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Stressors and coping strategies of migrant workers diagnosed with COVID-19 in Singapore: a qualitative study

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ABSTRACT

Introduction The health, psychological and socioeconomic vulnerabilities of low-wage migrant workers have been magnified in the COVID-19 pandemic, especially in high-income receiving countries such as Singapore. We aimed to understand migrant worker concerns and coping strategies during the COVID-19 pandemic to address these during the crisis and inform on comprehensive support needed after the crisis.

Methods In-depth semi-structured interviews were carried out with migrant workers diagnosed with COVID-19. The participants were recruited from a COVID-19 mass quarantine facility in Singapore through a purposive sampling approach. Interviews were transcribed verbatim and thematic analysis performed to derive themes in their collective experience during the crisis.

Results Three theme categories were derived from 27 interviews: migrant worker concerns during COVID-19, coping during COVID-19 and priorities after COVID-19. Major stressors in the crisis included the inability to continue providing for their families when work is disrupted, their susceptibility to infection in crowded dormitories, the shock of receiving the COVID-19 diagnosis while asymptomatic, as well as the isolating conditions of the quarantine environment. The workers coped by keeping in contact with their families, accessing healthcare, keeping updated with the news and continuing to practise their faith and religion. They looked forward to a return to normalcy after the crisis with keeping healthy and having access to healthcare as new priorities.

Conclusion We identified coping strategies employed by the workers in quarantine, many of which were made possible through the considered design of care and service delivery in mass quarantine facilities in Singapore. These can be adopted in the set-up of other mass quarantine facilities around the world to support the health and mental well-being of those quarantined. Our findings highlight the importance of targeted policy intervention for migrant workers, in areas such as housing and working environments, equitable access to healthcare, and social protection during and after this crisis.

Strengths and limitations of this study

- Low-wage migrant workers are particularly vulnerable to the effects of the COVID-19 pandemic. To the best of our knowledge, we are the first study to gain perspectives directly from migrant workers who are positive for COVID-19.
- The qualitative method of study affords in-depth insights to the views of migrant workers that may not be adequately captured in quantitative methods.
- Cultural-appropriateness and trust were promoted in our interviews, as they were designed and conducted by a multi-lingual, multi-disciplinary team including a psychologist, social workers familiar with work in the migrant community and medical doctors native to South Asia.
- The study is limited by selection bias as our participants were all medically well and willing to share their experiences. We did not access migrant workers who had more severe symptoms of COVID-19 whose stressors and coping strategies may be different.
- The participants' stressors may evolve after they recover from COVID-19. This study did not access recovered workers or those who were back at work.

INTRODUCTION

The United Nations estimates that there are approximately 272 million international migrants in 2019.[1] In 2017, migrant workers constitute an estimated majority (59%, 164 million) of all international migrants.[2] Low-wage, blue-collar migrant workers have been identified as a group particularly vulnerable to the health and socioeconomic impact of the COVID-19 pandemic.[3–5] They often live and work in crowded environments that put them at high risk of infectious disease spread. Access to healthcare in receiving countries can be limited by cultural, economic and policy barriers.[6 7] Low-wage migrant workers are also more likely to be employed on

fixed-term contracts, putting them at risk of losing their livelihoods in the ongoing global recession.[8 9]

As of 2019, half of Singapore's foreign workforce (approximately 740 000 workers) are low-wage non-domestic migrant workers.[10] These workers are mostly men from Bangladesh, India, China and Southeast Asian countries. They primarily work in construction, manufacturing, marine and service industries, and live in dormitories of up to 20 people to a room with communal bathrooms and kitchens. Employers in Singapore are mandated to provide medical insurance to all migrant workers. Despite this, migrant workers still face difficulties in accessing healthcare due to poor knowledge of their insurance coverage, inherent systemic barriers[11], and concerns about illness causing job losses or repatriation.[12] Difficult financial circumstances and barriers to healthcare access contribute to a higher risk of psychological distress in these workers.[12 13]

As of 10 September 2020, 94% of the 57 229 COVID-19 cases in Singapore were residents in migrant worker dormitories.[14] The government of Singapore set up a multi-ministry task force in January 2020 to manage the country's response to the COVID-19 outbreak. Shelter-in-place measures were instituted at workers dormitories while the government carried out extensive and systematic testing. To help employment retention, the government announced budget support for employers,[15] at the same time mandating that they continue paying migrant worker salaries.[16] Large-scale quarantine facilities, termed Community Care Facilities (CCF), were set up in to accommodate migrant workers who tested positive for COVID-19 but had mild or no symptoms.

