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Exploring community perceptions, attitudes, and practices regarding the Covid-19 pandemic in Karachi, Pakistan

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4 2 Karachi, Pakistan
5 3

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Abstract

Background: The Government of Pakistan is facing difficulty to contain the surge of Covid-19 due to the country's social, political, economic, and cultural context. Experiences from the previous epidemic suggest that community perceptions, social norms, and cultural practices can impede the containment of Covid-19. To understand social responses towards Covid-19, the study aims to explore the understanding of Covid-19 and acceptance of control measures among community members.

Methods: We conducted an exploratory qualitative study using a purposive sampling approach, at two communities of Karachi, Pakistan. In-depth interviews were conducted with community members including, young, middle-aged, and older adults of both genders. Study data were analyzed manually using the conventional content analysis technique.

Results: A total of 27 in-depth interviews were conducted, between May and June 2020. Six overarching themes were identified: (I) Community knowledge and perceptions around Covid-19; (II) Trusted and preferred sources of health information; (III) Initial thoughts and feeling towards Covid-19 pandemic; (IV) Community practices to prevent exposure from Covid-19; (V) Perceived risks associated with poor adherence to infection control practices; and, (VI) Future preparedness of community to avoid the second wave of the outbreak. Generally, community members had good knowledge about Covid-19, and positive behavior and attitude towards using standard precautions. The knowledge is mainly acquired through electronic, print and social media platforms, which has pros and cons. However, some community members including younger individuals had poor adherence to safety measures. This may necessitate concentrated efforts to raise awareness through community mobilization and sensitization activities.

Conclusion: This study provides an initial evidence base of communities' perceptions, and attitudes towards Covid-19 in an early stage of pandemic. The study emphasizes that sufficient knowledge and awareness about Covid-19, adequate training and drills, and adherence to safety measures, are necessary to better prepare for the second wave of Covid-19.

Keywords: Covid-19, community perceptions, public health, exploratory qualitative study, Pakistan

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2
3 64 **Strengths and limitations of this study**
4 65

- 5 66 • This study provides an initial evidence base of communities' perceptions, and attitudes towards
6 67 Covid-19 in an early stage of the pandemic when the communities just start to learn about the
7 68 Covid-19 virus.
8 69 • The use of conventional content analysis helped understand in-depth views of communities'
9 70 perspectives and attitudes towards the Covid-19 pandemic
10 71
11 72 • The study invited participants from two communities of Karachi; therefore, our data might have
12 73 missed views, from other major ethnic and cultural groups.
13 74
14 75 • One limitation is that to minimise the risk of infection all study respondents were interviewed online
15 76 over Zoom and hence the authors did not have the opportunity to build rapport with the respondents
16 77 or obtain non-verbal cues during interviews.
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78 **Background**

79 By July 7, 2020, the failure to control the Covid-19 outbreak had resulted in 11,772,101 Covid-19 cases
80 and 541,513 deaths worldwide.¹ As of July 7, 2020, Pakistan has recorded more than 234,509 Covid-
81 19 cases with 4,839 deaths.² On February 26, 2020, the first case of Covid-19 was reported from
82 Karachi.³ The cases are increasing exponentially since the lockdown was lifted in late May, 2020.⁴ The
83 Government of Pakistan is facing difficulty to contain the surge of Covid-19 due to the country's social,
84 political, economic, and cultural context. The increased resistance by communities and local and
85 religious leaders have made it even more challenging to slow down the spread of Covid-19.⁵

86
87 There have been many generalized and subjective explanations of community interactions with Covid-
88 19 and its control activities. In Pakistan, the initial response of the communities to the rising threat of
89 Covid-19 was that of a generally reported apathy and indifference.⁶ Despite several public health
90 messages by Health Ministry⁷, communities are not adhering to the infection control precautions which
91 are regularly reinforced through mainstream media. The non-cooperative attitude displayed by the
92 public has further fueled the rapid transmission of the disease across the country.⁸ Community practices,
93 and attitudes towards Covid-19 have been described as barriers to an effective response.⁹ Experiences
94 from the previous epidemic suggest that community perceptions, social norms, and cultural practices
95 can impede containment of Covid-19.¹⁰ The fight against Ebola in Africa was subjected to similar
96 challenges.¹¹

97
98 A large body of evidence supports the value of qualitative methods in epidemic and pandemic research.
99 Leading global health agencies like the World Health Organization (WHO) and the Centers for Disease
100 Control and Prevention (CDC) recommend using qualitative methods in epidemiologic investigations
101 to capture social responses to the pandemic.¹² So far various quantitative studies have been conducted
102 on Covid-19 to study the epidemiology of the disease. However, these studies are not well suited to
103 capture the social implications of disease including the reasons for individuals' behavior, the social
104 connections, or the ways families make sense of what is happening around them. Qualitative lessons
105 from recent epidemics like SARS, H1N1, and EVD¹⁰ highlight how to engage with the social, cultural,
106 and political facets of the epidemic to build effective interventions.¹²

107
108 To understand social responses towards Covid-19, it is important to explore the understanding of Covid-
109 19 and acceptance of control measures among the community. Given the significance of qualitative
110 inquiry, the current situation in Karachi, Pakistan demands an exploration of community perceptions,
111 attitudes, practices regarding the Covid-19 pandemic. The open-ended nature of the study will help
112 focus on how individuals and communities perceive Covid-19 disease.

113 **Methods**

114 *Study design and setting*

115
116 This study utilized an exploratory qualitative research design using purposive sampling approach. The
117 study was conducted in two communities of Karachi city. These include Karimabad Federal B Area
118 Block 3 Gulberg Town, and Garden East and Garden West area of Karachi city.

119
120
121 Karimabad is a neighborhood in the Karachi Central district of Karachi, Pakistan. It is situated in the
122 south of Gulberg Town bordering Liaquatabad, Gharibabad, and Federal B. Area. The population of
123 this neighborhood is predominantly Ismailis. People living here belong mostly to the middle class to
124 the lower middle class. It is also known for its wholesale market for sports goods and stationery.

125
126 Garden is an upmarket neighborhood, which is in the Karachi South district of Karachi, Pakistan. It is
127 subdivided into two neighborhoods: Garden East and Garden West. It is the residential area around
128 the Karachi Zoological Gardens, hence it is popularly known as the 'Garden' area. The population of
129 Garden used to be primarily Ismaili and Goan Catholic but has seen increasing numbers
130 of Memons, Pashtuns, and Baloch. These areas have been selected purposively to interview members
131 of these communities.

133 **Data collection methods and study participants**

134 The data collection methods included in-depth interviews (IDIs) with community members. The IDIs
 135 aimed to explore community perceptions, attitudes, practices regarding the Covid-19 pandemic in
 136 Karachi, Pakistan. Adult community members of different ages and both genders who have not
 137 contracted the disease were purposively recruited from both sites, as mentioned in the below table 1.

138
 139 Table 1 Study participants for IDIs

In-depth interview Participants	Total IDIs= 27	Male=12; Female=14
Young adults (18 -35 years)	12	Male=6; Female=6
Middle-aged adults (36-55 years)	8	Male=4; Female=4
Older adults (> 55 years)	7	Male=3; Female=4

140
 141 Since this study aimed to explore general community perceptions, attitudes, practices regarding the
 142 Covid-19 pandemic, participants were excluded if they have been tested positive for Covid-19 or have
 143 been isolated/quarantined because of recent exposure. Because Covid-19 survivors and their family
 144 members might have different perceptions compared to the general community.

145 **Data collection procedure**

146 A semi-structured interview guide was developed by ASF and NAA for conducting IDIs (Additional
 147 File 1). The interview guide included questions on socio-demographic characteristics, community
 148 knowledge, perceptions, and attitudes towards Covid-19, community practices to prevent exposure from
 149 Covid-19, perceived risks associated with poor adherence to safety measures, and perceptions on future
 150 preparedness for the second wave of Covid-19. The interview guides were pilot tested with a non-study
 151 sample (2 IDIs) with the same characteristics as the study sample. The pilot testing offered evidenced-
 152 base guidance to improve data collection guides.

153
 154
 155 The IDI participants were identified and contacted via the community WhatsApp group and email.
 156 Interviews were scheduled for participants' convenient day and time. Before beginning the interview,
 157 the study investigators explained the study objectives and procedures to eligible community members
 158 and obtained informed consent for their participation in the study. Informed consent was also obtained
 159 on either email or WhatsApp, for notetaking and audio recording of the interviews. Participants who
 160 were unable to write their names were asked to provide a thumbprint on the consent form to symbolize
 161 their consent to participate. Trained researchers, experienced in qualitative research, conducted online
 162 interviews via Zoom or Skype. At the start of the interview, each participant was asked to provide socio-
 163 demographic details including age, gender, educational level, and occupation. The interviews were
 164 conducted in the languages of English and/or Urdu. Each interview took around 30 to 40 minutes in
 165 duration. Study participants were assured that their information will remain confidential and no
 166 identifying features will be mentioned on the transcript.

