

Dyspnoea experience and management strategies for haemodialysis Thai patients during the COVID-19 pandemic

Kantaporn Yodchai and Kingkamon Phetsri

Keywords management strategies, haemodialysis, COVID-19 pandemic, dyspnoea experience

For referencing Yodchai K & Phetsri K. Dyspnoea experience and management strategies for haemodialysis Thai patients during the COVID-19 pandemic. *Renal Society of Australasia Journal* 2023; 19(2):to be assigned.

DOI <https://doi.org/10.33235/rsaj.19.2.to be assigned>

Submitted 9 June 2023, Accepted 21 September 2023

Abstract

Dyspnoea in patients with chronic kidney disease (CKD) receiving haemodialysis (HD) is common, and caused negative impacts during the COVID-19 pandemic. This study aimed to explore dyspnoea experience and management strategies in Thai HD patients during the COVID-19 pandemic. A qualitative descriptive approach was conducted. Purposive sampling was used to recruit 20 participants from three regional hospitals in Thailand, and data were collected using face-to-face, individual semi-structured interviews. Data were analysed using a qualitative content analysis method.

The study results revealed two main themes and six sub-themes. This first was the experience of dyspnoea during the COVID-19 pandemic, including: being afraid of contracting COVID-19, leading to severe dyspnoea and death; difficulty controlling fluid and food intake; and reducing HD cycles. The second concerned dyspnoea management during the COVID-19 pandemic, including: changing dietary behaviour; applying religious teaching; and receiving more help from family members. This study reflects how Thai culture is influenced by both religion and family support. Nurses play an important role in helping and managing patients' dyspnoea symptoms, allowing patients receiving HD to fulfil their daily life goals during the COVID-19 pandemic.

Introduction

Coronavirus disease 2019 (COVID-19), defined as acute respiratory distress syndrome coronavirus 2 (SARS-CoV-2) and the COVID-19 outbreak, has quickly spread worldwide, including in Thailand (World Health Organization, 2022). During the COVID-19 pandemic, government policies slowed the spread of the disease. In reaction to this, The Nephrology Society of Thailand (2020) responded by implementing a guideline to prevent the spread of infection, requiring education of patients, screening and recognition of the symptoms, appropriate personal protective equipment (PPE), isolation and

meticulous tracking of contacts. However, the indirect effects of this rigid implementation of health protocol or policy can possibly cause a burden for haemodialysis (HD) patients. For instance, HD patients experiencing discomfort due to the build-up of residues in the body may develop dyspnoea (Darsini et al., 2022).

Furthermore, patients receiving HD are especially susceptible to COVID-19. Patients undergoing HD who are in-centre need to travel from home to the dialysis centre two to three times a week for their HD appointment, which increases possible exposure. In addition, patients with end-stage kidney

Kantaporn Yodchai RN, PhD

Faculty of Nursing, Prince of Songkla University, Songkhla, 90110, Thailand

Kingkamon Phetsri RN, MSN

The School of Nursing, Walailak University, Nakhonsithammarat, Thailand

Correspondence to Kantaporn Yodchai, Faculty of Nursing, Prince of Songkla University, 90110 Thailand

Email kantaporn.y@psu.ac.th

disease (ESKD) who contract the infection heighten the risk of complication and death related to old age, and comorbidities such as diabetes mellitus, heart disease, obesity and high blood pressure. Patients with chronic kidney disease (CKD) may also have an impaired immune system, causing a high risk of COVID-19 infection (Galczyk et al., 2022; Kliger et al., 2020; Sirijatuphat et al., 2021).

Dyspnoea is a subjective experience described as difficulty breathing or shortness of breath (Farinha, 2017). Shortness of breath is the sensation patients receiving HD experience when suffering from abnormal breathing; the severity of breathing difficulty is a major cause of volume overload (Galczyk et al., 2022). This can occur in up to 34.0% of patients (Crombeen & Lilly, 2020). If breathing difficulty causes the individual with ESRD to be unable to perform daily life tasks, they may develop heart failure, which may be the resulting cause of death (Wongsaree, 2015).