The CCF at the Singapore Expo were 10 repurposed exhibition halls with a total capacity for over 9000 residents.[17] These halls have controlled ventilation systems to generate a negative air pressure within the halls, preventing cross-contamination of air inside and outside the halls. Migrant workers who tested positive for COVID-19 were housed in in twin-sharing rooms and were free to move within each hall. Meals, basic amenities and medical care were provided free-of-charge. The workers were taught to check their vital signs daily (body temperature, blood pressure and oxygen saturation) at self-help health kiosks. All staff could directly refer residents to a team of on-site mental health workers though a hotline. The team was made up of medical social workers and a psychologist. The migrant workers could also self-refer for help at the medical post or access remote counselling services provided by a local non-government organisation HealthServe through their mobile phones. Workers were discharged after two incubation periods, or about 21 days, to processed dormitories. Some stayed for longer if their dormitories were not ready to receive them.

While they form a sizeable proportion of the Singapore's workforce and are greatly affected by the protracted COVID-19 pandemic, we understand little about migrant workers' lived experience and their concerns during the crisis. News media interviews with individual migrant workers report anecdotal concerns about their health[18] and potential loss of employment.[19] Reports of suicides and attempted suicides among quarantined migrant workers have raised concerns about their mental well-being.[20]

In this study, we aim to understand the experiences and concerns of migrant workers who tested positive for COVID-19 in Singapore and were quarantined in CCF. Understanding migrant workers' concerns can help us address them during the crisis and inform on comprehensive support needed after the crisis.

METHODS

Study design and participants

Migrant workers diagnosed with COVID-19 were recruited from the CCF in Singapore Expo using a purposive sampling approach to obtain diversity in responses. Country of origin, variation in years of work in Singapore and time since admission to the COVID-19 facility were considered. The sample size was determined by thematic saturation. Our methodology was guided by the Consolidated Criteria for Reporting Qualitative Research checklist.[21]

Procedures

In-depth interviews were carried out between 21 June 2020 and 16 July 2020 in the participants' preferred language. English (n=19) and Mandarin Chinese (n=3) interviews were carried out in person at the CCF. Tamil interviews (n=5) were carried out remotely through teleconferencing and facilitated by a study team member in the CCF.

The aims of the study were explained to potential participants and participation was voluntary. Verbal consent for interviews and audio recordings were obtained. Participants were briefed that they could stop the interview at any point. Interviews were anonymous and no identifying data were collected. No monetary or in-kind compensation were provided for participation in these interviews.

Participants were interviewed using a semi-structured interview guide that included broad questions about their experiences during the COVID-19 pandemic, and their priorities and concerns before, during, and after the crisis, such as 'What are you most concerned about now?', 'What will be important to you after COVID-19?'. Additional questions were asked to probe for changes in concerns and priorities, such as 'How have your priorities changed from before COVID-19?'. Prompts such as 'Tell me more' were also used. The interview guide was developed by the Patient Experience team who attend to psychosocial well-being of patients at the CCF (including a psychologist, social workers and speech pathologists), interviewers included the Patient Experience team and medical doctors native to South Asia. All interviewers were briefed by the Patient Experience team prior to the interviews on identifying signs of distress in interviewees. If signs were identified, the interviewers were able to

access the on-site mental health team through a hotline set up as part of the operations of the CCF.

Data analysis

All interviews were transcribed and translated by bilingual study team members. Data were coded using Microsoft Excel, before being analysed thematically[22] to derive understanding of the migrant workers' collective experience while in the COVID-19 pandemic. Thematic analysis entailed identifying patterns of meaning (i.e. themes) in qualitative data.