167
 168 Data collection was ceased once saturation was achieved. The sample size was not predetermined, and
 169 an iterative approach of simultaneous data collection and analysis was taken to determine the point of
 170 data saturation. Data saturation refers to the point in the research process when no new information is
 171 discovered in data analysis and this redundancy signals to researchers that data collection may cease.¹³

172 **Ethical considerations**

173
 174 Ethical approval for this study was obtained from the Aga Khan University Ethical Review Committee
 175 (AKU-ERC) [2020-4825-10599].

176 **Data analysis**

177
 178 Study data were analyzed manually using the conventional content analysis technique.¹⁴ Firstly, the
 179 audio recordings from the interviews were transcribed and then translated into the English language.
 180 No identifying characteristics were included in the transcriptions. Transcripts were read several times
 181 by research investigators to develop an interpretation of the community perceptions, attitudes, practices
 182 regarding the Covid-19 pandemic. This involved an iterative process where data were coded, compared,

183 contrasted, and refined to generate emergent themes. The transcribed text was divided into ‘meaning
184 units’ which was later shortened and labeled with a ‘code’ without losing the study context. Codes were
185 then analyzed and grouped into similar categories. In the final step, similar categories were assembled
186 under sub-themes and main themes.

187

188 **Patient and Public Involvement:**

189 Patient public involvement is a relatively new concept in Pakistan. Our data collection tool was piloted
190 through two IDIs to ensure that it is inclusive and comprehensive. We will also engage them in
191 disseminating findings of this study, particularly their contribution while developing research briefs in
192 plain language and communicating them to community members will be very valuable.

193

194 **Results**

195 In this qualitative study, 27 IDIs were conducted, between May and June 2020, with a variety of
196 community members including, young adults, middle-aged adults, and older adults of both genders.
197 The characteristics of study participants are presented in Table 2. Based on the data collection and
198 thematic analysis, six overarching themes were identified (I) Community knowledge and perceptions
199 around Covid-19; (II) Trusted and preferred sources of health information; (III) Initial thoughts and
200 feeling towards Covid-19 pandemic; (IV) Community practices to prevent exposure from Covid-19;
201 (V) Perceived risks associated with poor adherence to infection control practices; and, (VI) Future
202 preparedness of community to avoid the second wave of outbreak. The themes are presented below with
203 illustrative quotes.

204

205 Table 2: Characteristics of IDI Study Participants (IDIs=27)

Characteristics of IDI participants		N (%) or mean \pm SD	Median (range)
Gender	Female	14 (51.9%)	
	Male	13 (48.1%)	
Age		39.62 \pm 13.94	36 (21-64)
Educational Level	Intermediate	5 (18.5%)	
	Bachelors	13 (48.1%)	
	Masters	9 (33.3%)	
Occupation	Homemaker	6 (22.2%)	
	Students	2 (7.4%)	
	Working professionals	19 (70.4%)	

206

207 **Themes**

208

209 1. Community knowledge and perceptions around Covid-19

210 Mixed responses received for the question on community members' knowledge on Covid-19.
211 Community members shared that initially they had no knowledge about Covid-19 but with time they
212 were able to acquire fairly good knowledge about this virus in general and its signs and symptoms, since
213 it was first identified in Wuhan, China. Highlighting this point, one respondent stated:

214

215 *“I did not know much about it earlier but whatever right information is served on social media I am
216 aware of it. I know things like what it is? how it is spreading out? and how to take care of my family?
217 Though I am not getting much into the scientific part of it.” (IDI-02, Female)*

218

219 Participants stated that they are updating their knowledge continuously through certificate courses,
220 journal publications, news, social media, etc.

221

222 *“I believe I have fairly good knowledge of this virus as I have recently completed two online certificates
223 on the Covid-19 pandemic.” (IDI-17, Male)*

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2
3 224
4 225 A few community members verbalized that initially, they were so curious to know about Covid-19 but
5 226 now they have been avoiding reading about it because it causes a lot of anxiety and stress. Commenting
6 227 on the negative consequences of too much information, one female community member stated:
7 228 *"I am not curious to know more about this virus because the deluge of information can make me feel*
8 229 *overwhelmed and cause anxiety and depression disorder. I am only following basic prevention tips to*
9 230 *prevent my exposure to Covid-19."* (IDI 11, Female.)
10 231

11 232 2. Trusted and preferred sources of health information

12 233 When asked about their understanding on trusted sources of information, participants listed several
13 234 trusted sources including, news channels, information from government authorities, webinar sessions
14 235 by different hospitals, information from community-based groups, world health organization (WHO)
15 236 website, updates from relatives and friends working in the medical field, electronic media, research
16 237 journals, etc.

17 238
18 239 *"I think that there are many sources that provide reliable information about Covid-19. These include*
19 240 *print media, social media, news channels (BBC/CNN), government authorities, webinar sessions by*
20 241 *aga khan university hospital (AKUH), etc."* (IDI-06, Female.)
21 242

22 243 However, a few community members raised concerns about the authenticity of the information available
23 244 at electronic and social media such as Facebook, WhatsApp, etc. This point was illustrated by a
24 245 respondent who stated:

25 246
26 247 *"We are not relying much on the news channels because we think that the media does not present a*
27 248 *true picture of the current situation. Sometimes, the news channels exaggerate the news so much and*
28 249 *create negativity in our minds".* (IDI-04, Female)
29 250

30 251 Some community members mentioned that they prefer to gain information from close friends and
31 252 relatives who are working in hospitals and are directly involved in the care of Covid-19 patients. Others
32 253 mentioned that their preferred information sources include social media (WhatsApp groups, Instagram),
33 254 news channels, mainstream media, guidelines from community-based institutions and religious
34 255 institutions, AKUH sessions, and self- study research through WHO and CDC websites, etc.
35 256

36 257 *"I have an advantage because I have a person in my family who is from the medical field so I can get*
37 258 *updated knowledge all times. Also, from the very beginning, I am following the WHO page, AKUH*
38 259 *webinars, and news channels like BBC and CNN. I rarely refer to the local site because I think the*
39 260 *information there is also not reliable."* (IDI-07, Female)
40 261

41 262 Expressing similar concerns, a female community member stated:

42 263 *"I would rather prefer to rely on information circulated by religious intuitions because that provides*
43 264 *authentic, concise, and relevant evidence on Covid-19".* (IDI-06, Female, 56 yrs.)
44 265

45 266 3. Initial thoughts and feeling towards Covid-19 pandemic

46 267 The research participants described initial thoughts and feeling towards the Covid-19 pandemic. Most
47 268 community members perceived a sense of shock and chaos in the initial days because all were quickly
48 269 shutdown from schools, public places, markets to religious places. Further participants expressed the
49 270 feeling of confusion, depression, and anxiety.
50 271

51 272 *"To be very honest, I was very petrified with this idea especially looking at the situation in china. I was*
52 273 *also supposed to travel but I canceled the tickets because I did not want to be stuck in another country.*
53 274 *I was very much taking it into my head. Until now, I would not say I have become completely indifferent,*
54 275 *but I am a little relaxed than before."* (IDI-07, Female)
55 276

277 On the other hand, few participants mentioned that the initial days were fun as many of them got the
278 opportunity to unwind themselves from busy routines, but after a couple of days, the change felt drastic,
279 shocking, and difficult to contain.

280
281 *“Initially, it felt like any other disease outbreak like influenza, malaria, HIV ... honestly, I felt a sense
282 of relief ... we were discussing in our family that it’s good that we are getting enough time for fun and
283 relaxation. But when the strict lockdown was announced, it was hard to face the reality of the Covid-
284 19 pandemic.” (IDI-05, Female.)*

285
286 A few community members indicated that they were initially confused about the overall situation and
287 was trying to figure out whether Covid-19 is a hype or a real danger. The participants verbalized that it
288 took some time to internalize the new normal as it filtered down to them.

289
290 *“Initially I felt like this is all fake and exaggerated. I told my son that people have created hype on it.
291 But when religious institutions got closed for ensuring social distancing ... then I realized that this is
292 something really dangerous.” (IDI-22, Female)*

293 294 4. Community practices to prevent exposure from Covid-19

295
296 Several preventive strategies mentioned by community members to prevent exposure to Covid-19.
297 These include social distancing, staying at home, hand washing, use of alcohol-based hand rubs, steam
298 inhalation, and frequent use of the antiseptic spray for disinfection purposes. Many community
299 members mentioned that they make Dettol spray for disinfecting utensils, door handles, and other
300 miscellaneous items that are purchased from markets on a routine basis. Also, participants verbalized
301 that they wear masks and gloves if the plan to go outside for groceries or any other necessary task. On
302 return, they wash their hands, take shower, and disinfect all their stuff to prevent exposure to infection.

