research on social distancing measures?</p> <p><b>Recency (search dates):</b> Searches were carried out between July 17th and July 21st 2020.</p> <p><b>Specific settings stated:</b> Specific settings are not mentioned in the context of barriers and facilitators in the synthesis.</p> <p><b>Theoretical perspective:</b> One of the research questions sought to identify how the determinants of adherence to social distancing measures that have been studied mapped</p>	<p>language. Studies that focused only on intention to adhere to social distancing measures were excluded. Included studies had to have collected primary data using quantitative designs. The included studies must have been conducted in relation to COVID-19.</p>	<ul style="list-style-type: none"> <li>• Optimism (not coded)</li> <li>• Intentions (coded once)</li> <li>• Goals (2 codes across 2 studies)</li> <li>• Reinforcement (3 codes across 2 studies)</li> </ul> <p>Behavioural Regulation (3 codes across 3 studies)</p>	<p>Relevant Cochrane and JBI tools were used to undertake quality assessment of included studies</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
	onto the <b>Theoretical Domains Framework</b> .			
<p>Prabarini LP, Kumboyono K, Yuliatun L. <a href="#">The influence of sociodemographic factors on community knowledge, perceptions, attitudes, and practices towards covid-19 prevention protocols: A scoping review</a>. <i>Indian Journal of Forensic Medicine and Toxicology</i>. 2021; 15(4):1636-1644.</p> <p>Scoping review</p>	<p><b>Question/Aim:</b> The aim of this scoping review was to critically synthesize scientific proofs of sociodemographic factors that affect the level of knowledge, perceptions, attitudes and practice of community towards COVID-19 prevention protocols.</p> <p><b>Recency (search dates):</b> Literature search was commenced in July 2020 and ended in October 2020.</p> <p><b>Specific settings stated:</b> Not given.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p><b>Inclusion criteria:</b></p> <ol style="list-style-type: none"> <li>1) Community groups in general during the COVID-19 pandemic;</li> <li>2) Interventions took the form of questionnaires related to community knowledge, attitudes, practices, and perceptions on COVID-19 and include sociodemographic characteristics of the respondent;</li> <li>3) Results were in the form of measurements articles on sociodemographic factors that affect the variables of knowledge, attitude, practice, and perception to the pandemic; and</li> <li>4) Studies used observational research design with a cross-sectional approach.</li> </ol> <p>Articles would not be considered to meet the criteria if they focused on a specific group of populations.</p>	<p>28 articles were found to meet the inclusion criteria. Several sociodemographic factors were found to affect levels of knowledge, attitudes, practices and perceptions of respondents towards COVID-19 prevention protocols. These included <b>age, gender, education, marital status, occupation, socio-economic status, area of residence and nationality</b>.</p> <p><b>Education and socio-economic status/monthly income</b> were found to be the <b>main factors</b> that influenced the respondents' level of knowledge. Individuals with higher education tended to take health problems more seriously, as shown by their better scores of adherence with the COVID-19 prevention protocols, compared to the scores shown by other groups.</p>	<p><b>This scoping review did not specify any particular settings or theoretical perspectives.</b></p> <p>The review appears to be conducted in line with PRISMA guidelines, although it is not clear if critical appraisal of included studies was undertaken.</p> <p>Only COVID-19 specific sources were included.</p>
<p>Regmi K, Lwin CM. <a href="#">Factors Associated with the Implementation</a></p>	<p><b>Question/Aim:</b> What are the factors associated with the implementation of non-pharmaceutical interventions</p>	<p><b>Inclusion Criteria:</b></p> <p><b>Participants:</b> Studies involving human subjects of any age or gender, including ethnic (Black,</p>	<p>33 studies were included in the review. Seven descriptive themes emerged on enablers and barriers to NPIs: the positive impact of NPIs, effective public health interventions, positive change in people's behaviour and concerns</p>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p>

**Table 3: Secondary sources identifying barriers and facilitators to personal protective behaviours (non-specific settings)\***

Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p><a href="#">of Non-Pharmaceutical Interventions for Reducing Coronavirus Disease 2019 (COVID-19): A Systematic Review</a> <i>Int J Environ Res Public Health</i>. 2021; 18(8):4274; doi: 10.3390/ijerph18084274.</p> <p>SR</p>	<p>(social distancing, social isolation and quarantine) for reducing COVID19?</p> <p><b>Recency (search dates):</b> A scoping search of MEDLINE in January 2021. Last search conducted on 12 March 2021.</p> <p><b>Specific settings stated:</b> Not given.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p>Asian, White) and healthcare worker (medical doctors, nurses, allied healthcare professions) groups.</p> <p><b>Intervention:</b> Research describing three major NPIs, e.g., social distance, isolation and quarantine, focusing only on COVID-19/SARS-CoV-2.</p> <p><b>Outcome measure:</b> Primary outcomes include: COVID-19; reducing the risk of transmission/ infection of COVID-19. Secondary outcomes include: changes in social behaviour, for example, social distancing by avoiding crowds, restricting movements, isolating ill patients and quarantine of exposed people.</p> <p>To measure the impact of NPIs, this review considered all studies evaluating the effectiveness of NPIs relating to reducing the risk of transmission/ infection of COVID-19. Preprint servers were also searched.</p> <p><b>Study period:</b> December 2019 to March 2021.</p>	<p>about COVID-19, the role of mass media, physical and psychological impacts, and ethnicity/age associated with COVID-19.</p>	<p>This SR appears to be well conducted.</p> <p>Only COVID-19 specific sources were included.</p> <p>The SR appears to be looking at factors associated with the implementation of NPI's, rather than barriers and facilitators to individual behaviour.</p> <p>The general population and healthcare workers were included.</p> <p>Authors used the JBIchecklists to assess methodological quality of included studies</p> <p>Review authors report methodological weaknesses of included studies.</p>

**Table 3: Secondary sources identifying barriers and facilitators to personal protective behaviours (non-specific settings)\***

Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
		<p><b>Exclusion Criteria:</b></p> <p>Articles published in narrative review, modelling studies, opinions, letters, news, editorials, perspectives, commentaries and any other publications lacking primary data, including grey literature.</p> <p>Studies containing duplicate datasets.</p>		
<p>Regmi K, Lwin C. <a href="#">Factors impacting social distancing measures for preventing coronavirus disease 2019 [COVID-19]: A systematic review.</a> <i>ResearchSquare</i> . 2020; doi: 10.21203/rs.3.rs-37498/v1</p> <p>SR Preprint</p>	<p><b>Question/Aim:</b> What has been the impact of social distancing measures (SDMs) for preventing COVID-19?</p> <p><b>Recency (search dates):</b> The literature search was conducted during May-June 2020 and the last search was conducted on 8 June 2020.</p> <p><b>Specific settings stated:</b> Not given.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p><b>Inclusion criteria:</b></p> <ol style="list-style-type: none"> <li>1. Primary research describing SDMs, e.g. social distance, isolation and quarantine across all age-sex groups.</li> <li>2. Research reporting enablers and barriers to implementing SDMs, e.g. social distance by avoiding crowds and restricting movement, isolating ill people and quarantine of exposed people for preventing transmission or controlling the spread of COVID-19 infections as outcome measures.</li> <li>3. Published peer-reviewed article using quantitative (e.g. cross-sectional, randomised controlled trials, cohort, case-control) or qualitative (ethnography,</li> </ol>	<p>Sixteen studies were included in the review.</p> <p>Studies reported in two broad categories, under seven separate themes:</p> <ul style="list-style-type: none"> <li>• Positive impact of SDMs</li> <li>• Effective public health interventions</li> <li>• Positive change in people’s behaviour</li> <li>• Worries and concerns about COVID-19</li> <li>• Roles of mass media</li> <li>• Physical and psychological impacts</li> <li>• Ethnicity/age associated with COVID-19.</li> </ul>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p> <p>This paper is a preprint and has not yet been peer-reviewed.</p> <p><b>Non COVID-19 specific sources were included.</b></p> <p>Authors used the JBI checklists to assess methodological quality of included studies.</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
		<p>grounded theory, phenomenological studies). 4. Articles published in English language regardless of the location (or settings) of the studies, up to June 2020.</p> <p><b>Exclusion criteria:</b></p> <p>1. Articles published in narrative review, modelling studies, opinions, letters, news, editorials, perspectives, commentaries and any other publications lacking primary data, including grey literatures. 2. Studies deemed to have overall poor quality.</p>		
<p>Ryan RE, et al. <a href="#">What are relevant, feasible and effective approaches to promote acceptance, uptake and adherence to physical distancing measures for COVID-19 prevention and control?</a> <i>Health Evidence</i></p>	<p><b>Question/Aim:</b> What are relevant, feasible and effective approaches to promote acceptance, uptake and adherence to physical distancing measures for COVID-19 prevention and control?</p> <p><b>Recency (search dates):</b> Searching was conducted weekly from 10 April 2020 to 1 May 2020.</p> <p><b>Specific settings stated:</b></p>	<p><b>Inclusion criteria:</b></p> <p><b>Population and context:</b> Documents with a focus on physical distancing measures for prevention and/or control of COVID-19 or other similar infectious diseases (including SARS, MERS, influenza, EBV and TB); promotion of physical distancing measures in settings outside healthcare settings (i.e. measures put in place in community settings).</p> <p><b>Interventions (approaches):</b></p>	<p>This RR analysed evidence around communication within the socio-political context of the COVID-19 pandemic to support the planning and implementation of physical distancing measures. A total of 31 papers were included in the review, which included guidelines, systematic reviews and primary studies.</p> <p>The report highlights features of effective communication such as <b>clear, consistent and actionable content, attention to timing</b> and consideration of the audience across populations. The review also identified consistent features of communication for physical distancing that could promote</p>	<p><b>This RR focuses on settings within the community (outside healthcare settings); however no emphasis was made in the analysis on any specific settings within the community.</b></p> <p><b>No theoretical perspectives were stated.</b></p> <p>The report includes primary studies, guidance documents and reviews.</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p><i>Network Synthesis Report, 2021, No. 72.</i> Copenhagen: WHO Regional Office for Europe.</p> <p>RR</p>	<p>Community settings (settings outside healthcare).</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p>Documents were included if they focused on communication with individuals, organisations, communities and/or systems; and physical distancing communication, defined as that undertaken with any one or more of the following purposes: informing/educating, reminding, facilitating communication or decision-making, enabling communication, acquiring skills or supporting behavioural change.</p> <p><b>Exclusion criteria:</b> Documents were excluded if they focused on disease surveillance or clinical outcomes related to implementation of physical distancing measures; health-care settings (e.g. infection and disease control measures in hospitals); diseases for which physical distancing measures are not considered a primary means of prevention and/or control; and communication with patients/family members about decision-making for personal treatment in situations of isolation.</p> <p><b>Intervention (approaches):</b> Documents were excluded if</p>	<p>acceptance, uptake and adherence and be applied to any medium or type of communication in order to have the best chance of success.</p> <p><b>Practical support</b> was also highlighted such as access to essential services and financial support was critical in promoting acceptance and adherence to physical distancing measures.</p>	<p>Including both qualitative and quantitative designs.</p> <p>The focus is on COVID-19 or other similar infectious diseases.</p> <p>Practical support highlights some factors that may impact adherence to personal protective behaviours. It appears the review is not solely focused on barriers and facilitators.</p> <p>Authors utilised a range of tools to assess methodological quality of included studies.</p> <p>This RR is currently being updated by the RR protocol by Ryan (2021) (Table 4).</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
		<p>they focused on strategies for enhancing community ownership; strategies for (personal) support, such as psychosocial support for individuals, as these fall outside the current scope of the review; strategies aiming primarily to minimize risks or harms to individuals or to communities, which were considered an outcome in the context of this review (e.g. individual risk and population risk mitigation such as informing individuals about the importance of vaccination for influenza in the context of COVID-19 pandemic); quality-improvement strategies looking at implementation of physical distancing measures, rather than acceptance, uptake and adherence to such measures (if such strategies included a focus on communication of measures for physical distancing they were then considered as eligible for inclusion); strategies without a communication element (as listed above), for example those assessing effectiveness of physical distancing measures themselves; and studies that modelled various effectiveness scenarios.</p>		