The purpose of this study was to explore dyspnoea experience and management strategies in Thai HD patients during the COVID-19 pandemic. The study revealed primary data that could assist nephrology nurses and healthcare providers to manage dyspnoea and promote quality of life in patients receiving HD treatment.

Methods

Participants

By using purposive sampling, 20 participants were recruited from three regional hospitals in Thailand from September 2021 to March 2022. The inclusion criteria were: aged 25–61 years old; receiving dialysis for at least 1 year; and able to communicate in Thai.

Data collection

Once participants provided permission, nephrology nurses from each setting helped the researcher in the selection of possible participants who met the inclusion criteria. A detailed verbal explanation was then given to participants outlining all aspects of the research process. Participants also received an opportunity to question the researcher, comment and voice any concerns they had prior to participating in the study. Agreement to proceed was then confirmed by participants signing a consent form. The interviews were conducted by telephone call to prevent COVID-19 infection. Before beginning the interview, the researcher requested permission to audio record. Prior to the interview, demographic data were collected from participants and interviews took approximately 45–60 minutes. All participants were interviewed twice to ensure clarity and understanding of the information participants provided. Following each interview, all field notes, interview reflections and the information participants provided were immediately written down. Data saturation was surmised after 20 interviews.

Data analysis

Qualitative content analysis was conducted to analyse the data (Graneheim & Lundman, 2004). Data collection and analysis were performed simultaneously. The researcher transcribed the audio recording into transcripts verbatim and read the transcripts line by line to gain a whole sense, then selected meaning units from each interview that described dyspnoea experience and management strategies in Thai HD patients during the COVID-19 pandemic. A unit of meaning was composed of multiple sentences that contained multiple meanings. After open coding, meaning units were selected and compared with existing meanings of expressions to find similarities. Lastly, categories were created, and a general description of the categories was formulated containing two main themes and six sub-themes.

Ethical considerations

Study approval was obtained from the Human Research Center for Social and Behavioral Sciences Institutional Review Board, Prince of Songkla University, Thailand (PSU IRB 2021-LL-Nur 013) and the ethics committee of the three public hospitals where the study was undertaken, reference numbers: 2021-LL-Nur 013, HYH EC 094-64-02 and 16/2564. All participants received assurance of the confidentiality and anonymity of their data at all times. Potential participants were informed of the study purposes, process, speculated benefits, potential risks, and the right to refuse or withdraw from participation before providing written informed consent. All participant-related information was coded, saved, reported, published and presented with anonymity ensured.

Trustworthiness

The trustworthiness of this qualitative research was established through credibility, transferability, dependability and confirmability by Lincoln and Guba (1985). Credibility was achieved by obtaining the participant's permission to audio record so as to ensure an accurate interview conversation; the researcher returned the description to the participants, allowing the participants to check the transcripts and discover whether the research findings resonated with their perspective. Transferability was reached by explaining the details of the context of the setting of the study and the characteristics of each participant, data collection and analysis methods, and the data in detail so that others could understand the findings of this research. Dependability was reached by describing the research design and its implementation procedure, and checking the accuracy of the data and documents. The external audit was completed by consulting expert review. Confirmability was reached by systematically collecting data and recording research results. During the data collection period, data were transcribed verbatim, interview notes were taken and a reflection log was written.

Results

The sample of this study consisted of 20 participants. Demographic characteristics of participants revealed they were aged between 22 and 49 years old (mean=36.89, SD=7.07). More than half were male and Buddhist. There were two main themes and six sub-themes.

Dyspnoea experiences during the COVID-19 pandemic

Being afraid of contracting COVID-19, leading to severe dyspnoea and death

Participants reflected on their fears of the possibility of contracting COVID-19. They were aware that CKD people were at higher risk of infection than healthy people and that, when they came to the hospital, they may contact other patients with COVID-19. If they were infected with COVID-19, they might develop severe dyspnoea, which is a cause of death. As one participant said:

I knew I had chronic kidney disease, and I had a chance to get infected easily. It's a risk from infection more than for healthy people. I knew that I was sick with chronic kidney disease, which had more complications and makes it particularly difficult to breathe. If I got COVID-19 infection it directly affect my lungs. I think that I was so scared, and that I may die – Patient 4.