303
304 *We are wearing masks and sanitizing all the time when we go out of the home. I usually avoid going
305 out, but when I go, I plan my day in a way that I get done with most of the tasks. Just today, I went out
306 for one hour to draw cash from the bank, and purchase groceries. (IDI-09, Male.)*

307
308 A few community members stated that they have allocated separate rooms and utensils for family
309 members who are working in a hospital setting.

310
311 *“My sister is a doctor... we used to share a room before but now in the time of Covid-19 we have
312 allocated separate room to her. When she gets back from the hospital, we disinfect her first using Dettol
313 spray, and then she takes a shower. She wears a mask all the time when she is at home.” (IDI-07,
314 Female)*

315 316 317 5. Perceived risks associated with poor adherence to infection control practices

318 Most respondents reported that there will be an increase in the number of Covid-19 cases as a result of
319 poor adherence to infection control practices. In particular, community members notified that the
320 younger generation may inflict damage in the community due to their poor adherence to precautionary
321 measures.

322
323 *If I stand in my balcony, I see that there are a lot of people socializing in the colony and are not wearing
324 a mask. The young generation is standing in groups and is interacting ... not maintaining social
325 distancing. They are going back to their homes and risking the lives of elders and children in their
326 family. (IDI-09, Male)*

327
328 Besides, participants highlighted that during Eid festive, individuals were observed not to follow
329 standard precautions which may result in huge losses. A few participants stated that each member of
330 the community should ensure their social responsibility by wearing a mask, maintaining social
331 distancing, and following other standard operating measures (SOPs) set by community leaders.

1
2
3 332 *As Eid is coming, people are visiting markets for purchasing stuff as if nothing has changed. There is*
4 333 *so much traffic in the shopping area... no SOPs are being followed. People are not playing their part*
5 334 *when it comes to social responsibility. I presume that there will be so much damage to the communities*
6 335 *...if people would not follow safety precautions. (IDI-03, Female)*
7 336

8 337 6. Future preparedness of community to avoid the second wave of the outbreak
9 338 When asked about community preparedness to prevent the second wave of outbreak, several
10 339 participants suggested that drills and training should be organized for communities to ensure better
11 340 preparedness.
12 341

13 342 *I believe that as soon as this situation resolves... the community should focus on drills and training for*
14 343 *the second wave of Covid-19 or any other outbreak in the future. The drills and training can include*
15 344 *things like what mode of communication should the community prefer when staying at home? What*
16 345 *sources to rely on? etc. The drills should be performed on a routine basis as we do for earthquakes and*
17 346 *other natural disasters. (IDI-20, Male)*
18 347

19 348 Also, members of the community recommended that the role of community nursing, basic health units,
20 349 and community health centers should be recognized to adequately respond to the second wave of Covid-
21 350 19. Alongside this, community members suggested that the government should ensure strict compliance
22 351 to SOPs through regulatory reforms. Finally, members recommended that the community should do
23 352 fundraising activity to ensure fund allocation for underserved individuals.
24 353

25 354 *“There is a great role of community sciences because awareness about prevention can be created from*
26 355 *that ground ... also fund-raising activities should be encouraged in communities to help poor people*
27 356 *during the second wave of Covid-19.” (IDI-15, Female)*
28 357
29 358

30 359 **Discussion**

31 360
32 361 To the best of our knowledge, this is the first study to explore community perceptions, attitudes,
33 362 practices regarding the Covid-19 pandemic in Karachi, Pakistan. The study investigated initial thoughts
34 363 and feelings of the community towards Covid-19, community knowledge around Covid-19, trusted
35 364 sources of information and preferred communication channels, current community practices to prevent
36 365 exposure, perceived risks associated with poor adherence to safety measures, and future preparedness
37 366 of community to avoid second Covid-19 wave.
38 367

39 368 In general, study participants in our research had a fairly good level of knowledge about Covid-19, its
40 369 spread, and prevention techniques. Our study participants acquired knowledge about disease via several
41 370 sources including, certificate courses, journal publications, news, and social media. These findings are
42 371 generally consistent with the results of the study conducted on Egyptian adults, in which participants
43 372 gained a good general knowledge of the disease, its methods of spread, and prevention via several novel
44 373 channels including, social media platforms.¹⁵ Concurrently, a few members of the community showed
45 374 reluctance to obtain new knowledge as it tends to generate anxiety and stress among them. The
46 375 reluctance among community members was also apparent in a study conducted with the Indian
47 376 population, where nearly half the participants felt panic after reading reports of Covid-19 pandemic on
48 377 the electronic and print media over the past week.¹⁶
49 378

50 379 When we asked participants about trusted and preferred sources of information to learn about Covid-
51 380 19, participants listed several trusted sources including electronic media, print media, mainstream
52 381 media, social media, etc. Another interesting and unique finding is that participants preferred receiving
53 382 information from religious institutions and relatives and friends working in hospital facilities.
54 383 Participants also indicated that although these sources provide a simple and accessible way of being
55 384 informed, they can also be a cause of misinformation. Abdelhafiz et al. study reported one such example
56 385 of misinformation, where Facebook disseminated fake news about the drug, hydroxychloroquine, and
57 386 its potential to treat Covid-19 patients. This fake information encouraged a lot of individuals to keep

387 stock of this drug, leading to a shortage of this medicine.¹⁵ Thus, these sources of information should
388 be used with caution, to avoid the spread of fabricated data, rumors and unauthentic information.¹⁵

389

390 In our study, most participants perceived a sense of shock and chaos in the initial days of the pandemic
391 because of the lockdown and closure of all routine activities. Participants expressed a feeling of
392 confusion, depression, and anxiety as a result of unexpected turmoil. Similar thoughts and emotions
393 have been reported by many others in Covid-19 studies conducted in China, where participants
394 perceived Covid-19 as life-threatening danger.^{17,18} Alternatively, few participants enjoyed the initial
395 lockdown days as it provided them an opportunity to reset their lives. Interestingly, a few community
396 members believed that media has created artificial hype or hysteria around the new virus for some
397 potential gain. This finding is interesting as it reflects the growing awareness of the community
398 regarding Covid-19 and highlights the cons of using social media platforms as a trusted source of
399 information. The outbreak of Swine flu also linked the virus with media hype.¹⁹ The Covid-19
400 pandemic has already seen a rise in conspiracy theories, fake news, and misinformation. Therefore, it
401 is hard for communities to distinguish scientific evidence and facts from less reliable sources of
402 information.²⁰ The Nature Medicine article clarified that the virus is not purposefully manipulated or
403 created in laboratories.²¹ Our study found that participants needed adequate time to internalize the new
404 normal as it filtered down to them. Thus, a systemic resilience approach is essential to deal with a sense
405 of shock and drastic change associated with Covid-19 pandemic.¹²

406

407 Our results undoubtedly show that participants have a positive general attitude towards safety measures
408 to prevent the transmission of the Covid-19 virus. Participants believed in the value of maintaining
409 social distancing, staying at home, cleaning hand with soap water or alcohol-based sanitizer, wearing a
410 facemask, and using Dettol disinfectant spray. It has also been seen in another Covid-19 study that
411 community members are adhering to safety precautions to avoid virus transmission. This indicates
412 positive behavior and attitude of the community towards Covid-19, as a result of better community
413 sensitization.¹⁶ A unique yet encouraging finding reported by our study was that the community
414 members allocated separate rooms and utensils for family members who are working in a hospital
415 setting. This indicates that most participants in our study had adequate awareness of safety measures
416 for preventing exposure to Covid-19.

