



## Contextual factors that shape uptake of COVID-19 preventive measures by persons of Ghanaian and Eritrean origin in the Netherlands: A focus group study



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### ARTICLE INFO

#### Keywords:

COVID-19

Preventive behaviour

Ethnic minority groups

### ABSTRACT

**Objectives:** To explore the contextual factors that shape uptake of COVID-19 preventive measures, in specific migrant and ethnic minority populations, with a focus on migration-related, sociocultural and socioeconomic conditions.

**Design:** A qualitative design, consisting of three online focus group discussions.

**Setting:** This study was conducted amongst smaller, albeit substantial, migrant and minority ethnic populations in the Netherlands.

**Participants:** A total of 25 participants (12 male; 13 female) of Ghanaian and Eritrean origin, purposively sampled to ensure diversity within groups, with regards to sex, age, educational level, occupation, household size and length of stay in the Netherlands. Focus group discussions were held online, therefore, experience in the use of video conferencing software was a prerequisite.

**Results:** Participants' awareness and knowledge of COVID-19 and COVID-19 preventive measures was shaped by migration-related factors, such as limited Dutch proficiency, by access to understandable information and interference of misinformation. Participants' engagement by COVID-19 preventive measures was subject to COVID-19 threat appraisal and the ease with which complex behavioural messages could be translated to individual situations. Lastly, a strong social norm to keep with cultural and religious practices, and limited opportunity for preventive behaviour in the work and home context hinder the uptake of preventive behaviour following a decision to act according to measures.

**Conclusions:** Migration-related, sociocultural, and socioeconomic factors shape uptake of COVID-19 preventive measures amongst persons of Ghanaian and Eritrean origin in The Netherlands. To ensure equitable uptake our results suggest the importance of timely spread of multilingual information tailored to literacy needs; as well as, education and modelling delivered through online platforms and by leading figures in respective communities; and, regulations to ensure continued access to financial and material resources to minimise negative spill-over effects and exacerbation of inequality.

### Background

Uptake of preventive measures required to reduce SARS-CoV-2 virus transmission is crucial for the control of the coronavirus disease 2019

(COVID-19) pandemic. Indeed, modelling studies show preventive behaviours such as hand washing and social distancing can slow down the spread of infection (Mahikul et al., 2021; Chang et al., 2020). Vice versa, inequalities in infection rates between population groups may

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<https://doi.org/10.1016/j.jmh.2021.100070>

Received 29 July 2021; Received in revised form 8 October 2021; Accepted 11 October 2021

Available online 13 October 2021

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reflect differences in uptake of preventive measures (Ogedegbe et al., 2020).

In high-income countries, migrant and minority ethnic populations have been shown to be at increased risk of confirmed SARS-CoV-2 infection (Sze et al., 2020; Hayward et al., 2021; Mathur et al., 2021). In the Netherlands, higher infection seroprevalence was observed amongst persons of Ghanaian origin after the first wave of infections (Coyer et al., 2021). In line with the crucial role of human behaviour, previous studies indeed provide evidence to suggest lower uptake of preventive measures in migrant and minority ethnic populations (Atchison et al., 2021; Block et al., 2020). Such uptake of preventive, or protective, behaviour can be understood as a stage-wise process in which a person becomes aware of the disease and available measures to prevent infection; gets engaged by appraising the measures as personally relevant; and makes a decision about acting upon the recommended measures (Weinstein et al., 2008). The uptake of preventive measures is, furthermore, deeply rooted across one's social-ecological context (Casola et al., 2021). For example, studies in US and UK have pointed at the fact that migrant and minority ethnic populations relatively frequently experience difficulties to act upon required preventive behaviours because of their engagement in essential jobs or their relatively large household sizes (Ogedegbe et al., 2020; Mathur et al., 2021; Niedzwiedz et al., 2020).

A further understanding of how contextual factors shape the uptake of preventive measures in migrant and minority ethnic populations is imperative to inform interventions that effectively promote preventive behaviours in this highly affected group. Multiple authors have pointed at complex health determinants and long standing structural inequities that fuel ethnic inequalities in the SARS-CoV-2 infection rates, i.a. by curtailing opportunity to act upon preventive measures (Bhala et al., 2020; Diez Roux, 2020; Greenaway et al., 2020; Kawachi, 2020; Weiss and Paasche-Orlow, 2020; Yancy, 2020). Social inequalities that result from structural discrimination and racism, e.g. segregation into overcrowded urban housing centres and workplaces; presence of COVID-19 in the direct environment; access to reliable information; health literacy levels; sociocultural and gender norms may differentially affect uptake of preventive measures by migrant and minority ethnic populations (Casola et al., 2021; Bhala et al., 2020; Weiss and Paasche-Orlow, 2020; Wolf et al., 2020).