We analysed the data using a six-phase guide in reflexive thematic analysis by Braun and Clarke.[23 24] Initially, authors (KY, HP, YT) read the transcripts several times to familiarise themselves with the content. They then independently used open coding to generate codes on a subset of six transcripts. This process allowed codes related to migrant worker experiences to arise inductively from the data. Then, the authors held discussions to reconcile discrepancies in the assignment of codes and their interpretation. Three broad candidate themes were generated by group codes together: 'Experiences and feelings about working in Singapore', 'Thoughts, feelings, and experiences during COVID-19' and 'Priorities and concerns about the future'. A codebook was then developed from consensus which allowed intercoder clarification that improved reliability of coding. The authors subsequently coded the remaining interviews independently. Consecutive rounds of iterative discussions were conducted to revise and define key themes until all transcripts were coded. The themes and codes were then presented and quotes were added to illustrate them. Edits were made where necessary to correct grammar and omit extraneous words.

RESULTS

Participants and interviews

Our participants included 27 migrant workers diagnosed with COVID-19. All of our participants were men, with 12 of them originating from India, 11 from Bangladesh, 3 from China and 1 from Myanmar. The length of time spent working in Singapore ranged between 1 and 19 years (median: 10 years). At the time of interview, they have spent a range of 1–32 days (median: 12 days) quarantined in the CCF. The average length of each interview was approximately 15 min.

Themes

Three themes emerged from analysis of the interviews (table 1).

Table 1 Themes categories and subthemes

Migrant worker concerns during COVID-19	► Providing for family and stress caused by work disruption ► Worry about susceptibility to COVID-19 ► Acceptance of diagnosis and hope for recovery from COVID-19 ► Stressors from quarantine
Migrant worker coping during COVID-19 quarantine	► Staying connected with family ► Keeping updated on the global situation ► Assurance from having daily needs met ► Importance of faith and religion
Migrant worker priorities after COVID-19	► Looking forward to a return to normalcy ► Health as a new priority in life

Migrant worker concerns during COVID-19.

Migrant worker concerns during COVID-19

Providing for family and stress caused by work disruption

Working to provide for their families was the primary reason for economic migration in migrant workers. Many of the migrant workers come from rural villages in their home countries and were the sole breadwinner of their families, supporting up to seven other family members.

> Actually when we work, it's to earn a bit more money, live a better life. Because we need to consider our children's future—while they are still schooling, they still need a bit of money. My parents are getting older. When I come to Singapore, I wish to earn a little bit more money. (P011)

> I work for salary, when they give me my salary, I send it home. My family can survive on my money. (P019)

Filial piety is emphasised in the Asian cultures from which the interviewees originate. They felt a strong sense of responsibility to take care of their families, even as they work far from home and may not return home often.

> When I was a baby, my father and mother took care of me. Now that they are old, we also have to take care of them. (P022)

> The roles, the ruling is from God. You take care your parents, must take care of your parents. (P023)

Shelter-in-place measures instituted from April to June 2020 meant migrant workers (except those in essential services) were to stop working temporarily. Even as these measures were eased in July 2020, migrant workers diagnosed with COVID-19 remained in quarantine and were unable to start work. This disruption in routine made the workers feel restless and unhappy.

> I'm really getting bored, I have to go, I want to go work. (P022)

> Since the past three months I have been absent from my job. Not working makes me feel unhealthy. (P024)

It was a source of concern that they were not able to continue providing for their families adequately in this time.

> They have no money … I feel very bad. Very bad feeling. This COVID-19, very bad situation. (P013)

Worry about susceptibility to COVID-19

The migrant workers saw crowded living conditions as the main reason for their COVID-19 infection and the large number of infections within the migrant worker community.

> Singapore dormitories are okay, but one room many men, that's why coronavirus came. You see, residential housing has no problem, but all the problems come in dormitories. Why? Many people, one room 15 persons, 16 persons. In one month, the virus came very fast. (P008)

This was despite adherence to precautionary measures put in place since the start of the pandemic.

> I was already very careful, I was exercising a lot of safety measures but unfortunately someone else was infected in my room and so I also got infected. (P020)

Acceptance of diagnosis and hope for recovery from COVID-19

As the workers had mild or no symptoms, they were initially disbelieving of their COVID-19 diagnosis. They later accepted this as they were physically well and did not remain worried.