417

418 Commenting on the perceived risk associated with the Covid-19 outbreak, the majority of the
419 participants in this study expressed a high level of susceptibility in contracting Covid-19 as a result of
420 poor adherence to safety measures by some community members. Our study participants notified that
421 the younger generation may inflict damage in the community as safety precautions are not being
422 followed. This finding indicates that community mobilization and sensitization activities are still weak
423 and require concentrated efforts to raise awareness and resolve misconceptions that are associated with
424 an increase in Covid-19 cases. In such circumstances, it is recommended that community leadership
425 should set rules and regulations to help individuals avoid behaviors that are no longer considered
426 socially responsible.²⁰

427

428 Finally, community members recommended ongoing training and drills to prevent the second wave of
429 the Covid-19 outbreak. A viewpoint by Dzigbede et al reported that local governments should
430 implement disaster training exercises to prepare for the second wave of Covid-19.²² Such training have
431 a potential to strengthen local response and recovery from the Covid-19 Pandemic.²² One encouraging
432 finding of the study was that the members of community recognized that the role of community nursing,
433 and community health centers to prepare for the second wave of Covid-19. This has also been
434 emphasized by Bavel et al in a perspective paper. Since the Covid-19 crisis requires large-scale behavior
435 change, the role of community health sciences and social and behavioral sciences is of utmost value to
436 help align human behaviors with the recommendations of epidemiologists and public health experts.²⁰

437

438 This study provides an initial evidence base of communities' perceptions, and attitudes towards Covid-
439 19 in an early stage of the pandemic when the communities just start to learn about the Covid-19 virus.
440 One of the limitations of this study was that all study respondents were interviewed online, to minimize
441 the risk of infection. In online interviews, the authors did not have the opportunity to build rapport with

community members over Zoom or obtain non-verbal cues during interviews. Secondly, due to the nature of outbreak prevention, the study was unable to conduct focus group discussions with community members, which would have provided detailed information about personal and group feelings. Besides, the timings of interviews (May-June 2020) is also one of the limitations of this study as the results would have yielded a different picture if participants would have been interviewed in Feb and March 2020, when the pandemic just occurred in Pakistan. Lastly, this was a short-term study and does not involve long-term perceptions of the community members with this pandemic.

The findings from this study will help tailor existing public health interventions to address the social and behavioral problems related to this pandemic. Future research should be directed at developing and implementing contextual interventions to improve community understanding and social responses towards Covid-19.

Conclusion

This study provides an in-depth view of communities' perspectives and attitudes towards the Covid-19 pandemic. Generally, community members had good knowledge about Covid-19, and positive behavior and attitude towards using standard precautions, which is important to prevent exposure to Covid-19. The knowledge is mainly acquired through electronic media, print media, and social media platforms, which has pros and cons. However, some community members including younger individuals had poor adherence to safety measures. This may necessitate concentrated efforts to raise awareness and resolve misconceptions through community mobilization and sensitization activities. The study emphasizes that sufficient knowledge and awareness about Covid-19, adequate training and drills, and adherence to safety measures, are necessary to better prepare for the second wave of Covid-19. Lessons learned from this study are extremely valuable and can be transferable to community settings in Pakistan that have similar socio-demographic characteristics. However, findings cannot be extrapolated to other countries because of the differences in participant demographics and health system constraints.

1
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3 469 List of Abbreviations
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5 470 World Health Organization (WHO); Centers for Disease Control and Prevention (CDC); Severe
6 471 Acute Respiratory Syndrome (SARS); Ebola Virus Disease (EVD); In-depth interviews (IDIs); Aga
7 472 Khan University Ethical Review Committee (AKU-ERC); British Broadcasting Corporation (BBC);
8 473 Cable News Network (CNN); Aga Khan University hospital (AKUH); Human Immunodeficiency
9 474 Viruses (HIV)

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11 475
12 476 Declarations
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14 477
15 478 Ethics approval and consent to participate

16 479 Ethical approval for this study was obtained from the Aga Khan University Ethical Review Committee
17 480 (AKU-ERC) – [2020-4825-10599]. Written informed consent was provided by all study participants.
18 481 Informed consent included permission to audio record the interviews and use anonymized quotes.
19 482 Voluntary participation and the right to ask any questions and to decline participation at any time were
20 483 emphasized during the data collection.

21 484
22 485 Consent for publication

23 486 Written informed consent for publication was obtained.

24 487
25 488 Data sharing statement

26 489 The datasets used and/or analysed during the current study are available from the corresponding author
27 490 on reasonable request.

28 491
29 492 Competing interests

30 493 We declare no competing interests.

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32 495 Funding

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35 498 Contributorship statement

36 499 ASF, & NAA designed the study. ASF, NAA, NBA, RF, and SNM collected the data. ASF, & NAA
37 500 analyzed and interpreted the data. ASF wrote the first draft of the manuscript. All authors contributed
38 501 to reviewing and editing the manuscript.

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523 [epiwin](https://www.epiwin.com/sites/epiwin/files/content/attachments/2020-02-24/COVID19%20Stigma%20Guide%2024022020_1.pdf)
524 [com/sites/epiwin/files/content/attachments/2020-02-24/COVID19% 20Stigma% 20Guide% 2024022020_1 pdf](https://www.epiwin.com/sites/epiwin/files/content/attachments/2020-02-24/COVID19%20Stigma%20Guide%2024022020_1.pdf) adresinden erişilmiştir.
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563 Table 1 Study participants for IDIs

In-depth interview Participants	Total IDIs= 27	Male=12; Female=14
Young adults (18 -35 years)	12	Male=6; Female=6
Middle-aged adults (36-55 years)	8	Male=4; Female=4
Older adults (> 55 years)	7	Male=3; Female=4

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566 Table 2: Characteristics of IDI Study Participants (IDIs=27)

Characteristics of IDI participants		N (%) or mean \pm SD	Median (range)
Gender	Female	14 (51.9%)	
	Male	13 (48.1%)	
Age		39.62 \pm 13.94	36 (21-64)
Educational Level	Intermediate	5 (18.5%)	
	Bachelors	13 (48.1%)	
	Masters	9 (33.3%)	
Occupation	Homemaker	6 (22.2%)	
	Students	2 (7.4%)	
	Working professionals	19 (70.4%)	

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4 **Perceived risks associated with poor adherence to safety measures**
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7 1. Do you think novel coronavirus will inflict serious damage in your community, if
8 adequate safety measures are not taken?
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10 2. Do you think you can protect yourself against the novel coronavirus?
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13 **Future Preparedness**
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16 1. In your opinion, what are the needs for future preparedness for any outbreak that prepare
17 community (trainings, awareness, equipment, protective gears)
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Standards for Reporting Qualitative Research (SRQR)*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

Title and abstract

<p>Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</p>	<p>Pape no. 1/line no. 1-2</p>
<p>Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</p>	<p>Pape no. 2/line no. 32-58</p>

Introduction

<p>Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</p>	<p>Pape no. 4/line no. 124-127</p>
<p>Purpose or research question - Purpose of the study and specific objectives or questions</p>	<p>Pape no. 4/line no. 116-120</p>

Methods

<p>Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</p>	<p>Pape no. 4/line no. 125-127</p>
<p>Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability</p>	<p>Pape no. 6/line no. 206-210</p>
<p>Context - Setting/site and salient contextual factors; rationale**</p>	<p>Pape no. 4 & 5/line no. 129-142</p>
<p>Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</p>	<p>Pape no. 4/line no. 125</p>
<p>Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</p>	<p>Pape no. 6/line no. 191-193</p>
<p>Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</p>	<p>Pape no. 5-6/line no. 144-189</p>

1 2 3 4 5	Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	Pape no. 6 & 6/line no. 159-189
6 7 8	Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	Pape no. 6-7/line no. 224-225
9 10 11 12	Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	Pape no. 6/line no. 195-204
13 14 15 16	Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	Pape no. 6/line no. 195-204
17 18 19 20	Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	Pape no. 6/line no. 206-210

Results/findings

23 24 25 26	Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Pape no. 6-9/line no. 213-376
27 28 29 30	Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Pape no. 6-9/line no. 213-376

Discussion

33 34 35 36 37 38	Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Pape no. 9-11/line no. 381-487
39 40 41	Limitations - Trustworthiness and limitations of findings	Pape no. 11/line no. 463-479

Other

44 45 46	Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Pape no. 13/line no. 527-528
47 48 49	Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Pape no. 13/line no. 530-531

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014
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BMJ Open

Exploring community perceptions, attitudes, and practices regarding the Covid-19 pandemic in Karachi, Pakistan

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Primary Subject Heading:	Public health
Secondary Subject Heading:	Public health
Keywords:	COVID-19, Public health < INFECTIOUS DISEASES, PUBLIC HEALTH

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4 2 Karachi, Pakistan

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Abstract

Background: The Government of Pakistan is facing difficulty to contain the surge of COVID-19 due to the country's social, political, economic, and cultural context. Experiences from the previous epidemic suggest that community perceptions, social norms, and cultural practices can impede COVID-19 containment. To understand social responses towards COVID-19, the study aims to explore the understanding of COVID-19 and the acceptance of control measures among community members.

Methods: We conducted an exploratory qualitative study using a purposive sampling approach, at two communities of Karachi, Pakistan. In-depth interviews were conducted with community members including, young, middle-aged, and older adults of both genders. Study data were analyzed manually using the conventional content analysis technique.

Results: A total of 27 in-depth virtual interviews were conducted, between May and June 2020. Six overarching themes were identified: (I) Community knowledge and perceptions around COVID-19; (II) Trusted and preferred sources of health information; (III) Initial thoughts and feeling towards COVID-19 pandemic; (IV) Community practices to prevent exposure from COVID-19; (V) Perceived risks associated with poor adherence to infection control practices; and (VI) Future preparedness of community to avoid the second wave of the outbreak. Generally, community members had good knowledge about COVID-19, and positive behavior and attitude towards using standard precautions. The knowledge is mainly acquired through electronic, print, and social media platforms, which have pros and cons. However, some community members including younger individuals had poor adherence to safety measures. This may necessitate concentrated efforts to raise awareness through community mobilization and sensitization activities.