Current understanding of the uptake of preventive measures is based mainly on research amongst larger migrant and minority ethnic populations in the UK and USA (Atchison et al., 2021; Block et al., 2020; Denford et al., 2021). Research on smaller migrant and minority ethnic populations and in other country settings is scarce. The research project 'Ethnicity and COVID-19: Epidemiology and control measures' initiated at the request of The Netherlands Organization for Health Research and Development aims to establish a comprehensive view on COVID-19 amongst migrant and minority ethnic populations in The Netherlands and formulate policy recommendations (Coyer et al., 2021). Specifically, this qualitative study intended to gain an understanding of smaller, albeit substantial, migrant and minority ethnic populations with varying migration backgrounds, migration motives and length of stay in the Netherlands. The aim of this study was to explore, in persons of Ghanaian and Eritrean origin in the Netherlands, the contextual factors that shape the uptake of COVID-19 preventive measures, with a specific focus on migration-related, sociocultural and socioeconomic conditions.

## Methods

### Design

We chose a qualitative research design. For this study we conducted three focus group discussions. As prevailing COVID-19 preventive measures at the time of study prohibited group gathering, the group discussions were held online.

### Sample

We included persons of Ghanaian and Eritrean origin; populations our research team had relatively good access to. We sought to include persons with varying migration backgrounds, migration motives and length of stay in the Netherlands. Persons from Ghana initially migrated to the Netherlands in the 70 s and 80 s following economic hardship and political instability. Persons from Eritrea came to the Netherlands as refugees at several points in time, most recently in 2014 following political instability and fear of persecution. There is substantial variation in e.g. educational level and political affiliation between the most recent and previous cohorts of Eritrean refugees (Pharos. Factsheet Eritrese vluchtelingen 2019). We therefore included one group of people with Ghanaian origin and two groups with persons of Eritrean origin – one with participants who were recent refugees to the Netherlands (length of stay of 0–5 years) and one with participants who were earlier refugees to the Netherlands (length of stay of 10+ years). We used purposive sampling to ensure diversity within groups, with regards to sex, age, educational level, occupation, household size and length of stay in the Netherlands.

### Recruitment

Eritrean participants were recruited by YJ, aided by key informants in the Eritrean community who were part of a larger network of key informants associated with Pharos, Dutch centre of expertise on health differences. They recruited participants from their personal contacts and additional snowballing, whereby confirmed participants were asked to invite others. Ghanaian participants were recruited by LB, who recruited participants from her personal contacts and additional snowballing. All participants were contacted by telephone. A small number of people declined participation due to a general low trust in research and lack of time. Following the group discussion, all participants received a €15,- gift card by post.

### Setting

We conducted the group discussions in October 2020. In the Netherlands, preventive measures became more stringent on October 14th due to the second wave of COVID-19, meaning prevailing measures slightly differed between groups. The basic measures however remained the same, i.e.: wash the hands often; cough and sneeze into the elbow; wear a face masque in public transport (advised in all public spaces, however, legal grounds were lacking until Dec. 1st); avoid physical contact, e.g. shaking hands; keep a social distance of 1.5 metres; work from home, if possible; avoid busy places; limit the number of visitors at home to three; in case of symptoms, stay home and get tested; and, if tested positive, self-isolate and isolation of household members.

### Data collection

Group discussions were held online using video conferencing software ZOOM. We chose this platform as key informants indicated most participants had experience in its use, e.g. as part of their Dutch integration course or for online church meetings.

We held two group discussion with Eritrean participants. Participants were divided based on the number of years they lived in the Netherlands, i.e. 0–5 years or 10–35 years. The Eritrean group discussions were conducted in Tigrinya by YLT. MT was present for both group discussions, YJ was also present for the latter. The Ghanaian group discussion was conducted in English by MT, supported by LB. CA and KS were also present for this group discussion. Group discussions took approximately two hours. The same semi-structured interview guide was used for all group discussions. It included questions on access to information, misinformation, awareness of COVID-19, awareness of and

engagement by COVID-19 preventive measures, and factors affecting uptake of recommended behaviour.