> Even though I am positive, along the way I did not have any symptoms. So that's why I don't worry that much. (P010)
>
> I don't feel I have a fever, I don't feel pain in my throat or any symptoms. I went to see the doctor, doctor said you are positive. So that's why I cannot believe … I have accepted it. I don't believe I have COVID but the doctor says I have, so no choice, I'll take it. (P022)

After being diagnosed with COVID-19, migrant workers saw maintaining good health through regular exercise and eating well as important in aiding their recovery. The self-monitoring of vital signs was important to the migrant workers, as was access to medical care through tele-consult services and at medical posts at the CCF. In this particular facility, the average daily adherence rate to vital signs monitoring was 99.7% during the period our interviews were conducted.

> Because we have tested positive for COVID-19, we must take care of our health to feel better. Take fruits, exercise, drink more water. This is very important now. (P007)

Work and money used to be of primary importance to migrant workers before the COVID-19 pandemic. Being diagnosed with COVID-19 changed their perspective, many who then saw health as being more important than money and other material aspects of life.

> I only considered this during COVID-19. If you don't have good health, it is no use even to have a lot of money. Now, if I have to choose, I choose good health. (P011)

Stressors from quarantine

From diagnosis, a worker could be moved across three or four different locations from their dormitories to hospitals and isolation facilities before admission to the CCF. This experience of displacement was disorientating and isolating.

> When I first came in, I was very apprehensive, very afraid to be all by myself. (P006)
>
> I am alone. The room is big, clean, the food is good. Then, the heart is not happy. Alone. (P016)

The workers were most distressed by the lack of sunlight and fresh air in the CCF, as the negative-pressure halls had no windows.

> My only complaint is that I'm not getting adequate sunlight and it makes me feel unwell. Otherwise mentally I feel fine. (P023)

As each hall housed a large number of residents with high numbers of daily admissions and discharge, the migrant workers were also concerned about reinfection in the facility.

> In this place, what we are concerned about is that there are new patients coming in every day. We want to change an environment and not stay here anymore. We have been here since our diagnosis and do not have any symptoms, so I believe we are probably near recovery. But if we continue to stay here and come into contact with new people, we may get infected again. (P005)

Migrant worker coping during COVID-19 quarantine

Staying connected with family

While in quarantine, migrant workers had more time to call their families and depended on them for support. Internet connectivity in quarantine facilities and sponsored prepaid calling cards helped to facilitate this.

> I call my friend I call my family make happy. I also feel happy then not many worry, share with everybody I am okay, I feel okay. (P001)
>
> Last time not so often, because last time I had no Internet. I had to use a Hi Card [prepaid calling card], it is expensive. Even if I called, it was also five min, two min … but now I call them. (P007)

At the time of our interviews, South Asia was facing higher rates of COVID-19 infections than Singapore. In that time, the migrant workers worried about the well-being of their families.

> We belong to the family. So if any part of our family is lost, that's a very, very bad feeling. (P010)
>
> I worry for my family because now their situation is also not too good. (P019)

In their phone conversations with their families, they shared COVID-19 prevention measures and strategies they have learnt while they were in Singapore, such as social distancing and hand hygiene.

> Of course I worry, but my advice to my family is 'Don't go outside the house every day'. (P018)
>
> I also worry for them. Explain to them, whatever I learnt from here, I check on them. Make hygiene and do the hand wash properly … I just have to let them know how they can be safe. (P019)

Despite speaking with their families more often than they used to, some migrant workers chose to hide their COVID-19 diagnosis from their families to avoid worrying them.

> I never inform them that I am affected, positive. But I say our room has some problem, so the government took us out and put in this place to take care us. It's a safe place for us. I didn't say I'm affected. Because if I tell them, my mother, my wife too … too much feeling, will cry. Because Bangladesh is very difficult. It has been so long, 23 or 26 person died in Singapore. But in Bangladesh there are so many deaths, even in India there are also so many. So very worried. (P007)
>
> In Bangladesh, their mentality is that getting COVID-19 means you might die. But we know the current situation in Singapore. Even when we have 41 000 cases, 34 000 have recovered. We know that in the current situation, people are not dying. They don't understand how it is here. But my situation is good. If I inform them I am positive, they will be thinking in a different way because our country is different. (P019)

Keeping updated on the global situation

Access to news about the worldwide pandemic situation allowed the workers to understand and reflect on the global situation. They found meaning in comparing their experiences to that in other countries.