Conclusion: This study provides an initial evidence base of communities' perceptions, and attitudes towards COVID-19 in an early stage of pandemic. The study emphasizes that sufficient knowledge and awareness about COVID-19, adequate training and drills, and adherence to safety measures, are necessary to better prepare for the second wave of COVID-19.

Keywords: COVID-19, community perceptions, public health, exploratory qualitative study, Pakistan

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2
3 64 **Strengths and limitations of this study**
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- 5 66 • This study provides an initial evidence base of communities' perceptions, and attitudes towards
6 67 COVID-19 in an early stage of the pandemic when the communities just start to learn about the
7 68 COVID-19 virus.
8 69 • The use of conventional content analysis helped understand in-depth views of communities'
9 70 perspectives and attitudes towards the COVID-19 pandemic.
10 71
11 72 • The study invited participants from two communities of Karachi; therefore, our data might have
12 73 missed views, from other major ethnic and cultural groups.
13 74
14 75 • One limitation is that to minimize the risk of infection all study respondents were interviewed online
15 76 over Zoom and hence the authors did not have the opportunity to build rapport with the respondents
16 77 or obtain non-verbal cues during interviews.
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78 **Background**

79 By June 29, 2020, the failure to control the COVID-19 outbreak had resulted in 182,277,425 COVID-
80 19 cases and 3,947,643 deaths worldwide.¹ As of July 29, 2021, Pakistan has recorded more than
81 956,392 COVID-19 cases with 22,254 deaths.² On February 26, 2020, the first case of COVID-19 was
82 reported from Karachi.³ The cases increased exponentially since the lockdown was lifted in late May
83 and June, 2020.⁴ The uptick in cases was perhaps due to the Eid festival which happened in late May
84 2020. Many awareness campaigns were initiated for the general population by both local and federal
85 governments in Pakistan to spread awareness about the risks, signs, and symptoms of COVID-19. One
86 of the campaigns involved spreading awareness to the masses through text messages, which were sent
87 by the government of Pakistan on all mobile networks. In addition, recorded voice messages in various
88 local languages including Urdu, Pashto, and Sindhi, were used as caller tunes before every phone call
89 to warn against the risks of COVID-19, its spread, and complications to help control the Covid-19
90 spread⁵.

91
92 The Government of Pakistan has been facing difficulty to contain the surge of COVID-19 due to the
93 country's social, political, economic, and cultural context. The increased resistance by communities
94 and local and religious leaders has made it even more challenging to slow down the spread of COVID-
95 19.⁶ There have been many generalized and subjective explanations of community interactions with
96 COVID-19 and its control activities. In Pakistan, the initial response of the communities to the rising
97 threat of COVID-19 was that of a generally reported apathy and indifference.⁷ Despite several public
98 health messages by Health Ministry⁸, communities are not adhering to the infection control precautions
99 which are regularly reinforced through mainstream media. The non-cooperative attitude displayed by
100 the public has further fueled the rapid transmission of the disease across the country.⁹ Community
101 practices, and attitudes towards COVID-19 have been described as barriers to an effective response.¹⁰
102 Experiences from the previous epidemic suggest that community perceptions, social norms, and cultural
103 practices can impede the containment of COVID-19.¹¹ The fight against Ebola in Africa was subjected
104 to similar challenges.¹²

105
106 A large body of evidence supports the value of qualitative methods in epidemic and pandemic research.
107 Leading global health agencies like the World Health Organization (WHO) and the Centers for Disease
108 Control and Prevention (CDC) recommend using qualitative methods in epidemiologic investigations
109 to capture social responses to the pandemic.¹³ So far various quantitative studies have been conducted
110 on COVID-19 to study the epidemiology of the disease. However, these studies are not well suited to
111 capture the social implications of disease including the reasons for individuals' behavior, the social
112 connections, or the ways families make sense of what is happening around them. Qualitative lessons
113 from recent epidemics like SARS, H1N1, and EVD¹¹ highlight how to engage with the social, cultural,
114 and political facets of the epidemic to build effective interventions.¹³

115
116 To understand social responses towards COVID-19, it is important to explore the understanding of
117 COVID-19 and the acceptance of control measures among the community. Given the significance of
118 qualitative inquiry, the current situation in Karachi, Pakistan demands an exploration of community
119 perceptions, attitudes, practices regarding the COVID-19 pandemic. The open-ended nature of the study
120 will help focus on how individuals and communities perceive COVID-19 disease.

121 **Methods**

122 ***Study design and setting***

123
124 This study utilized an exploratory qualitative research design using a purposive sampling approach. The
125 study was conducted in two Muslim communities of Karachi city. These include Karimabad Federal B
126 Area Block 3 Gulberg Town, and Garden East and Garden West area of Karachi city.

127
128
129 Karimabad is a neighborhood in the Karachi Central district of Karachi, Pakistan. It is situated in the
130 south of Gulberg Town bordering Liaquatabad, Gharibabad, and Federal B. Area. The population of
131 this neighborhood is predominantly Ismailis. People living here belong mostly to the middle class to
132 the lower middle class. It is also known for its wholesale market for sports goods and stationery.

Garden is an upmarket neighborhood, which is in the Karachi South district of Karachi, Pakistan. It is subdivided into two neighborhoods: Garden East and Garden West. It is the residential area around the Karachi Zoological Gardens, hence it is popularly known as the 'Garden' area. The population of Garden used to be primarily Ismaili and Goan Catholic but has seen increasing numbers of Memons, Pashtuns, and Baloch. These areas have been selected purposively to interview members of these communities.

This design did not intend to look at the differences between the two neighborhoods with regard to perceptions and attitudes towards COVID-19 but rather to understand how community members in Karachi, Pakistan perceive COVID-19 disease and its precautionary measures.

Data collection methods and study participants

The data collection methods included in-depth interviews (IDIs) with community members. The IDIs aimed to explore community perceptions, attitudes, practices regarding the COVID-19 pandemic in Karachi, Pakistan. Adult community members of different ages and both genders who have not contracted the COVID-19 disease were purposively recruited from both sites, as mentioned in below table 1.

Table 1 Study participants for IDIs

In-depth interview Participants	Total IDIs= 27	Male=13; Female=14
Young adults (18 -35 years)	12	Male=6; Female=6
Middle-aged adults (36-55 years)	8	Male=4; Female=4
Older adults (> 55 years)	7	Male=3; Female=4

Since this study aimed to explore general community perceptions, attitudes, practices regarding the COVID-19 pandemic, participants were excluded if they or their family members have been tested positive for COVID-19 or have been isolated/quarantined because of recent exposure. Because COVID-19 survivors and their family members might have different perceptions compared to the general community.

Data collection procedure

A semi-structured interview guide was developed for conducting IDIs (Additional File 1). The interview guide included questions on socio-demographic characteristics, community knowledge, perceptions, and attitudes towards COVID-19, community practices to prevent exposure from COVID-19, perceived risks associated with poor adherence to safety measures, and perceptions on future preparedness for the second wave of COVID-19. The interview guides were pilot tested with a non-study sample (2 IDIs) with the same characteristics as the study sample. The pilot testing offered evidence-based guidance to improve data collection guides.

The IDI participants were identified and contacted via the pre-existing community WhatsApp and email groups. The researchers obtained access to these groups through community leaders of both neighborhoods. The community leaders, gatekeepers in this study, supported the identification of a purposive sample through both communities. A total of 35 eligible individuals were contacted through these groups, out of which 27 agreed to participate in the study. Interviews were scheduled for participants' convenient day and time. Before beginning the interview, the study investigators explained the study objectives and procedures to eligible community members and obtained informed consent for their participation in the study. Informed consent was also obtained on either email or WhatsApp, for notetaking and audio recording of the interviews. Participants who were unable to write their names were asked to provide a thumbprint on the consent form to symbolize their consent to participate. Trained researchers, experienced in qualitative research, conducted online interviews via Zoom or Skype. At the start of the interview, each participant was asked to provide socio-demographic details including age, gender, educational level, and occupation. The interviews were conducted in the languages of English and/or Urdu. Each interview took around 30 to 40 minutes in duration. Study

182 participants were assured that their information will remain confidential, and no identifying features
183 will be mentioned on the transcript.