All group discussions were audio recorded and transcribed verbatim. Transcription of the group discussions in Tigrinya included translation in Dutch and was done by an independent translation agency. These transcripts were quality checked by YLT. Transcription of the group discussion in English was done by MT.

#### Data analysis

We analysed the transcripts using thematic analysis. We used qualitative data analysis software MAXQDA. MT developed a coding system based on the research question and theoretical framework (see Textbox 1). Based on two complementary theories (Weinstein et al., 2008; Norman et al., 2005), we analysed the uptake of preventive behaviours using codes referring to awareness of, engagement by, and acting upon preventive measures, and to perceived vulnerability, perceived severity, perceived response efficacy and self-efficacy. To identify contextual factors shaping the uptake of the preventive measures, we used codes as language, work, culture and religion which we based on a socioecological model describing the implications of one's social context on behavioural decision-making (Casola et al., 2021; CDC 2020).

MT coded all transcripts accordingly. MT and JH discussed coded transcripts for purposes of constant comparison, in which each interpretation and finding is compared with existing findings as they emerge from the data analysis (CDC 2004). MT, JH and KS discussed the final results in relation to the research aim.

#### Textbox 1. Theoretical Framework

According to Precaution Adoption Process Model (Weinstein et al., 2008), adopting preventive measures is a stage-wise process in which a person becomes aware, acquires knowledge, of the disease and available measures to prevent infection, e.g. by gathering information; is engaged by the measures as they become personally relevant; and, makes a decision about acting upon the recommended preventive behaviour. Once decided to act, in the final stages, the person actually performs and maintains the protective behaviour.

How persons arrive at the decision to act is explained by the Protection Motivation Theory (Norman, Boer & Seydel 2005), which predicts that someone's motivation to take preventive action depends on one's threat appraisal, including the perceived severity of and vulnerability for a disease, and ones coping appraisal, including the perceived efficacy of the response and self-efficacy to perform the response. Furthermore, those who experience low cost of engaging in the recommended behaviour will be more likely to do so.

#### Ethics approval and consent to participate

We followed the ethical principles for medical research involving human subjects as laid down in the Declaration of Helsinki and adopted by the World Medical Association (WMA 2013). According to the Dutch Medical Research Involving Human Subjects Act, this study did not require approval by a medical research ethics committee in the Netherlands. Each respondent was adequately informed of the aims and methods of the study and audio recorded oral consent for participation and publication was obtained.

#### Patient and public involvement statement

This study was part of a larger research project. Public involvement ensued following preliminary findings from the project's seroprevalence study (Coyer et al., 2021). Community leaders were invited to help interpret findings from the seroprevalence study and discuss needs for pre-

ventive action in a meeting and, in a separate meeting, findings were shared with research participants of the seroprevalence study. Themes which emerged from the first meetings were included in the current study's semi-structured interview guide (see paragraph on data collection).

For the current study we collaborated with Pharos and the HELIUS-study to establish a research team that involved members with elaborate, first-hand knowledge of the included population groups. Pharos' network of key informants played a key role in gaining access to Eritrean communities and recruiting study participants. The larger research team furthermore helped develop our study's interview guide, recruit participants, organize and conduct group discussions and interpret findings.

#### Results

A total of 25 participants (13 female; 12 male) contributed to the group discussions. Nine participants of Eritrean origin were recent refugees to the Netherlands, with a length of stay of 0–5 years. They were on average younger; were currently enrolled in vocational school or Dutch integration course. Another nine participants of Eritrean origin were earlier refugees to the Netherlands, with a length of stay of 10+ years. They were on average older; of varying educational level, the majority having finished secondary education; and enrolled in various occupations or retired. Lastly, seven participants of Ghanaian origin of varying age groups; had a varying length of stay; were, on average, higher educated and enrolled in various occupations. See Table 1. for a complete description of the sample and variation in characteristics of participants per focus group discussion.

#### Awareness of COVID-19 and COVID-19 preventive measures

Participants' awareness and knowledge of COVID-19 and COVID-19 preventive measures was shaped by migration-related factors, such as limited Dutch proficiency and access to understandable information. To circumvent language barriers they sought information from social networks, both online on social media and offline from community leaders.