> A lot of people die in every place, very sad to say, a lot of people die. Yes, I see the different countries, Singapore is so better, most better … not better, most better. (P022)
>
> One thing that this virus has taught the world is that all human beings are equally affected and COVID does not differentiate between different groups of people … Everyone is equal when they face such problems, and this is the point of learning from COVID. (P023)

Assurance from having basic needs met

In the CCF, accommodation, meals, and medical care were provided at no cost to the workers. The workers felt well-provided for and that the care they received in Singapore was equitable.

> I'm thankful for being in a country like Singapore, that serves me three meals of food a day free of cost, gives me a phone card and have doctors that take care of me. In comparison to a lot of countries that don't provide these basic amenities during such a tough time. (P024)
>
> Here you all think patients, which country, what religion, what colour is not important. Life is important. Singaporean people's thinking. My worksite also the same, my boss also said, job not important, life important. (P001)

In their time in quarantine, they continued to be in contact with their colleagues and employers and were paid a portion of their salary in the time that they were unable to work. This support from work was appreciated by the migrant workers.

> I am getting my salary excluding what I might earn for overtime … for the moment in this COVID situation, this is reasonable and I am thankful. (P025)
>
> Sometimes I chat with my company managers to keep connected. (P023)

Importance of faith and religion

In this time, the migrant workers reported spending more time practising their faith and religion, including engaging in meditation and prayer. They looked to their faith and religion for strength and to make sense of their situation.

> I am not scared because I am Muslim, I no need scared if I die also. (P022)
>
> If there is one small problem happening at a corner of the world then that is a situational crisis, but if the whole world is affected then that is decided by God. (P023)

Priorities after COVID-19

Looking forward to a return to normalcy

In talking about their priorities after COVID-19, the workers were mostly keen to return to work in Singapore. Earning money to provide for their families remained their main concern after recovery.

> I am quite calm. Whatever your government tells me to do, I'll just do that. Then I can go back a little earlier, return to regular life earlier, return to work earlier. When I work I can return to where I live, then I can make calls, surf on my phone, and do that again the next day. (P011)
>
> I have my wife, mother and daughter back home … as these three people are dependent on me, my family is still my priority. (P027)

Health as a new priority in life

Before the COVID-19 pandemic, migrant workers saw good health and work safety as factors in ensuring that they could continue working to support their families in their home country.

> I come here for work. When my health is good, I can work, I can earn money and support my family. (P001)

> If there's no safety, then the money earned will be useless. (P026)

At the CCF, the migrant workers were empowered to monitor their health and were often reminded about COVID-19 prevention measures, such as wearing face masks and safe distancing. In returning to life in the community, they were keen to be more active in monitoring their own health and were conscious of the importance of COVID-19 safety measures.

> In the future, I can also implement this myself. I can check up. I have the blood pressure machine too. Before this, I didn't know how to check, but now I know how. In the future, I plan to buy one of this other device so that I can check on my health. (P019)

> You have to be mindful of yourself and also mindful of other people's safety. (P011)

The migrant workers' vision of life after recovery from COVID-19 saw health and access to healthcare as a new priority.

> I have realised the importance of staying healthy and would like to focus on improving my health. (P025)

Continued access to medical care in the longer term were seen as important, partly as they had increased awareness of the importance of this access in times of need, and also to monitor for potential long-term health effects of COVID-19. Some shared a desire to return to their home countries for better access to healthcare.

> So in the way that the doctors help me get over COVID-19, I feel that in case during work I meet with something, I will require a doctor's help to feel good, to feel better, and to continue to work. (P006)

> If I'm in China, it will be more convenient to see the doctor, more convenient to take X- rays. I'll probably need to continue to check on my health. (P026)

DISCUSSION

Our analysis yielded three theme categories surrounding the lived experience of migrant workers quarantined in a CCF who have tested positive for COVID-19: their concerns during the COVID-19 pandemic, strategies that helped them cope, and their priorities after the crisis.

The migrant workers' commitment to supporting their families did not change throughout the COVID-19 crisis. Even as they were unable to take care of their families financially during quarantine, they contacted their families frequently and supported them by sharing about COVID-19 prevention measures. Many of our interviewees hid their COVID-19 diagnosis and the true reason for their quarantine from their families. As a population known to be at higher risk of psychological distress,[12 13] the burden of protecting their families from worry and shouldering the weight of their own anxieties during crisis can take additional toll on migrant workers' mental health.