184 Data collection was ceased once saturation was achieved; saturation refers to the point in the research
185 process when no new information is discovered in data analysis¹⁴. The sample size was not
186 predetermined, and an iterative approach of simultaneous data collection and analysis was taken to
187 determine the point of data saturation. Data saturation refers to the point in the research process when
188 no new information is discovered in data analysis and this redundancy signals to researchers that data
189 collection may cease.¹⁵

191 ***Ethical considerations***

192 Ethical approval for this study was obtained from the Aga Khan University Ethical Review Committee
193 (AKU-ERC) [2020-4825-10599].

195 ***Data analysis***

196 Study data were analyzed manually using the conventional content analysis technique.¹⁶ Firstly, the
197 audio recordings from the interviews were transcribed and then translated into the English language.
198 No identifying characteristics were included in the transcriptions. Transcripts were read several times
199 by research investigators to develop an interpretation of the community perceptions, attitudes, practices
200 regarding the COVID-19 pandemic. This involved an iterative process where data were coded,
201 compared, contrasted, and refined to generate emergent themes by two independent investigators. The
202 transcribed text was divided into 'meaning units' which were later shortened and labeled with a 'code'
203 without losing the study context. Codes were then analyzed and grouped into similar categories. In the
204 final step, similar categories were assembled under sub-themes and main themes.

206 ***Patient and Public Involvement:***

207 Patient public involvement is a relatively new concept in Pakistan. Our data collection tool was piloted
208 through two IDIs to ensure that it is inclusive and comprehensive. We will also engage them in
209 disseminating the findings of this study, particularly their contribution while developing research briefs
210 in plain language and communicating them to community members will be very valuable.

212 **Results**

213 In this qualitative study, 27 IDIs were conducted, between May and June 2020, with a variety of
214 community members including, young adults, middle-aged adults, and older adults of both genders.
215 The characteristics of study participants are presented in Table 2. None of the study participants
216 belonged to the same family. All study participants were Muslim belonged to low-middle class families.
217 Based on the data collection and conventional content analysis, six overarching themes were identified
218 (I) Community knowledge and perceptions around COVID-19; (II) Trusted and preferred sources of
219 health information; (III) Initial thoughts and feeling towards COVID-19 pandemic; (IV) Community
220 practices to prevent exposure from COVID-19; (V) Perceived risks associated with poor adherence to
221 infection control practices; and (VI) Future preparedness of community to avoid the second wave of
222 outbreak. The themes are presented below with illustrative quotes.

224 Table 2: Characteristics of IDI Study Participants (IDIs=27)

Characteristics of IDI participants		N (%) or mean \pm SD	Median (range)
Gender	Female	14 (51.9%)	
	Male	13 (48.1%)	
Age		39.62 \pm 13.94	36 (21-64)
Educational Level	Intermediate	5 (18.5%)	
	Bachelors	13 (48.1%)	
	Masters	9 (33.3%)	
Occupation	Homemaker	6 (22.2%)	
	Students	2 (7.4%)	

	Working professionals	19 (70.4%)	
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225

226 **Themes**

227

228 1. Community knowledge and perceptions around COVID-19

229 Mixed responses were received for the question on community members' knowledge on COVID-19.

230 Community members shared that initially they had no knowledge about COVID-19 but with time they

231 were able to acquire fairly good knowledge about this virus in general and its signs and symptoms, since

232 it was first identified in Wuhan, China. Highlighting this point, one respondent stated:

233

234 *"I did not know much about it earlier but whatever right information is served on social media I am*235 *aware of it. I know things like what it is? how it is spreading out? and how to take care of my family?*236 *Though I am not getting much into the scientific part of it."* (IDI-02, Female)

237

238 Participants stated that they are updating their knowledge continuously through certificate courses,

239 journal publications, news, social media, etc.

240

241 *"I believe I have fairly good knowledge of this virus as I have recently completed two online certificates*242 *on the COVID-19 pandemic."* (IDI-17, Male)

243

244 A few community members verbalized that initially, they were so curious to know about COVID-19

245 but now they have been avoiding reading about it because it causes a lot of anxiety and stress.

246 Commenting on the negative consequences of too much information, one female community member

247 stated:

248 *"I am not curious to know more about this virus because the deluge of information can make me feel*249 *overwhelmed and cause anxiety and depression disorder. I am only following basic prevention tips to*250 *prevent my exposure to COVID-19."* (IDI-11, Female.)

251

252 2. Trusted and preferred sources of health information

253 When asked about their understanding of trusted sources of information, participants listed several

254 trusted sources including, news channels, information from government authorities, webinar sessions

255 by different hospitals, information from community-based groups, world health organization (WHO)

256 website, updates from relatives and friends working in the medical field, electronic media, research

257 journals, etc.

258

259 *"I think that there are many sources that provide reliable information about COVID-19. These include*260 *print media, social media, news channels (BBC/CNN), government authorities, webinar sessions by*261 *aga khan university hospital (AKUH), etc."* (IDI-06, Female.)

262

263 However, a few community members raised concerns about the authenticity of the information available

264 on electronic and social media such as Facebook, WhatsApp, etc. This point was illustrated by a

265 respondent who stated:

266

267 *"We are not relying much on the news channels because we think that the media does not present a*268 *true picture of the current situation. Sometimes, the news channels exaggerate the news so much and*269 *create negativity in our minds".* (IDI-04, Female)

270

271 Some community members mentioned that they prefer to gain information from close friends and

272 relatives who are working in hospitals and are directly involved in the care of COVID-19 patients.

273 Others mentioned that their preferred information sources include social media (WhatsApp groups,

274 Instagram), news channels, mainstream media, guidelines from community-based institutions and

275 religious institutions, AKUH sessions, and self-study research through WHO and CDC websites, etc.

276

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2
3 277 *"I have an advantage because I have a person in my family who is from the medical field so I can get*
4 278 *updated knowledge at all times. Also, from the very beginning, I am following the WHO page, AKUH*
5 279 *webinars, and news channels like BBC and CNN. I rarely refer to the local site because I think the*
6 280 *information there is also not reliable."* (IDI-07, Female)
7 281

8 282 Expressing similar concerns, a female community member stated:

9 283 *"I would rather prefer to rely on information circulated by religious institutions because that provides*
10 284 *authentic, concise, and relevant evidence on COVID-19"*. (IDI-06, Female)
11 285

12 286 3. Initial thoughts and feelings towards COVID-19 pandemic

13 287 The research participants described initial thoughts and feeling towards the COVID-19 pandemic. Most
14 288 community members perceived a sense of shock and chaos in the initial days because all were quickly
15 289 shut down from schools, public places, markets to religious places. Further participants expressed the
16 290 feeling of confusion, depression, and anxiety.
17 291

18 292 *"To be very honest, I was very petrified with this idea especially looking at the situation in china. I was*
19 293 *also supposed to travel but I canceled the tickets because I did not want to be stuck in another country.*
20 294 *I was very much taking it into my head. Until now, I would not say I have become completely indifferent,*
21 295 *but I am a little relaxed than before."* (IDI-07, Female)
22 296

23 297 On the other hand, few participants mentioned that the initial days were fun as many of them got the
24 298 opportunity to unwind themselves from busy routines, but after a couple of days, the change felt drastic,
25 299 shocking, and difficult to contain.
26 300

27 301 *"Initially, it felt like any other disease outbreak like influenza, malaria, HIV ... honestly, I felt a sense*
28 302 *of relief ... we were discussing in our family that it's good that we are getting enough time for fun and*
29 303 *relaxation. But when the strict lockdown was announced, it was hard to face the reality of the COVID-19*
30 304 *pandemic."* (IDI-05, Female)
31 305

32 306 A few community members indicated that they were initially confused about the overall situation and
33 307 were trying to figure out whether COVID-19 is a hype or a real danger. The participants verbalized that
34 308 it took some time to internalize the new normal as it filtered down to them.
35 309

36 310 *"Initially I felt like this is all fake and exaggerated. I told my son that people have created hype on it.*
37 311 *But when religious institutions got closed for ensuring social distancing ... then I realized that this is*
38 312 *something really dangerous."* (IDI-22, Female)
39 313

40 314 4. Community practices to prevent exposure from COVID-19

41 315
42 316 Several preventive strategies were mentioned by community members to prevent exposure to COVID-
43 317 19. These include social distancing, staying at home, hand washing, use of alcohol-based hand rubs,
44 318 steam inhalation, and frequent use of the antiseptic spray for disinfection purposes. Many community
45 319 members mentioned that they make Dettol spray for disinfecting utensils, door handles, and other
46 320 miscellaneous items that are purchased from markets on a routine basis. Also, participants verbalized
47 321 that they wear masks and gloves if they plan to go outside for groceries or any other necessary task. On
48 322 return, they wash their hands, take shower, and disinfect all their stuff to prevent exposure to infection.
49 323

50 324 *We are wearing masks and sanitizing all the time when we go out of the home. I usually avoid going*
51 325 *out, but when I go, I plan my day in a way that I get done with most of the tasks. Just today, I went out*
52 326 *for one hour to draw cash from the bank, and purchase groceries.* (IDI-09, Male)
53 327

54 328 A few community members stated that they have allocated separate rooms and utensils for family
55 329 members who are working in a hospital setting.
56 330

331 “My sister is a doctor... we used to share a room before but now in the time of COVID-19 we have
 332 allocated a separate room to her. When she gets back from the hospital, we disinfect her first using
 333 Dettol spray, and then she takes a shower. She wears a mask all the time when she is at home.” (IDI-
 334 07, Female)

335
 336

337 5. Perceived risks associated with poor adherence to infection control practices

338 Most respondents reported that there will be an increase in the number of COVID-19 cases as a result
 339 of poor adherence to infection control practices. In particular, community members notified that the
 340 younger generation may inflict damage in the community due to their poor adherence to precautionary
 341 measures.