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p>Sadjadi M, Mörschel KS, Petticrew M. <a href="#">Social distancing measures: barriers to their implementation and how they can be overcome - a systematic review</a> <i>Eur J Public Health</i>. 2021; ckab103. doi: 10.1093/eurpub/ckab103.</p> <p>SR</p>	<p><b>Question/Aim:</b> This systematic qualitative review sets out to synthesize the evidence relating to factors that affect the implementation of social distancing measures.</p> <p><b>Recency (search dates):</b> March 17-19, 2020.</p> <p><b>Specific settings stated:</b> Specific settings are not mentioned in the context of barriers and facilitators in the synthesis.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p><b>Inclusion criteria:</b></p> <p>1) Reported on qualitative studies with primary data generation.</p> <p>2) Addressed infectious diseases with human-to-human transmission and epidemic potential (Influenza, MERS, SARS, Ebola).</p> <p>3) Included information on feasibility, acceptability, barriers, facilitators and attitudes regarding the implementation of social distancing measures.</p>	<p>This SR drew on qualitative literature to identify factors influencing the acceptability and implementation of social distancing measures in potentially epidemic infectious diseases. Twenty-nine studies were included.</p> <p>The review identifies two broad categories of barriers to social distancing measures: <b>individual- or community-level psychosocial phenomena</b>, and <b>shortcomings in governmental action or communication</b>. Based on this, 25 themes are identified that can be addressed to improve the implementation of social distancing.</p>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p> <p><b>Non COVID-19 specific sources were included.</b></p> <p>This SR appears to be relevant to our review topic and is specific to identifying barriers to implementation of social distancing measures.</p> <p>Critical Appraisal Skills Programme (CASP) assessment tool for qualitative studies was used to assess included studies.</p> <p>GRADE-CERQual was used to assess strength and reliability of findings.</p>
<p>Teasdale E, et al. <a href="#">Public perceptions of non-pharmaceutical interventions for reducing transmission of</a></p>	<p><b>Question/Aim:</b> To synthesise the qualitative literature on public perceptions of non-pharmaceutical public health interventions that aim to reduce the transmission of acute respiratory infections.</p>	<p><b>Inclusion criteria:</b></p> <p><b>Population:</b> Adults ≥17years old (healthcare professional and children excluded).</p> <p><b>Exposure:</b> NPI -hand hygiene, respiratory hygiene, mask wearing, isolation, social</p>	<p>17 articles from 16 studies in nine countries were identified and included. Seven key themes were identified: perceived benefits of non-pharmaceutical interventions, perceived disadvantages of non-pharmaceutical interventions, personal and cultural beliefs about infection transmission, diagnostic uncertainty in emerging respiratory</p>	<p><b>No particular settings or theoretical perspectives were stated in the synthesis.</b></p> <p><b>Non COVID-19 specific sources were included.</b></p>