Another said:

I feel stressed, afraid of contracting COVID, afraid of being infected with COVID-19. When I received HD treatment, another patient did HD close to me. When I was at home, the nurse called me and informed me that the patients who sat close to me had COVID-19 infection. So, I was so scared if I got COVID-19, I might die – Patient 7.

Difficulty controlling fluid and food intake

Most participants normally were unable to control water intake and diet, which caused fluid overload. Consequently, they had to come to the hospital before their appointment to receive HD. Since the start of the COVID-19 pandemic, they needed to be stricter about water and food intake, otherwise they might need to have emergency HD treatment. However, emergency HD treatment could not be received easily during the COVID-19 pandemic because of HD centre policy. As one participant described:

Normally, I like to drink lots of water. I was a drink seller. When I am tired, I just drink water, which causes fluid overload. But during COVID-19, I was afraid that I could not control my habit. So, if I developed difficulty of breathing I needed to do haemodialysis beforehand – Patient 9.

Reducing HD cycles

The hospital policy related to reducing HD cycle from three times a week to twice a week caused fear of volume overload. Participants felt it was more difficult to manage their water and food intake. As one participant said:

Usually, I received HD three times a week, but during COVID-19, I did dialysis twice a week. I couldn't take it, because it was so hard to manage. I was left with about 2–3 kilograms of fluid in my body. So, I asked the nurse to go back to receiving dialysis 3 times/week – Patient 2.

Another participant said:

When I had dialysis twice, I felt that my stomach was tight and I was tired easily. When the COVID-19 situation got better, I then asked to receive it three times a week – Patient 9.

Dyspnoea management during the COVID-19 pandemic

Changing dietary behaviour

The participants reflected on their change in dietary behaviour when having to reduce the dialysis cycle from three times to two times per week. They needed to strictly limit water and food intake to avoid excess water until the day of dialysis. As one participant said:

I have to control my diet and control water intake more than before. If I do not control it, my weight is too much and I will face several complications. I don't drink a lot of water, so I urinate less. When I felt thirsty, I used a straw, so I didn't drink as much water. I tried to drink less than usual – Patient 5.

Another said:

I took care of myself better than before. In the past, I was not very careful with food, but now I will do what the doctor ordered, such as not drinking too much water and not eating salty food. I took care of my own body more – Patient 1.

Applying religious teaching

According to Islamic guidelines, Muslim participants were used to controlling excess water as a result of the fasting period, which helped them to control water overload during the reduction in HD cycles. They also perceived it as an opportunity to make merit during a difficult situation. As one participant said:

Today, I fasted because I felt that I had a lot of weight. In terms of religion, I applied the fasting period to help me control my diet intake. I also got merit during my life crisis – Patient 18.

Those who believe in Buddhism, use the Dharma by adhering to the principle of patience. They tried to reduce desire and selfishness to save their own life. As one participant said:

I use the principles of Buddhist teaching by being patient and reducing desires. It helped me to understand life better, I have to eat for life, but not live to eat. So, it allowed me to control my water intake better – Patient 13.

Receiving more help from family members

The participants reflected that the COVID-19 outbreak situation

and the epidemic caused them to adjust their lifestyles. Some had to rely more on their family members than usual, especially regarding diet and water intake. As one participant said:

...my brother and sister who take care of me, they help to remind me about my diet intake. They cook for me and remind me what I can eat. So, it helped me have good food control. – Patient 7.