Eritrean participants, those with a shorter stay in particular, experienced a language barrier in accessing the official COVID-19 information in Dutch. They resorted to social media for information in their mother tongue. All participants reported having to navigate a fair amount of misinformation on social media. They themselves fact checked misinformation to official channels and in their network, but others in their respective communities did not. They shared examples of community leaders who stepped up to share factual information in respective languages. Ghanaian participants shared examples of proximate community leaders; Eritrean participants of authority figures from the larger Eritrean diaspora, such as medical doctors of Eritrean origin.

*“Thankfully we have men in our community who try to translate what the Dutch government tells the public, when it's seven o'clock and on the press conference the prime minister tells us what to do. So these Ghanaians in the community try to translate that in our local language. Or in English. And the churches try to live up to expectations as well, by obeying what the government has said.” (102204)*

*“There were two doctors from Sweden and America who gave a translation in Tigrinya about what the coronavirus was exactly. We have widely distributed this message via WhatsApp, to younger and older people. In the Netherlands you also have Eritrean doctors who can give explanations in Tigrinya about coronavirus. And we should continue to do so.” (101902)*

#### Engaged by COVID-19 and COVID-19 preventive measures

Participants said whether they were engaged by preventive measures, i.e. motivated to take preventive action, was shaped by how they themselves and others in their community appraised the threat posed by

**Table 1**  
Sample characteristics.

	FGD 1 <sup>1</sup>	FGD 2 <sup>2</sup>	FGD 3 <sup>3</sup>	Total
Number of participants	9	9	7	25
Sex				
Female	3	5	5	13
Male	6	4	2	12
Age group				
18–25	5	–	–	5
25–35	1	2	2	5
35–45	1	–	2	3
45–55	2	4	2	8
55–65	–	2	1	3
65+	–	1	–	1
Educational level				
Basic secondary education / Middle school	–	1	–	1
Senior secondary education / High school	3	5	1	9
Vocational school	5	2	1	8
College	–	1	2	3
University	–	–	3	3
Occupational level				
Elementary	2	3	1	6
Lower	6	1	3	10
Intermediate	–	1	2	3
Higher	–	–	–	–
Academic	–	–	1	1
Retired	–	2	–	2
Number of people in household				
1	5	6	–	11
2–4	2	2	5	10
5+	1	1	2	4
Religion				
Islam	4	–	–	4
Christian	5	2	5	12
Christian Orthodox	–	6	–	6

<sup>1</sup> focus group discussion with participants of Eritrean origin who were recent refugees to the Netherlands (length of stay of 0–5 years).

<sup>2</sup> focus group discussion with participants of Eritrean origin who were earlier refugees to the Netherlands (length of stay of 10+ years).

<sup>3</sup> focus group discussion with participants of Ghanaian origin with varying length of stay in the Netherlands.

COVID-19; and, was subject to the ease with which complex behavioural messages could be translated to their individual situation.

Participants spoke about how sociocultural beliefs and visibility of COVID-19 in their community affected threat appraisal of COVID-19. Ghanaian participants were concerned perceived severity was low within their community because the high exposure to SARS-COV-2 (7) was not visible in their direct living environment. Ghanaian and Eritrean participants alike talked about community members not appreciating the severity of the disease due to the mild symptoms they perceive in persons with COVID-19.

*“...most of the time in the black community we tend to have this ‘seeing is believing’. ... but because they have not seen somebody really sick of the virus or dying from the virus it is so difficult for them to come to terms with it. That’s what I’ve also noticed.”* (102206)

Participants observed how threat appraisal affected how much they themselves as well as others’ were engaged by COVID-19 and COVID-19 preventive measures. E.g. participants who were older were more engaged and were especially concerned about low uptake of social distancing and self-isolation. And they shared examples of the little motivation to get tested when experiencing mild symptoms.