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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
<p><a href="#">respiratory infection: systematic review and synthesis of qualitative studies</a>. <i>BMC Public Health</i>. 2014; 14:589; doi: 10.1186/1471-2458-14-589</p> <p>SR</p>	<p><b>Recency (search dates):</b> Up to February 2013.</p> <p><b>Specific settings stated:</b> Not given.</p> <p><b>Theoretical perspective:</b> Not given.</p>	<p>distancing, remote health care, precautionary avoidance (pharmaceutical infection control – vaccination and antivirals were excluded).</p> <p><b>Outcome:</b> Public perspectives of respiratory infection control (beliefs, views, concerns, understandings, and emotional and sociocultural factors).</p> <p><b>Study design:</b> Qualitative (quantitative was excluded).</p>	<p>infections, perceived vulnerability to infection, anxiety about emerging respiratory infections and communications about emerging respiratory infections.</p> <p>The synthesis showed that some aspects of non-pharmaceutical respiratory infection control (particularly hand and respiratory hygiene) were viewed as familiar and socially responsible actions to take. There was <b>ambivalence about adopting isolation and personal distancing behaviours</b> in some contexts due to their perceived adverse impact and potential to attract social stigma. Common perceived barriers included <b>beliefs about infection transmission, personal vulnerability</b> to respiratory infection and concerns about self-diagnosis in emerging respiratory infections.</p>	<p>This SR focuses on non-COVID acute respiratory infections in pandemic and non-pandemic contexts.</p> <p>Authors acknowledge that due to the nature of qualitative research, their synthesis is only one possible interpretation of the data.</p> <p>CASP quality assessment tool for qualitative studies was used to appraise included studies.</p>
<p>Yang Chan EY, et al. <a href="#">Narrative review of non-pharmaceutical behavioural measures for the prevention of COVID-19 (SARS-CoV-2) based on the Health-EDRM framework</a>. <i>British medical bulletin</i>. 2020; 136(1): 46-87.</p>	<p><b>Question/Aim:</b> This paper examines available published evidence on primary prevention measures that might be adopted at the personal, household and community level for droplet-borne transmitted diseases, and enabling and limiting factors for each measure. Additionally, this paper reviews the strength of available scientific evidence for each of the behavioural</p>	<p><b>Inclusion criteria:</b> English-language based, international peer reviewed articles, online reports, electronic books and press releases published between January 2000 and May 2020.</p> <p>Primary prevention measures as well as risk factors for infectious disease transmission were included.</p>	<p>104 relevant publications were included in this systematic review. Six personal protective practices (engaging in regular handwashing, wearing face masks, avoiding touching the face, covering mouth and nose when coughing and sneezing, bringing personal utensils when dining out, and closing toilet cover when flushing), two household practices (disinfecting household surfaces and avoiding sharing cutlery) and two community practices (avoiding crowds and mass gatherings, avoiding travel) were identified. Tables 1a, 1b and 1c highlight the potential health risk; desired behavioural changes; potential health co-benefits; enabling and limiting factors; and strength of evidence</p>	<p><b>No particular settings were stated in the synthesis.</b></p> <p>It appears only a keyword search was conducted for relevant literature and so may not be comprehensive and robust.</p> <p>It is not clear if a critical appraisal of included studies was conducted. Authors state that the literature was categorised</p>

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Citation & evidence type	Overview	Inclusion/exclusion criteria	Key findings (highlighting settings)	Reviewer comments
doi: <a href="https://doi.org/10.1093/bmb/lda030">10.1093/bmb/lda030</a>  SR Preprint	changes measured which may reduce health risks.  <b>Recency (search dates):</b> Searches were conducted in May 2020.  <b>Specific settings stated:</b> Specific settings are not mentioned in the context of barriers and facilitators in the synthesis.  <b>Theoretical perspective:</b> Health – EDRM framework.		available in published literature with regards to these measures.	according to the Oxford Centre for Evidence-Based Medicine (OCEBM) Levels of Evidence.

\* These reviews mentioned settings in their inclusion criteria (i.e excluding healthcare and work settings), but did not specify settings in their synthesis of the findings.

