

A qualitative systematic review of mental health among haemodialysis patients.

Abstract

Background

A high proportion of HD patients suffer from mental health problems, which have been linked to reduced quality of life and treatment adherence, and increased morbidity and mortality.

Aims

To review the existing literature and synthesise the findings to better understand the adult patients' perspective on how outpatient HD affects their mental health.

Methods

A qualitative systematic review. Databases searched: CINAHL, PsycINFO and MEDLINE. Thematic synthesis was used.

Findings

Fifteen studies were included. The following key themes were identified: changed identities (coming to terms with HD, physical changes, role dysfunction), dependency on HD (treatment regime, restrictions), unanticipated futures (uncertainty, hopelessness, hope) and coping strategies (professional help, self-help).

Conclusion

Accounts of patients on HD suggest a 'biographical disruption' of all aspects of their lives: physical, social and psychological, which impact their mental health.

Keywords: haemodialysis, mental health, qualitative research, patient experience, thematic analysis

Introduction

Background

Transition onto haemodialysis (HD) can be difficult and requires time to adjust. HD carries significant lifestyle changes and has implications for both the physical and mental health of the patients (De Sousa 2008). In the context of this paper, mental health was considered a state of wellbeing where one can cope with normal stresses of life and realise one's abilities (WHO 2021). Most participants in the studies talked about anxiety and depression rather than serious mental health disorders.

As a result of the psychological impact of undergoing dialysis treatment depression, anxiety, low mood and suicide can occur (Ng *et al.* 2019). Although there is a lack of epidemiological data, self-reported prevalence data suggests that between 20% to 40% of haemodialysis patients suffer from depression (Palmer *et al.* 2013). Depression and anxiety are associated with lower quality of life (QoL) (CengiĆ and Resic 2010), lowered treatment adherence (Saglimbene *et al.* 2017) and increased morbidity and mortality (Drayer *et al.* 2006). Symptoms of depression can be similar to symptoms of uraemia, including sleep problems, fatigue and lack of appetite, making it more difficult to diagnose in HD patients (Chilcot *et al.* 2008; Drayer *et al.* 2006) as well as an increased chance of misdiagnosis.

Patient outcomes can be improved by providing holistic patient-centred care that addresses individual patient's needs, supports self-management and is more proactive than reactive (Coulter *et al.* 2013). Understanding the patients' perspective is essential as it can help to deliver holistic, more effective care. Patients' views and experiences are also recognised as important for policymaking (Harden *et al.* 2004).

Existing literature

Qualitative systematic reviews related to haemodialysis either focus on specific aspects like vascular access (Casey *et al.* 2014) or take a broader approach focusing on patients'

lived experience in general (Reid *et al.* 2016), but they fail to explore mental health in-depth.

Aim

To systematically review the existing literature to better understand the adult patients' perspective on how outpatient HD affects their mental health.

Methods

Research design

Thematic synthesis (Thomas and Harden 2008) was used for data analysis and synthesis. No protocol was submitted for this systematic review as it was completed as a part of a postgraduate degree. The study is reported following Enhancing Transparency in Reporting the Synthesis of Qualitative Research guidelines (Tong *et al.* 2012).

Eligibility criteria

The sample population were adults 18 years old and older, receiving clinic-based haemodialysis for treatment of chronic kidney disease (CKD). Views of patients on home dialysis (PD or HD), acute dialysis (for acute kidney injury) or transplant patients were excluded. Due to time constraints and convenience, studies were included if they were written in or translated to the English language. For the most up-to-date studies, the search was limited to studies published within the last 20 years (2001-2021).

Information sources

The following databases were searched between April and May 2021: CINAHL, PsycINFO and MEDLINE.

Search and selection strategy

The main categories searched were 'haemodialysis', 'mental health' and 'qualitative studies'. The use of synonyms and variances in spelling e.g., 'haemodialysis' and 'hemodialysis', were employed to increase the sensitivity of the search. The databases were searched for free text terms as well as Medical Subject Headings (MESH) terms. As different databases use various MESH terms, each search was adapted to reflect this. Boolean operators 'OR' and 'AND' were used. RefWorks software was used to manage the citations. The selection process was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) diagram (Moher *et al.* 2009) (see Figure 1).

Quality appraisal methods

Consolidated Criteria for Reporting Qualitative Research COREQ 32-item checklist (Tong *et al.* 2007) was used for quality appraisal. The checklist is designed for qualitative interview and focus group studies. It helps to appraise different aspects of studies such as the research team, study design, analysis and findings.

Data extraction

Data extraction was performed by the lead author and included: authors, year of publication, country and study setting, aims of the study, ethical issues, sampling approach, participant characteristics, data collection methods, data analysis approach, relevant themes and participant quotes from the study with author interpretations and relevant author conclusions, recommendations made by the authors, limitations and assessment of study quality.

Data analysis and synthesis methods

Thematic synthesis (Thomas and Harden 2008) was applied for data analysis and synthesis. NVivo software (version 12) was used to sort and manage the data. Themes

were developed inductively by the main author and were discussed and agreed with the second author using an iterative approach.