Discussion

Dyspnoea experiences during the COVID-19 pandemic

The study indicated that most participants were afraid to come to the hospital before the appointment day as they were afraid of COVID-19 infection, poor control of diet and reducing HD sessions. This was due to CKD increasing the risk of mortality during the COVID-19 situation. CKD patients have several health conditions that make them a target group for the virus such as advanced age, comorbidities and low immunological system (Collado et al., 2020). Similarly, previous studies highlighted that patients who underwent HD treatment in dialysis centres have a high risk of acquiring the COVID-19 infection (Albalate et al., 2020; Goicoechea et al., 2020; Sánchez-Alvarez et al., 2020). In Thailand, patients on HD treatment have to come to crowded hospitals where there are a lot of infected patients. In addition, the epidemic prevention policy has impacted public health services by having separate dialysis centres for patients with COVID-19 infection (Alberici et al., 2020) as well as reducing the number of dialysis sessions (Rubin, 2020). Therefore, Thai people with HD treatment needed to manage themselves using several techniques to prevent dyspnoea during the COVID-19 pandemic.

Dyspnoea management during the COVID-19 pandemic

One of the most challenging aspects of being on HD treatment is the food and fluid restriction. All participants in the study have to more strictly control food and water consumption and have associated poor control in reducing HD sessions. As a result, the participants changed their food consumption behaviour. This is similar to the previous study that demonstrated that most participants who had more than 5 years of dialysis experience were able to manage themselves well to control pulmonary oedema. Therefore, good control of fluid and food intake helps them to manage their life with dyspnoea (Arammuang et al., 2012). In addition, all participants in the study applied religious practice to help them manage dyspnoea. Similarly, a study found that in Thailand 20 participants used various religious and spiritual coping strategies to manage HD-related fluid overload (Yodchai et al., 2014). Moreover, Thai HD patients received assistance with travel, meals, expenses and PPE from their family members such as spouses, children and grandchildren. According to Thai culture, family members need to take care of relatives

during times of illness. The study by Wongsree and Assalee (2016) illustrated that ESRD patients receive family support that can help them to manage their life crisis.

Conclusion

The study found that Thai participants were afraid to receive HD before their appointment related to feeling fear that COVID-19 infection could cause severe dyspnoea and death. The participants managed their life by changing dietary behaviour, applying religious teaching and receiving more help from their family members.

Acknowledgements

We are grateful to the patients receiving HD who willingly shared their experiences of dyspnoea and management strategies during the COVID-19 pandemic. In addition, we would like to thank the nursing staff of the three participating hospitals in southern Thailand for their kind assistance in recruiting participants.

Conflict of interest

The authors declare no conflicts of interest.

Funding

This research was supported by Prince of Songkla University (Grant No NUR6402015). ORCID iD: Kantaporn Yodchai <https://orcid.org/0000-0002-7864-1372>

References

- Albalate, M., Arribas, P., Torres, E., Cintra, M., Alcázar, R., Puerta, M.,... & Grupo de Enfermería HUIL. (2020). High prevalence of asymptomatic COVID-19 in hemodialysis. Daily learning during first month of COVID-19 pandemic. *Nefrología (English Edition)*, 40(3), 279–286. <https://doi.org/10.1016/j.nefro.2020.06.013>
- Alberici, F., Delbarba, E., Manenti, C., Econimo, L., Valerio, F., Pola, A., ... Brescia Renal COVID Task Force (2020). Management of patients on dialysis and with kidney transplantation during the SARS-CoV-2 (COVID-19) pandemic in Brescia, Italy. *Kidney international reports*, 5(5), 580–585. <https://doi.org/10.1016/j.ekir.2020.04.001>
- Arammuang, S., Sangkard, K., Kimpee, S., & Sriyuktasuth, A. (2012). Factors predicting fluid control behavior in chronic kidney disease patients receiving hemodialysis. *Nursing Science Journal of Thailand*, 30(3), 74–81. (in Thai).
- Collado, S., Arenas, M. D., Barbosa, F., Cao, H., Montero, M. M., Villar-García, J.,... & Pascual, J. (2020). COVID-19 in grade 4–5 chronic kidney disease patients. *Kidney & Blood Pressure Research*, 45(5), 768–774. <https://doi.org/10.1159/000511082>
- Crombeen, A. M., & Lilly, E. J. (2020). Management of dyspnea in palliative care. *Current Oncology*, 27(3), 142–145. <https://doi.org/10.3747/co.27.6413>
- Darsini, D., Notobroto, H. B., Afyah, R. K., Cahyono, E. A., Aryani, H. P., & Rahman, F. S. (2022). Quality of life of hemodialysis patients during COVID-19 pandemic in Gatoel Hospital, Mojokerto city. *Open Access Macedonian Journal of Medical Sciences*, 10(E), 293–302. <https://doi.org/10.3889/oamjms.2022.7583>
- Farinha, A. (2017). Symptom control in end stage renal disease. *Portuguese Journal of Nephrology & Hypertension*, 31, 192–199.
- Galczyk, M., Zalewska, A., Chlabicz, S., & Kopcych, B. E. (2022). Level of dyspnoea in patients with COVID-19 in Poland. *International Journal of Environmental Research and Public Health*, 19(19), 12203. <https://doi.org/10.3390/ijerph191912203>