**Table 4. Ongoing studies**

Citation & evidence type	Recency (Search dates)	Question/Aim	Specific settings stated	Inclusion/exclusion criteria	Theoretical perspective	Reviewer comments
Das, CK, et al. <a href="#">Understanding existing knowledge and practice related to hand hygiene, face masking,</a>	Searches were conducted from 22nd August to 13th September, 2020.	The protocol aims to review three questions: 1. What is/are the existing knowledge related to	Not given.	<b>Inclusion criteria</b>  <b>Types of study:</b> Cross-sectional, Cohort, Case control, Control	Health Belief Model.	<b>No particular settings were stated in this protocol.</b>

**Table 4. Ongoing studies**

Citation & evidence type	Recency (Search dates)	Question/Aim	Specific settings stated	Inclusion/exclusion criteria	Theoretical perspective	Reviewer comments
<p><a href="#">social distancing, risk perception and COVID-19</a>. 2021. PROSPERO: CRD42021261860</p> <p>SR Ongoing</p>		<p>handwashing, face masking, social distancing, risk perception and COVID-19?</p> <p>2. What is/are the existing health promotion interventions related to handwashing, face masking, social distancing, risk perception and COVID-19?</p> <p>3. What are the gaps in knowledge related to handwashing, face masking, social distancing, risk perception and COVID-19?</p>		<p>trial, Randomized control trial</p> <p><b>Population:</b> Human participants</p> <p><b>Intervention:</b> Any behaviour change interventions related to handwashing, face masking, social distancing behaviour and risk perception. Exposure to SARS Cov-2.</p> <p><b>Exclusion criteria</b></p> <p><b>Types of study:</b> Laboratory experiment, Case study.</p>		<p>Anticipated completion date is 31 December 2021. Review authors were contacted on 17 November 2021 for an update on progress. Currently awaiting response.</p>
<p><a href="#">COVID Health Related Behaviour Review project (COHeRe): (COVID Health Related Behaviour Review project (COHeRe), 2021a). Phase 2 Systematic Reviews of</a></p>	<p>Not given.</p>	<p>1. What psychological / psychosocial factors determine uptake and adherence to recommended behaviours to mitigate the spread of COVID-19?</p>	<p>Data extraction will include whether participants were asked about preventative behaviours in the following sectors:</p> <ul style="list-style-type: none"> <li>• Work</li> <li>• Retail</li> <li>• Education</li> </ul>	<p><b>Inclusion criteria</b></p> <p><b>Population:</b> general public, specific groups of people at increased risk of COVID-19 (not healthcare workers).</p>	<p>Not given.</p>	<p><b>No theoretical perspectives were stated.</b></p> <p>This ongoing SR will contribute towards phase two of the COHeRe project. Phase 1 is reported above</p>

**Table 4. Ongoing studies**

Citation & evidence type	Recency (Search dates)	Question/Aim	Specific settings stated	Inclusion/exclusion criteria	Theoretical perspective	Reviewer comments
<p><a href="#">determinants of COVID health related behaviour.</a> [Last Accessed 19/11/2021] COHeRe. (2021).  SR Ongoing</p>		<p>2. What psychological / psychosocial factors do not determine uptake and adherence to recommended behaviours to mitigate the spread of COVID-19?</p> <p>3. How strongly do identified factors relate to uptake and adherence to recommended behaviours to mitigate the spread of COVID-19?</p> <p>4. What is the quality of this evidence?</p>	<ul style="list-style-type: none"> <li>• Travel</li> <li>• Family and community</li> <li>• Sport, culture, leisure</li> </ul>	<p><b>Context:</b> studies which were conducted during the ongoing COVID-19 pandemic. Studies from Jan 2020 until the date of the final search.</p> <p><b>Exposure:</b> any potential psychosocial determinant of one or more of the behaviours of interest.</p> <p><b>Comparator:</b> absence of the determinant (compared to its presence), or as a continuous measure.</p> <p><b>Behaviours of interest:</b> handwashing, face covering, physical distancing, social distancing, isolation/quarantine, respiratory hygiene, cleaning surfaces,</p>		<p>(Hanratty 2021; Table 2).</p> <p>Phase two will be focused solely on existing and emerging COVID-19 research and will involve a series of systematic reviews, which will be living until October 2022.</p> <p>Authors were contacted and advised publication of the series of SRs should commence in Spring 2022.</p>