*“Especially for old people like me, the risk is very high. I find it incredibly difficult to express that the rules should be adhered to, especially in [small grocery stores]. And, also because they indicate that older people run a higher risk, it makes me incredibly fearful, considering my age and the consequences that come with that.”* (101903)

*“... because of what the government is saying about teenagers that under seventeen or eighteen they don’t contract the virus like we do when we’re older. So they are taking advantage of that. And if you want to advise them they say ‘oh I am not being affected.’ And forgetting that they have us, the old mothers at home. You will bring it home and it will affect us.”* (102205)

*“... the corona itself is complex in terms of its nature. It doesn’t come as corona, it comes as something; fever...; it comes as headache... So in the first instance you are not thinking of corona. ... But in the first instance if I have a headache I want to deal with it. And then if it’s persistent headache then, maybe then I’ll talk of testing.”* (102207)

Lastly, participants shared they experience difficulties applying the preventive measures to individual situations. A number of misunderstandings concerning the implementation of COVID-19 preventive behaviours came up – most often amongst participants with a shorter length of stay in the Netherlands. Participants attributed these difficulties to the continuous change of prevailing measures and the fact that they are formulated as advice. They shared the changing, equivocal messages were open to interpretation and disliked having to base decisions on their judgement rather than simply following instructions, e.g. in the decision to get tested. This at times caused people to choose their own preventive measures, such as the use of vitamin D or drinking concoctions, rather than adopting prevailing measures.

*“Someone had gotten a positive result from the corona test and subsequently I did not know if I had to be tested and if I was allowed to be amongst people. ... When I have informed my employers that I have been*

*in contact with someone who is getting tested, do I still go to work or do I have to stay at home?"* (100705)

*"We get, I see, two streams of information. We have information that tells us, if we experience symptoms of corona than we have to stay away from the public, stay at home for two weeks, right? And then we have [information] that says if you think you have corona, get tested. Now, these are two options. So which one do you choose? ... We are not really informed with precision, exactly what we have to do. Because I always see two things: two weeks quarantine at home. So you stay at home, deal with the whole thing yourself, drink your [concoctions], taking vitamin D tablets and all that and then you become healthy. And then you step out and you join the community. ... - you step out and you could still infect somebody with it."* (102204)

#### Acting upon COVID-19 preventive measures

Participants shared examples of how sociocultural and socioeconomic factors influenced their behaviour once they had decided to act according to the preventive measures. Participants talked about ways in which cultural and religious practices, social norms, occupation, working and living environment hinder the uptake of preventive behaviour.

All participants, and Eritrean participants in particular, expressed concern about measures that require behaviour contrary to what they are culturally accustomed to. They describe their culture as one with a strong tradition of social gathering for occasions ranging from coffee ceremonies to baptisms, weddings and religious holidays, as well as one with close physical contact.

Participants spoke about how the strong social norm with regards to their cultural and religious practices affects adherence to preventive measures. They shared examples of churches and mosques setting an important example in their communities by implementing preventive measures and encouraging their members to equally do so. Regardless of the cost of the measures, e.g. loss of social interaction, which participants perceive to be particularly large for their faith-based communities. Participants who are Christian and visit church also shared concerns about certain religious practices and the influence of more pious religious leaders on preventive behaviour.

*"- Even the way in which we greet each other is different. We make contact with our faces. Some people only shake hands. ... We have physical contact, which makes this harder. ... It is hard to say no and therefore we feel vulnerable."*

*- I met [people from the minority ethnic group] Wednesday. ... I greeted them with my hand on my chest, but they didn't accept that."* (100702 & 100707)

*"So for me I think the last measure which was given, about limiting the number of people to churches, is a very big blow... Thinking about the social culture. Such a psychological effect on the elderly, especially those who are fifty and above. Those who are always at home and maybe not working so the only way to get in touch with others is going to church, to a funeral and parties or maybe weekend activities. But now that's been blocked and they are compelled to stay home and that is going to affect their health."* (102207)

*"In our religion there are certain rituals that need to be upheld. For example, bowing towards and greeting the cross and the bible. Some churches use the same cross, just for the sake of form. Can you imagine a hundred people in church perform this same act while one person is infected with the coronavirus? Everyone in that church will be at risk for infection. It is of utmost importance that the church leaders are well informed about the rights and obligations and are educated about this. ... When I asked a priest about the cross and the coronavirus he became angry. He reacted strongly and said I should not interfere with God's will."* (101901)

Various participants indicated they cannot work from home, are not facilitated in or cannot act upon preventive measures, e.g. social distanc-

ing, at work. Ghanaian participants also shared concerns about others in their direct living environment who are not able to self-isolate following the necessity to work to sustain an income. A factor exacerbated by their crowded housing situation.