342

343 *If I stand in my balcony, I see that there are a lot of people socializing in the colony and are not wearing*
 344 *a mask. The young generation is standing in groups and is interacting ... not maintaining social*
 345 *distancing. They are going back to their homes and risking the lives of elders and children in their*
 346 *families. (IDI-09, Male)*

347

348 Besides, participants highlighted that during the Eid festival, individuals were observed not to follow
 349 standard precautions which may result in huge losses. A few participants stated that each member of
 350 the community should ensure their social responsibility by wearing a mask, maintaining social
 351 distancing, and following other standard operating measures (SOPs) set by community leaders.

352 *As Eid is coming, people are visiting markets for purchasing stuff as if nothing has changed. There is*
 353 *so much traffic in the shopping area... no SOPs are being followed. People are not playing their part*
 354 *when it comes to social responsibility. I presume that there will be so much damage to the communities*
 355 *...if people would not follow safety precautions. (IDI-03, Female)*

356

357 6. Future preparedness of community to avoid the second wave of the outbreak

358 When asked about community preparedness to prevent the second wave of outbreak, several
 359 participants suggested that drills and training should be organized for communities to ensure better
 360 preparedness.

361

362 *I believe that as soon as this situation resolves... the community should focus on drills and training for*
 363 *the second wave of COVID-19 or any other outbreak in the future. The drills and training can include*
 364 *things like what mode of communication should the community prefer when staying at home? What*
 365 *sources to rely on? etc. The drills should be performed on a routine basis as we do for earthquakes and*
 366 *other natural disasters. (IDI-20, Male)*

367

368 Also, members of the community recommended that the role of community nursing, basic health units,
 369 and community health centers should be recognized to adequately respond to the second wave of
 370 COVID-19. Alongside this, community members suggested that the government should ensure strict
 371 compliance to SOPs through regulatory reforms. Finally, members recommended that the community
 372 should do fundraising activities to ensure fund allocation for underserved individuals.

373

374 *“There is a great role of community sciences because awareness about prevention can be created from*
 375 *that ground ... also fund-raising activities should be encouraged in communities to help poor people*
 376 *during the second wave of COVID-19.” (IDI-15, Female)*

377

378

379 Discussion

380

381 To the best of our knowledge, this is the first study to explore community perceptions, attitudes,
 382 practices regarding the COVID-19 pandemic in Karachi, Pakistan. The study investigated initial
 383 thoughts and feelings of the community towards COVID-19, community knowledge around COVID-
 384 19, trusted sources of information and preferred communication channels, current community practices

385 to prevent exposure, perceived risks associated with poor adherence to safety measures, and future
386 preparedness of the community to avoid second COVID-19 wave.

387

388 In general, study participants in our research had a fairly good level of knowledge about COVID-19, its
389 spread, and prevention techniques. Our study participants acquired knowledge about disease via several
390 sources including, certificate courses, journal publications, news, and social media. These findings are
391 generally consistent with the results of the study conducted on Egyptian adults, in which participants
392 gained a good general knowledge of the disease, its methods of spread, and prevention via several novel
393 channels including, social media platforms.¹⁷ Concurrently, a few members of the community showed
394 reluctance to obtain new knowledge as it tends to generate anxiety and stress among them. The
395 reluctance among community members was also apparent in a study conducted with the Indian
396 population, where nearly half the participants felt panic after reading reports of the COVID-19
397 pandemic on the electronic and print media over the past week.¹⁸

398

399 When we asked participants about trusted and preferred sources of information to learn about COVID-
400 19, participants listed several trusted sources including electronic media, print media, mainstream
401 media, social media, etc. The preferred sources of information also indicated internet literacy in the
402 community members, to some extent. Another interesting and unique finding is that participants
403 preferred receiving information from religious institutions and relatives and friends working in hospital
404 facilities. Participants also indicated that although these sources provide a simple and accessible way
405 of being informed, they can also be a cause of misinformation. Abdelhafiz et al. study reported one such
406 example of misinformation, where Facebook disseminated fake news about the drug,
407 hydroxychloroquine, and its potential to treat COVID-19 patients. This fake information encouraged a
408 lot of individuals to keep stock of this drug, leading to a shortage of this medicine. 17 Thus, these
409 sources of information should be used with caution, to avoid the spread of fabricated data, rumors, and
410 unauthentic information.¹⁷ Future research is needed to study the impact of the misinformation that is
411 received from religious institutions, relatives, and friends working in hospital facilities.

412 In our study, most participants perceived a sense of shock and chaos in the initial days of the pandemic
413 because of the lockdown and closure of all routine activities. Participants expressed a feeling of
414 confusion, depression, and anxiety as a result of unexpected turmoil. Similar thoughts and emotions
415 have been reported by many others in COVID-19 studies conducted in China, where participants
416 perceived COVID-19 as a life-threatening danger.^{19,20} Alternatively, few participants enjoyed the initial
417 lockdown days as it provided them an opportunity to reset their lives. Interestingly, a few community
418 members believed that media has created artificial hype or hysteria around the new virus for some
419 potential gain. This finding is interesting as it reflects the growing awareness of the community
420 regarding COVID-19 and highlights the cons of using social media platforms as a trusted source of
421 information. The outbreak of the Swine flu also linked the virus with media hype.²¹ The COVID-19
422 pandemic has already seen a rise in conspiracy theories, fake news, and misinformation. Therefore, it
423 is hard for communities to distinguish scientific evidence and facts from less reliable sources of
424 information.²² The Nature Medicine article clarified that the virus is not purposefully manipulated or
425 created in laboratories.²³ Our study found that participants needed adequate time to internalize the new
426 normal as it filtered down to them. Thus, a systemic resilience approach is essential to deal with a sense
427 of shock and drastic change associated with the COVID-19 pandemic.²²

428

429 Our results undoubtedly show that participants have a positive general attitude towards safety measures
430 to prevent the transmission of the COVID-19 virus. Participants believed in the value of maintaining
431 social distancing, staying at home, cleaning hands with soap water or alcohol-based sanitizer, wearing
432 a facemask, and using Dettol disinfectant spray. It has also been seen in another COVID-19 study that
433 community members are adhering to safety precautions to avoid virus transmission. This indicates the
434 positive behavior and attitude of the community towards COVID-19, as a result of better community
435 sensitization.¹⁸ A unique yet encouraging finding reported by our study was that the community
436 members allocated separate rooms and utensils for family members who are working in a hospital

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3 437 setting. This indicates that most participants in our study had adequate awareness of safety measures
4 438 for preventing exposure to COVID-19.
5 439

6 440 Commenting on the perceived risk associated with the COVID-19 outbreak, the majority of the
7 441 participants in this study expressed a high level of susceptibility in contracting COVID-19 as a result
8 442 of poor adherence to safety measures by some community members. Our study participants notified
9 443 that the younger generation may inflict damage in the community as safety precautions are not being
10 444 followed. World Health Organization also confirms that the younger generation is driving COVID-19
11 445 spread because symptoms are often milder or none at all in the young people, and many are unaware
12 446 that they are infected and unknowingly passing on the virus to others²⁴. This finding indicates that
13 447 community mobilization and sensitization activities are still weak and require concentrated efforts to
14 448 raise awareness and resolve misconceptions that are associated with an increase in COVID-19 cases. In
15 449 such circumstances, it is recommended that community leadership should set rules and regulations to
16 450 help individuals avoid behaviors that are no longer considered socially responsible.²²
17 451

18 451
19 452 Finally, community members recommended ongoing training and drills to prevent the second wave of
20 453 the COVID-19 outbreak. A viewpoint by Dzigbede et al reported that local governments should
21 454 implement disaster training exercises to prepare for the second wave of COVID-19.²⁵ Such training
22 455 have the potential to strengthen local response and recovery from the COVID-19 Pandemic.²⁵ One
23 456 encouraging finding of the study was that the members of the community recognized that the role of
24 457 community nursing, and community health centers to prepare for the second wave of COVID-19. This
25 458 has also been emphasized by Bavel et al in a perspective paper. Since the COVID-19 crisis requires
26 459 large-scale behavior change, the role of community health sciences and social and behavioral sciences
27 460 is of utmost value to help align human behaviors with the recommendations of epidemiologists and
28 461 public health experts.²²
29 462