Table 4. Ongoing studies						
Citation & evidence type	Recency (Search dates)	Question/Aim	Specific settings stated	Inclusion/exclusion criteria	Theoretical perspective	Reviewer comments
				avoiding T-zone, others.		
Greenfield, S. et al. <a href="#">Health beliefs in the covid-19 pandemic and the impact on adherence to public health policy; a systematic review of cross-sectional studies</a> . 2021. PROSPERO: CRD42021239134  SR Ongoing	Searches were conducted from 1st Feb 2021 – 28th Feb 2021.	1. What are the different health beliefs surrounding the public health response to the COVID-19 pandemic? 2. What is the impact of these health beliefs on adherence to public health policies surrounding the COVID-19 pandemic? 3. Are there any discernible sociodemographic factors associated with likelihood of holding certain health beliefs?	Not given.	<b>Inclusion criteria:</b> Cross-sectional studies based on survey data, no geographical limit for inclusion, however only studies published in the English language will be eligible for inclusion. Studies published in peer-reviewed journals, include data on adults, aged 18 or over. Eligible studies must investigate health beliefs related to the COVID-19 pandemic. These health beliefs may include views about mask wearing, health-protective behaviours, cooperation with public health policies, vaccine intentions,	Health Belief Model.	<b>No particular settings were stated in this protocol.</b>  Anticipated completion date was in May 2021. Review authors were contacted on 17 November 2021 for an update on progress. Currently awaiting response.

Table 4. Ongoing studies						
Citation & evidence type	Recency (Search dates)	Question/Aim	Specific settings stated	Inclusion/exclusion criteria	Theoretical perspective	Reviewer comments
				knowledge of COVID-19 and belief in COVID-19 conspiracies.		
Mendonca, K. et al. <a href="#">Barriers and facilitators to populational adherence to prevention and control measures of COVID-19 and other respiratory infectious diseases: a rapid qualitative evidence synthesis.</a> 2020. PROSPERO: CRD42020205750  RR Ongoing	N/A	What are the barriers and facilitators to populational adherence to prevention and control measures for COVID-19, and other respiratory infectious diseases?	Not given.	<b>Inclusion criteria:</b>  Studies that use qualitative methods in their data collection and analysis; Studies that use mixed-methods if they include any qualitative methods of analysis; Studies published in English, Portuguese and Spanish, and published at any time.  <b>Exclusion criteria:</b>  Studies that collected data using qualitative methods but did not analyse these data using qualitative analysis methods;	Review authors stated that adapted dimensions derived from the Health Belief Model and the Behaviour Change Wheel will be used in this review.	<b>No particular settings were stated in this protocol.</b>  Anticipated completion date was in January 2021. Review authors were contacted on 17 November 2021 for an update on progress. Currently awaiting response.

Table 4. Ongoing studies						
Citation & evidence type	Recency (Search dates)	Question/Aim	Specific settings stated	Inclusion/exclusion criteria	Theoretical perspective	Reviewer comments
				Systematic reviews, books, policy reports, editorials, letter to the editor, conference papers, abstracts or expert reviews, unpublished studies, as well as non-peer reviewed studies.		
Ryan, R. et al. <a href="#">Communication to promote and support physical distancing for COVID-19 prevention and control: a rapid review (update, protocol)</a> . <i>Cochrane Consumers and Communication Group</i> , 12 Aug 2021a.  RR Ongoing	N/A	What are relevant, feasible and effective communication approaches to promote acceptance, uptake and adherence to physical distancing measures for COVID-19 prevention and control?	Not given.	<b>Inclusion criteria</b>  <b>Population and context:</b> Papers with a focus on physical distancing measures for prevention and/or control of COVID-19 or other similar infectious diseases (including SARS, MERS, influenza, Ebola and TB). <b>Approaches:</b> Papers with evidence on communication with individuals, organisations, communities and/or systems.	Not given.	<b>No particular settings or theoretical perspectives were stated in this protocol.</b>  Authors were contacted for a completion date and have advised that screening has just commenced.

<b>Table 4. Ongoing studies</b>						
<b>Citation &amp; evidence type</b>	<b>Recency (Search dates)</b>	<b>Question/Aim</b>	<b>Specific settings stated</b>	<b>Inclusion/exclusion criteria</b>	<b>Theoretical perspective</b>	<b>Reviewer comments</b>
				<b>Study design:</b> Guidelines, systematic reviews, Single studies from the COVID-19 era if there are gaps in the evidence from guidelines or reviews.		

\* RR Rapid review; CG Clinical guideline; EE Economic Evaluation; HTA health technology assessment; SR systematic review [delete / add as appropriate]

\* Caution: Preprints are preliminary reports of work that have not been certified by peer review. They should not be relied on to guide clinical practice or health-related behaviour.



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## 12. About the Wales COVID-19 Evidence Centre (WCEC)

The WCEC integrates with worldwide efforts to synthesise and mobilise knowledge from research.

We operate with a core team as part of [Health and Care Research Wales](#), are hosted in the [Wales Centre for Primary and Emergency Care Research \(PRIME\)](#), and are led by [Professor Adrian Edwards of Cardiff University](#).

The core team of the centre works closely with collaborating partners in [Health Technology Wales](#), [Wales Centre for Evidence-Based Care](#), [Specialist Unit for Review Evidence centre](#), [SAIL Databank](#), [Bangor Institute for Health & Medical Research/ Health and Care Economics Cymru](#), and the [Public Health Wales Observatory](#).

Together we aim to provide around 50 reviews per year, answering the priority questions for policy and practice in Wales as we meet the demands of the pandemic and its impacts.