- Goicoechea, M., Sánchez Cámara, L. A., Macías, N., Muñoz de Morales, A., Rojas, Á. G., Bascañana, A., . . . & Aragoncillo, I. (2020). COVID-19: clinical course and outcomes of 36 hemodialysis patients in Spain. *Kidney International*, 98(1), 27–34. <https://doi.org/10.1016/j.kint.2020.04.031>
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105–112. <https://doi.org/10.1016/j.nedt.2003.10.001>
- Kliger, A. S., & Silberzweig, J. (2020). Mitigating risk of COVID-19 in dialysis facilities. *Clinical Journal of the American Society of Nephrology: CJASN*, 15(5), 707–709. <https://doi.org/10.2215/CJN.03340320>
- Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.
- Rubin, R. (2020). Finding ways to reduce Coronavirus exposure during dialysis. *JAMA*, 323(20), 1993–1995. <https://doi.org/10.1001/jama.2020.6158> %J JAMA
- Sánchez-Alvarez, E., Macía, M., & de Sequera Ortiz, P. (2020). Management of hemodialysis patients with suspected or confirmed COVID-19 infection: Perspective from the Spanish nephrology. *Kidney360*, 1(11), 1254–1258. <https://doi.org/10.34067/KID.0002602020>
- Sirijatuphat, R., Suputtamongkol, Y., Angkasekwinai, N., Horthongkham, N., Chayakulkeeree, M., Rattanaumpawan, P., . . . Kantakamalukul, W. (2021). Epidemiology, clinical characteristics, and treatment outcomes of patients with COVID-19 at Thailand's university-based referral hospital. *BMC Infectious Diseases*, 21(1), 382. <https://doi.org/10.1186/s12879-021-06081-z>
- The Nephrology Society of Thailand. (2020). *Clinical practice guideline for hemodialysis with new normal*. Retrieved from https://www.nephrothai.org/wp-content/uploads/2020/08/NewNormalNST_edit.pdf
- Wongsaree, C. (2015). Hemodialysis nurses' role in prevention and management volume overload in end stage of renal failure patient on receiving hemodialysis. *Kuakarun Journal of Nursing*, 22(2), 30–40.
- Wongsree, C., & Assalee, R. (2016). Experience of using social support in end stage renal disease patients receiving hemodialysis. *Thai Red Cross Nursing Journal*, 9(2), 132–144. (in Thai)
- World Health Organization. (2022, December 1). Coronavirus disease 2019 (COVID-19) situation report – 97. Retrieved from https://www.who.int/docs/defaultsource/coronaviruse/situation-reports/20200426-sitrep-97-covid-19.pdf?sfvrsn=d1c3e800_6
- Yodchai, K., Dunning, T., Savage, S., Hutchinson, A. M., & Oumtane, A. (2014). How do Thai patients receiving haemodialysis cope with pain? *Journal of Renal Care*, 40(3), 205–215. <https://doi.org/10.1111/jorc.12073>