30 462
31 463 Since the study was conducted in the month of May and June 2020, it provides an initial evidence base
32 464 of communities' perceptions, and attitudes towards COVID-19 in an early stage of the pandemic when
33 465 the communities just start to learn about the COVID-19 virus. The study data collection period observed
34 466 an uptick in the daily new COVID-19 cases as well as total deaths perhaps due to the Eid festival²⁶. The
35 467 uptick in the cases might have influenced the community perceptions and attitudes towards COVID-19
36 468 and community members might have taken stringent measures to prevent exposure during the surge.
37 469 The community perceptions and attitudes towards COVID-19 and its precautionary measures may be
38 470 different at the present time given that the community has acquainted with the current situation. One of
39 471 the limitations of this study was that all study respondents were interviewed online, to minimize the risk
40 472 of infection. In online interviews, the authors did not have the opportunity to build rapport with
41 473 community members over Zoom or obtain non-verbal cues during interviews. Secondly, due to the
42 474 nature of outbreak prevention, the study was unable to conduct focus group discussions with community
43 475 members, which would have provided detailed information about personal and group feelings. Besides,
44 476 the timings of interviews (May-June 2020) is also one of the limitations of this study as the results
45 477 would have yielded a different picture if participants would have been interviewed in Feb and March
46 478 2020, when the pandemic just occurred in Pakistan. Lastly, this was a short-term study and does not
47 479 involve long-term perceptions of the community members with this pandemic.
48 480

49 480
50 481 The findings from this study will help tailor existing public health interventions to address the social
51 482 and behavioral problems related to this pandemic. The findings from this study can be directly used for
52 483 improving community preparedness and response for possible future COVID-19 waves or other
53 484 outbreaks. Future research should be directed at developing and implementing contextual interventions
54 485 to improve community understanding and social responses towards COVID-19. In addition, future
55 486 research could be conducted to capture any temporal changes in community perceptions and attitudes,
56 487 especially with respect to vaccinations.
57 488

58 489 **Conclusion**

59 490 This study provides an in-depth view of communities' perspectives and attitudes towards the COVID-
60 491 19 pandemic. Generally, community members had good knowledge about COVID-19, and positive

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3 492 behavior and attitude towards using standard precautions, which is important to prevent exposure to
4 493 COVID-19. The knowledge is mainly acquired through electronic media, print media, and social media
5 494 platforms, which have pros and cons. However, some community members including younger
6 495 individuals had poor adherence to safety measures. This may necessitate concentrated efforts to raise
7 496 awareness and resolve misconceptions through community mobilization and sensitization activities.
8 497 The study emphasizes that sufficient knowledge and awareness about COVID-19, adequate training
9 498 and drills, and adherence to safety measures, are necessary to better prepare for the second wave of
10 499 COVID-19. Lessons learned from this study are extremely valuable and can be transferable to
11 500 community settings in Pakistan that have similar socio-demographic characteristics. However, findings
12 501 cannot be extrapolated to other countries because of the differences in participant demographics and
13 502 health system constraints.
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For peer review only

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3 504 List of Abbreviations
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5 505 World Health Organization (WHO); Centers for Disease Control and Prevention (CDC); Severe
6 506 Acute Respiratory Syndrome (SARS); Ebola Virus Disease (EVD); In-depth interviews (IDIs); Aga
7 507 Khan University Ethical Review Committee (AKU-ERC); British Broadcasting Corporation (BBC);
8 508 Cable News Network (CNN); Aga Khan University hospital (AKUH); Human Immunodeficiency
9 509 Viruses (HIV)

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11 510
12 511 Declarations
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14 512
15 513 Ethics approval and consent to participate

16 514 Ethical approval for this study was obtained from the Aga Khan University Ethical Review Committee
17 515 (AKU-ERC) – [2020-4825-10599]. Written informed consent was provided by all study participants.
18 516 Informed consent included permission to audio record the interviews and use anonymized quotes.
19 517 Voluntary participation and the right to ask any questions and to decline participation at any time were
20 518 emphasized during the data collection.

21 519
22 520 Consent for publication

23 521 Written informed consent for publication was obtained.

24 522
25 523 Data sharing statement

26 524 The datasets used and/or analysed during the current study are available from the corresponding author
27 525 on reasonable request.

28 526
29 527 Competing interests

30 528 We declare no competing interests.

31 529
32 530 Funding

33 531 None

34 532
35 533 Contributorship statement

36 534 ASF, & NAA designed the study. ASF, NAA, NBA, RF, and SNM collected the data. ASF, & NAA
37 535 analyzed and interpreted the data. ASF wrote the first draft of the manuscript. All authors contributed
38 536 to reviewing and editing the manuscript.

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41 539 None

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Annex-1
In-Depth Interview Guide for interviewing community members

Basic Information

S.no	Participant Code (Confidential)	Age	Sex	Occupation	Educational level	Locality/site

General Perceptions and attitudes towards COVID-19

1. How do you feel about your knowledge level regarding COVID-19 pandemic?
2. How did you learn about the coronavirus outbreak?
3. What is the reliable source of information about COVID-19?
Probes: social media, television, newspapers/magazines, websites, friends/family, health care professionals
4. What were your initial reactions towards COVID-19, when you first heard about it?
a. Probes: curse from God etc.
5. What are your thoughts and feelings about COVID-19 cases?

Perceptions on safety measures for preventing COVID-19

1. What safety measures have you taken for yourself and for your family safety in COVID-19?
Probes: hand washing, sanitizer, social distancing, covering your cough, avoiding touching your eyes, nose, and mouth with unwashed hands, wearing a face mask, avoiding close contact with someone who is sick

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4 **Perceived risks associated with poor adherence to safety measures**
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7 1. Do you think novel coronavirus will inflict serious damage in your community, if
8 adequate safety measures are not taken?
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10 2. Do you think you can protect yourself against the novel coronavirus?
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13 **Future Preparedness**
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16 1. In your opinion, what are the needs for future preparedness for any outbreak that prepare
17 community (trainings, awareness, equipment, protective gears)
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Standards for Reporting Qualitative Research (SRQR)*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

Title and abstract

<p>Title - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</p>	<p>Pape no. 1/line no. 1-2</p>
<p>Abstract - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</p>	<p>Pape no. 2/line no. 32-58</p>

Introduction

<p>Problem formulation - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</p>	<p>Pape no. 4/line no. 124-127</p>
<p>Purpose or research question - Purpose of the study and specific objectives or questions</p>	<p>Pape no. 4/line no. 116-120</p>

Methods

<p>Qualitative approach and research paradigm - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</p>	<p>Pape no. 4/line no. 125-127</p>
<p>Researcher characteristics and reflexivity - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability</p>	<p>Pape no. 6/line no. 206-210</p>
<p>Context - Setting/site and salient contextual factors; rationale**</p>	<p>Pape no. 4 & 5/line no. 129-142</p>
<p>Sampling strategy - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</p>	<p>Pape no. 4/line no. 125</p>
<p>Ethical issues pertaining to human subjects - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</p>	<p>Pape no. 6/line no. 191-193</p>
<p>Data collection methods - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</p>	<p>Pape no. 5-6/line no. 144-189</p>

1 2 3 4 5	Data collection instruments and technologies - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study	Pape no. 6 & 6/line no. 159-189
6 7 8	Units of study - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	Pape no. 6-7/line no. 224-225
9 10 11 12	Data processing - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts	Pape no. 6/line no. 195-204
13 14 15 16	Data analysis - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**	Pape no. 6/line no. 195-204
17 18 19 20	Techniques to enhance trustworthiness - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**	Pape no. 6/line no. 206-210

Results/findings

23 24 25 26	Synthesis and interpretation - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	Pape no. 6-9/line no. 213-376
27 28 29 30	Links to empirical data - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings	Pape no. 6-9/line no. 213-376

Discussion

33 34 35 36 37 38	Integration with prior work, implications, transferability, and contribution(s) to the field - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field	Pape no. 9-11/line no. 381-487
39 40 41	Limitations - Trustworthiness and limitations of findings	Pape no. 11/line no. 463-479

Other

44 45 46	Conflicts of interest - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed	Pape no. 13/line no. 527-528
47 48 49	Funding - Sources of funding and other support; role of funders in data collection, interpretation, and reporting	Pape no. 13/line no. 530-531

*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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**The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

Reference:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014
DOI: 10.1097/ACM.0000000000000388

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