**Director:**

Professor Adrian Edwards

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**Website:** <https://healthandcareresearchwales.org/about-research-community/wales-covid-19-evidence-centre>

### 13. APPENDIX – Resources searched during Rapid Evidence Summary

A single list of resources has been developed for guiding and documenting the sources searched as part of Rapid Evidence Summary. Where relevant, all 'priority resources' will be searched, but not all resources will be searched. Some sources will be searched as part of the subsequent Rapid Review (or Rapid Evidence Map).

Each resource will be recorded as being:

- *searched; nothing found*
- *searched; results found*
- *not searched; not relevant*
- *not searched, maybe relevant*

Resource	Success or relevancy of the retrieval
<b>Priority COVID resources for reviews</b>	
<a href="https://covidreviews.cochrane.org/search/site">Cochrane COVID Review Bank</a> https://covidreviews.cochrane.org/search/site	Searched, results found
<a href="https://www.covid19reviews.org/index.cfm">VA-ESP</a> https://www.covid19reviews.org/index.cfm	Searched, results found
<a href="https://app.iloveevidence.com/loves/5e6fdb9669c00e4ac072701d?population=5e7fce7e3d05156b5f5e032a&amp;classification=systematic-review">L*OVE – COVID-19</a> https://app.iloveevidence.com/loves/5e6fdb9669c00e4ac072701d?population=5e7fce7e3d05156b5f5e032a&classification=systematic-review	Searched, results found
<a href="https://www.collabovid.org/">Collabovid</a> https://www.collabovid.org/	Not searched, maybe relevant
<b>Additional COVID resources for reviews</b> <i>(Tailor the list according to the topic and potential evidence base. In some cases it may be preferable to scan the main (generic) source rather than COVID-19 specific product; listed under secondary research)</i>	
<a href="https://www.ncbi.nlm.nih.gov/research/coronavirus/">LitCovid</a> https://www.ncbi.nlm.nih.gov/research/coronavirus/	Not searched, maybe relevant
<a href="https://eunetha.eu/covid-19-treatment/">Rolling collaborative review of Covid-19 treatments - Eunetha</a> (not a searchable database but a list of living reviews) https://eunetha.eu/covid-19-treatment/	Not searched, maybe relevant
EPPI-Centre - Living map of the evidence of studies on COVID-19 identified in MEDLINE and EMBASE, that groups the evidence into broad themes https://eppi.ioe.ac.uk/eppi-vis/Review/Index	Searched, results found
<b>For technology / treatment questions</b>	
<a href="https://database.inahta.org/">International HTA database (ITS-HTA)</a> (for technology questions only) https://database.inahta.org/	Not searched, not relevant
<a href="https://eunetha.eu/services/covid-19/">EUnetHTA – COVID 19 response</a> (not a searchable database but a lists of evidence covering diagnostics and treatments) https://eunetha.eu/services/covid-19/	Not searched, not relevant
<b>Additional COVID resources for primary studies</b>	
<a href="https://app.iloveevidence.com/loves/5e6fdb9669c00e4ac072701d?population=5e7fce7e3d05156b5f5e032a&amp;classification=primary-study">L*OVE primary studies</a> https://app.iloveevidence.com/loves/5e6fdb9669c00e4ac072701d?population=5e7fce7e3d05156b5f5e032a&classification=primary-study	Not searched, not relevant
<a href="https://covid-19.cochrane.org/">Cochrane COVID-19 Study Register</a> https://covid-19.cochrane.org/	Not searched, not relevant