*"As I've mentioned before, I have a job in which I often work with machinery. It is sometimes impossible to keep 1,5 m to 3 m distance from each other. When something needs repairing, there is barely any distance from each other. ... And for those who are an at-risk group there are no clear regulations."* (101907)

*"Here in [city district] it is not like a normal family whereby you live with your husband or your partner, with your kids and dogs - I mean pets. But you have three different families in one household. And my concern is, how do the other tenants comply themselves if one of the families is tested positive? Do they comply to the rules by staying home? Because one, the undocumented migrants, may think I must go to work; if I don't go to work I will not get paid. So they are compelled to go. With a positive test in their household. That is my major concern because I have seen it happening. In the Indians, the Pakistani, and the Ghanaians. Now brother within our own street."* (102201)

#### Discussion

Our qualitative study amongst persons of Ghanaian and Eritrean origin suggests that the uptake of preventive measures in place to reduce the transmission of SARS-CoV-2 is subject to how awareness of, engagement by, and opportunities to act upon these measures are shaped by migration-related, sociocultural and socioeconomic factors. Our results show that persons with limited Dutch proficiency depend on informal sources, i.e. social media and community leaders, for information on COVID-19 and COVID-19 preventive measures. The limited access to understandable information and interference of misinformation impacts on awareness of recommended preventive measures. Furthermore, perceived severity of COVID-19 in the direct environment and the difficulty of translating unclear and inconsistent preventive measures to individual situations differentially affects how persons get engaged by and are motivated to act upon preventive measures. Lastly, a strong social norm to keep with cultural and religious practices, and limited opportunities for preventive behaviours in the work and living environment, e.g. to work from home or to self-isolate, hinder preventive behaviour following a decision to act according to the measures.

The need for linguistically tailored information apparent from our findings, is widely acknowledged. However, for most migrant populations in Europe language-concordant information is not available. A slight majority (64%) of European countries were found to have written online COVID-19 material available in alternative languages; a mere 48% - including the Netherlands - had materials available in at least one of the three most common migrant languages of the country (Nezafat Maldonado et al., 2020). Furthermore, the readability of online COVID-19 content is often too difficult to understand (Weiss and Paasche-Orlow, 2020; Halboub et al., 2021; Szmuda et al., 2020). Our study indicates meeting language and literacy needs is paramount to improve uptake of preventive measures. Besides timely provision of multilingual information by national authorities, including translations of press conferences, this may be addressed by adapting language level and using visual aids.

In addition, our study as well as others demonstrate difficulties in understanding unclear and inconsistent information in enacting recommended preventive behaviour, an issue which may be exacerbated by limited health literacy (Casola et al., 2021; Weiss and Paasche-Orlow, 2020; Wolf et al., 2020; Denford et al., 2021). The capability to undertake preventive behaviours requires people to understand what needs to be done, under what precise circumstances, how to do it and why it is important. In addition to making information available, education should therefore focus on promoting understanding of the bene-

fits of the behaviours and on how and when to enact them effectively (West et al., 2020).

The source of communication is furthermore important in promoting uptake of preventive measures. Our findings show that informal networks – online social networks, as well as local or diasporic minority ethnic networks – were an important source of information. In the United States, minority ethnic populations similarly used online social networks (e.g. Facebook, Twitter) in addition to government sources, for content on COVID-19 (Campos-Castillo and Laestadius, 2020; Fridman et al., 2020). A finding that was negatively associated with knowledge of COVID-19 and adherence to social distancing, potentially because the widely distributed misinformation on social media reduces trust in public health messages (Fridman et al., 2020; Soveri et al., 2021). It has also been suggested that media stigmatisation of minority communities decreases trust in government and public health authorities' communications (Khunti et al., 2020). Based on these findings, an additional advice may be to communicate preventive measures through trusted platforms, organizations and individuals, tailored per migrant and minority ethnic community.

Collaboration with community- and religious leaders in communicating COVID-19 preventive measures can increase perceived in-group power and help engage collective and faith-based communities (Breakwell et al., 2021; Henry Akintobi et al., 2020). E.g. cooperation with religious institutions led to low numbers of SARS-CoV-2 infections within the Arab ethnic minority in Israel, following early closure of mosques and high adherence to social distancing measures (Saban et al., 2020). Our findings suggest that community- and religious leaders have a dominant voice that can encourage as well as unnerve community members in the uptake of preventive behaviour. It is therefore important to consider which leaders to contract in modelling preventive behaviour and effective communication should address social norms regarding cultural and religious practices, and recognize the considerable cost of preventive measures for faith-based communities.