Even as the interviewed workers practised preventative measures such as wearing face masks, they saw catching COVID-19 as inevitable in crowded dormitories. Preventing a surge of COVID-19 infections in this environment remains a challenge even with quarantine and widespread testing. By December 2020, 47% of the 323 000 dormitory-dwelling migrant workers in Singapore had a COVID-19 infection.[25] In Malaysia, migrant worker infection numbers continued rising despite lock-down measures instated by the government.[26] Migrant workers' crowded living and working conditions are directly related to their risk of contracting infectious diseases[7 27] and vector-borne diseases such as dengue fever.[28] The impact of disease outbreaks in the international migrant community extends to the public health and economy of receiving countries.[29] Efforts to design safe living and working environments for migrant workers are needed urgently to minimise the risk of infectious disease outbreaks.[30]

Access to support and information, and an assurance that their basic needs will be met can mitigate stress in quarantined migrant workers. The negative psychological impact of quarantine on migrant workers[31] and the general population[32] are well-described in literature. High levels of post-traumatic stress symptoms have been reported in clinically stable patients with COVID-19 in China's purpose-built quarantine facilities.[33] Our interviewees reported anxiety when being diagnosed with COVID-19 and during quarantine, especially as the CCF lacked access to sunlight and natural airflow. This study is the first to identify strategies that helped the migrant workers cope with the isolating nature of quarantine, such as maintaining digital connectivity to existing support networks, access to healthcare and information, and the freedom to practise their religion. As more COVID-19 quarantine facilities are set up around the world,[34–36] consideration should be made in their design to facilitate continued access to the outside world and maintain a sense of normalcy to support residents' mental health and quality of life. While none of our interviewees reported significant distress, there are reports of suicides and attempted suicides in quarantined migrant workers in Singapore during this crisis.[20] Access to mental health services should be proactively put in place for migrant workers and other quarantined populations.

Previously seen as a group who are reluctant to seek healthcare in receiving countries,[11 12 37] our study found that health and access to healthcare are now a priority

to the workers. During their quarantine, the workers were empowered to monitor their health and afforded unprecedented universal health coverage. Experiencing COVID-19 has made them more aware of the importance of keeping healthy, and they are concerned about monitoring for potential longer term side effects of a COVID-19 infection. The need for progress towards meaningful and equitable access to healthcare for migrant workers and other vulnerable populations, as outlined by the WHO sustainable development goals[38] and increasingly recommended during the pandemic[39 40] is even more pressing now and after this crisis.

Limitations

In our study, the migrant workers did not express worries about losing employment after the COVID-19 pandemic. This may be attributed to the security of continuing to receive wages during their quarantine and remaining in contact with their employer. This study was, however, limited by its cross-sectional nature during the height of the pandemic in Singapore. A perspective more congruent to that of the global narrative may emerge as the sustained economic impact of the COVID-19 pandemic are realised in later months.

Another limitation of the study is that all participants were clinically stable migrant workers diagnosed with COVID-19. The perspectives of migrant workers with more serious symptoms may differ from this group. However, a great majority of migrant workers infected with COVID-19 in Singapore were clinically stable and never required admission to a hospital, so this representation may be reasonable in our context. Pilot testing was not done on the interview guide. Instead, the study team's expertise in communication science and mental health, as well as experience working with the migrant worker population, were leveraged to our best efforts in its design.

Conclusion

Low-wage migrant workers are at risk of bearing significant health, psychological and socioeconomic impact of the COVID-19 pandemic. This is the first study that gained qualitative insight to migrant worker perspectives in this crisis. The concerns of migrant workers during the crisis and their vision of life after COVID-19 highlight the importance of targeted policy intervention for migrant workers, in areas such as housing and working environments, equitable access to healthcare, and social protection during and after this crisis. We identified coping strategies employed by the workers in quarantine, many of which were made possible through the considered design of care and service delivery in mass quarantine facilities in Singapore. These can be adopted in the set-up of other mass quarantine facilities around the world to best support the health and mental well-being of those quarantined. This study lays a foundation for future research in policies to address the needs of migrant workers in mitigating the impact of this and future global crises on their health and psychosocial well-being.

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