<a href="https://covid-19.cochrane.org/">LitCovid</a> https://covid-19.cochrane.org/	Not searched, not relevant
<b>Secondary research resources for reviews (non-COVID-19)</b> (Tailor the list according to the topic and potential evidence base, talk to stakeholder before proceeding with this type of search)	
<a href="https://labs2020.tripdatabase.com/">Trip</a> (Trip Pro can be accessed by an institutional based subscription based via institution, otherwise use Trip) https://labs2020.tripdatabase.com/ Link to search for COVID-19 related research: https://www.tripdatabase.com/search?criteria=%22covid+19%22+OR+%22novel+coronavirus%22 (As a <b>covid resource for guidelines</b> - add an additional COVID search term and filter by UK guidelines, covers NICE, and SIGN. Can also filter for non-UK guidance)	Searched, results found
<a href="https://www.cochranelibrary.com/cdsr/reviews">Cochrane Database of Systematic Reviews (CDSR)</a> https://www.cochranelibrary.com/cdsr/reviews	Searched, nothing found
<a href="https://www.campbellcollaboration.org/better-evidence.html">Campbell Collaboration</a> https://www.campbellcollaboration.org/better-evidence.html	Searched, nothing found
JBI (via OVID) (Subscription based service – WCEBC has a subscription)	Searched, nothing found
<a href="https://www.epistemonikos.org/en/advanced_search">Epistemonikos</a> https://www.epistemonikos.org/en/advanced_search	Searched, results found
<a href="https://www.crd.york.ac.uk/prospéro/">PROSPERO</a> https://www.crd.york.ac.uk/prospéro/	Searched, results found
<a href="https://pubmed.ncbi.nlm.nih.gov/clinical/">PubMed Clinical Queries</a> https://pubmed.ncbi.nlm.nih.gov/clinical/	Not searched, not relevant
<a href="https://pubmed.ncbi.nlm.nih.gov/">PubMed</a> Filter by systematic reviews, reviews or meta-analysis once search undertaken https://pubmed.ncbi.nlm.nih.gov/	Searched, results found
<b>Secondary resources for reviews relevant to local/UK context</b>	
Public Health England (PHE) COVID-19 Rapid Reviews https://phelibrary.koha-ptfs.co.uk/covid19rapidreviews/#Table	Searched, results found
NICE resources for COVID reviews <i>Kimberley Cann (Kimberley.Cann@nice.org.uk), NICE Implementation Facilitator for Wales, can assist with searching this resource and identifying additional ongoing or planned reviews</i>	Searched, results found
<a href="http://www.healthcareimprovementscotland.org/our_work/coronavirus_covid-19/evidence_for_scotland.aspx">Healthcare Improvement Scotland – COVID-19: Evidence for Scotland</a> (not a searchable database but a lists Once for Scotland guidance, rapid evidence reviews, NICE rapid guidelines evidence covering diagnostics and treatments) http://www.healthcareimprovementscotland.org/our_work/coronavirus_covid-19/evidence_for_scotland.aspx	Not searched, maybe relevant
<a href="https://hselibrary.ie/covid19-evidence-summaries/">Ireland, HSE Library, Covid-19 Summaries of Evidence</a> not a searchable database but a list of all summaries of evidence that HIQA have been asked to address) https://hselibrary.ie/covid19-evidence-summaries/	Not searched, maybe relevant
HIQA Health Information and Quality Authority (Ireland) – Rapid reviews https://www.hiqa.ie/reports-and-publications/health-technology-assessment/rapid-review-public-health-guidance	Not searched, not relevant
<a href="https://www.gov.uk/government/organisations/scientific-advisory-group-for-emergencies">SAGE</a> https://www.gov.uk/government/organisations/scientific-advisory-group-for-emergencies	Searched, results found
<b>Secondary resources for reviews produced by key international organisations</b>	
ECDC European Centre for Disease Prevention and Control (COVID-19 outputs)	Searched, results found
CDC centre for Disease Control and Prevention - Guidance for COVID-19 (US) https://www.cdc.gov/coronavirus/2019-ncov/communication/guidance.html	Searched, nothing found
AHRQ Agency for Healthcare Research and Quality (US)	Searched, nothing found

<a href="https://www.ahrq.gov/coronavirus/health-systems-research.html">https://www.ahrq.gov/coronavirus/health-systems-research.html</a>	
NASEM The National Academy of Sciences Engineering Medicine - Coronavirus Resources Collection (US) <a href="https://www.nap.edu/collection/94/coronavirus-resources">https://www.nap.edu/collection/94/coronavirus-resources</a>	Not searched, not relevant
Australian National COVID-19 Clinical Evidence Task Force - Living Guidelines; mainly treatment <a href="https://covid19evidence.net.au/">https://covid19evidence.net.au/</a> <i>(also incorporated in Trip)</i>	Not searched, not relevant
COVID-19 Evidence Alerts from McMaster PLUS   Home (Canada) <a href="https://plus.mcmaster.ca/COVID-19/">https://plus.mcmaster.ca/COVID-19/</a>	Not searched, not relevant
NCCMT COVID-19 rapid reviews) (Canada) <a href="https://www.nccmt.ca/covid-19/covid-19-evidence-reviews">https://www.nccmt.ca/covid-19/covid-19-evidence-reviews</a> <i>(also incorporated in VA-ESP)</i>	Searched, results found
WHO Global literature on coronavirus disease (COVID-19) database <a href="https://search.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/">https://search.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/</a> <i>(also incorporated in VA-ESP)</i>	Searched, results found
<b>Additional resources searched</b>	
Google Advanced Search <a href="https://www.google.co.uk/advanced_search">https://www.google.co.uk/advanced_search</a>	Searched, results found
BSIU Lit Rep Database Search <a href="https://docs.google.com/spreadsheets/d/1qfR4NgnD5hTAS8KriPaXYhLu1s7fpZJDq8EIXQY0ZEs/edit#gid=0">https://docs.google.com/spreadsheets/d/1qfR4NgnD5hTAS8KriPaXYhLu1s7fpZJDq8EIXQY0ZEs/edit#gid=0</a>	Searched, results found
PsycInfo (Proquest)	Searched, results found
Personal Communications	Searched, results found