Lastly, our findings suggest that acting upon preventive measures is subjected to socioeconomic factors, e.g. opportunity to work from home, or to miss work in order to self-isolate. Similarly, a cross-sectional survey in the UK showed those with lowest household income were less likely to be able to work from home and to be able to self-isolate (Atchison et al., 2021). In these cases involving institutions, e.g. employers organizations and or labour unions, is vital to support individuals to adopt preventive behaviour. Employers can see to adherence of preventive measures at work, risk-assess staff and take further measures to protect at risk individuals, and provide paid leave when there is a need to self-isolate (West et al., 2020; Khunti et al., 2020).

#### *Strengths and limitations*

This study is one of the first few to provide insight into the uptake of COVID-19 preventive measures amongst migrant and minority ethnic groups outside the UK and USA. We recognise that besides the Ghanaian and Eritrean groups included in this study, other populations need consideration in the COVID-19 response. It is advisable to study uptake of preventive measures amongst majority populations to identify distinctive needs and similarities, e.g. amongst majority groups of comparable socio-economic standing (Blair et al., 2021). We hope our findings can give an indication as to how contextual factors affect differential uptake of preventive measures to help inform interventions that effectively promote them, tailored to specific group needs where required. Involving key informants for the recruitment of participants strengthened our study as it enabled us to include a diverse group of people and created a trusted environment where participants freely shared their experiences.

Regardless, when interpreting the results, some limitations need to be considered. Firstly, this qualitative study was part of a larger applied research project initiated to generate timely, evidence-based policy recommendations during a period of lockdown. This required methodological decisions that need consideration. I.e. findings are based on a

relatively small number of group discussions, group discussions were held online and the group discussions had a considerably large number of participants. We did not face major technical difficulties, yet online communication comes with its own dynamic, and in combination with the large group sizes may at times have hampered natural flow of the discussion. The large group sizes were a consequence of recruiting a relatively large number of participants to allow for potential no-show. Secondly, although participants openly spoke about experienced difficulties in adopting preventive behaviour, we cannot disregard that our presence – posing questions as a public health institution, i.e. the public health department of a well-known academic hospital – evoked socially desirable answers on description of uptake of COVID-19 preventive measures. We therefore refrained from judging if participants successfully adopted preventive behaviour and rather described conditions, which shaped their capability to do so. Lastly, the broad array of relevant themes and the limited timespan for the conduct of this study restricted our opportunity to reach saturation in data collection and permitted us to merely touch upon some of the ways in which contextual factors impact on individual preventive behaviours. Furthermore, at the time of study vaccination was not yet a probable preventive behaviour and as such was not included as a subject of study. However, similar strategies to promote uptake have been suggested (Razai et al., 2021). It is worth to further study the interplay of factors that differentially shape adoption of various COVID-19 preventive behaviours in order to reduce the transmission of SARS-CoV-2.

#### **Conclusion**

Migration-related, sociocultural and socioeconomic factors shape awareness of and engagement by preventive measures, and opportunity to act upon preventive behaviours amongst persons of Ghanaian and Eritrean origin in The Netherlands. To ensure equitable uptake of COVID-19 preventive measures, and onwards the equitable uptake of and informed decision-making regarding COVID-19 vaccination, our results underline the importance of timely spread of multilingual information tailored to literacy needs; as well as, education and modelling delivered through online platforms and by leading figures in respective communities; and, regulations to ensure continued access to financial and material resources to minimise negative spill-over effects and exacerbation of inequality.

#### **Funding statement**

This work was supported by The Netherlands Organization for Health Research and Development grant number 10430022010002

#### **Competing interest statement**

The authors declare that they have no competing interests.

#### **Author's contribution**

KS, CA, MP, MvdM, FeF and MT took part in the conceptualization of the study. KS, CA, MP, MvdM and FeF provided supervision of the study. KS, MvdM, MP, FeF, YLT, LB and MT were involved in methodology and data curation for the study, i.e. they composed the semi-structured interview guide; YJ and LB recruited participants; and YLT, LB and MT conducted focus group discussions. YJ, YLT, LB, CA, KS and MT discussed first outcomes. KS, JH and MT conducted formal analysis of the data. MT, JH and KS had the lead in writing the original draft. All authors took part in writing through review and editing of the manuscript. All authors read and approved the final manuscript.

#### **Data sharing statement**

The datasets generated and analysed during this study are available from the corresponding author on reasonable request.

## Declaration of interests

None.

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