Results

Study selection

The search resulted in 831 hits. Fifteen studies were included. The study selection is presented in the PRISMA diagram (Figure 1).

[add Figure 1 here]

Study characteristics

An overview of the study characteristics is presented in Table 1. The studies were published between 2005 and 2020. The total number of HD participants was 276. Three studies did not state if the HD participants were male or female. One study explored the views of females only. In the remaining eleven studies there were 116 females and 133 males. Participants' age ranged from 18 to 88 years. Studies were conducted in Africa (n=2), Asia (n=6), Europe (n=4), North America (n=1) and South America (n=2).

Quality appraisal

As there is no clear guidance regarding excluding low-quality qualitative studies (Thomas and Harden 2008), the quality appraisal was used as a tool to identify the weaknesses rather than a way to exclude a study based on low quality. The included studies scored from 15/32 to 27/32. The main weaknesses were limited information about the personal characteristics of the research team and their relationship with the participants.

Analysis and synthesis of results

The authors were in agreement regarding the coding frame and themes, following a discussion regarding the content of the extracted data, language and overarching theme. The initial analysis conducted by the main author resulted in 68 codes. Four clear recurring topics emerged: effects on mental health, coping, factors impacting mental health and life circumstances affected. The codes were then grouped into themes of different effects on patient's lives and how various aspects of HD impacted participants' mental health, and coping strategies. The synthesis of the data resulted in ten descriptive themes, which were then developed into four analytical themes: changed identities, dependency on HD, unanticipated futures and coping strategies. The themes were encompassed by an overarching theme of 'biographical disruption'. The themes and contributing codes are presented in Table 2.

As the codes were interrelated, it was not possible to clearly separate the themes. Some elements of HD were found to affect multiple aspects of participants' lives that impacted their mental health.

CHANGED IDENTITIES

Coming to terms with HD

Participants expressed strong emotions regarding the need to start HD. The emotions ranged from shock and denial at the initial diagnosis, especially if there was a lack family history of CKD (Yu and Petrinin 2010), grief and depression related to perceived loss of control and of healthy bodies (Kaba *et al.* 2007; Lai *et al.* 2012; Santos *et al.* 2020; Yu and Petrinin 2010), to suicidal ideations (Salimena *et al.* 2016).

At first, I did not believe what the physician said to me at all. (Yu and Petrinin 2010)

Although, some participants reported being more positive as HD was making them feel better (Jones *et al.* 2018; Niu and Liu 2016; Yu and Petrinin 2010).

Physical changes

Participants expressed feelings of stress, anxiety and depression regarding the change in appearance, often related to fistulas, and physical symptoms, like tiredness and fatigue (Cox *et al.* 2017; Jones *et al.* 2018; Niu and Liu 2016; Unsal Avdal *et al.* 2020), impacting on the ability to perform daily tasks and socialising. Physical changes were reported to lead to lowered self-esteem and increased isolation (Jones *et al.* 2018; Niu and Liu 2016; Unsal Avdal *et al.* 2020).

I no longer have the energy to do anything - talk, walk, or communicate (...) My life now just consists of dialysis and other medical treatments. (Niu and Liu 2016)

Role dysfunction

Physical limitations and dependency on treatment often led to an inability to fulfil perceived social roles (Herlin and Wann-Hansson 2010; Jones *et al.* 2018; Niu and Liu 2016; Yu and Petrinin 2010), including roles within the family (Chiaranai 2016; Unsal

Avdal *et al.* 2020) and work (Harilall and Kasiram 2011; Yu and Perinin 2010).

Participants reported feeling “burned out”, guilty, helpless and frustrated.

Hemodialysis on top of everything really depleted me. I could not do chores as I used to and I was not enough for my children and husband. I was burned out to put it simply (Unsal Avdal *et al.* 2020)

DEPENDENCY ON HD

Treatment regime

Many participants found it emotionally difficult to depend on HD due to uncertainty of the disease and treatment (Sahaf *et al.* 2017), the fear of HD access failing (Hagren *et al.* 2005; Herlin and Wann-Hansson 2010) and pain of cannulation (Lai *et al.* 2012; Niu and Liu 2016). Furthermore, dependency on healthcare professionals led some participants to feel helpless and vulnerable (Hagren *et al.* 2005). Participants also reported anger and frustration related to the time ‘lost’ on HD (Jones *et al.* 2018).

The only thing that makes me feel depressed is that I gotta be here (...) I could be doing so much more and this is my way to live, and if I’m not here I’ll die. (Cox *et al.* 2017)

Restrictions

Food and fluid restrictions were reported to be additional sources of anger and frustration (Achempim-Ansong and Donkor 2012; Chiaranai 2016; Lai *et al.* 2012). Participants described feeling despair as they were not able to enjoy their food.

It is very difficult to maintain correct eating habits. (...) It seems like I cannot have human food. What a horrible life! (Chiaranai 2016)

UNANTICIPATED FUTURES

Uncertainty

Participants reported negative feelings related to uncertainty regarding their future. Many had to change their plans when they started HD. The unpredictability of the disease and dependency on HD made it difficult for participants to plan their future and induced feelings of uncertainty, which often led to frustration and hopelessness (Chiaranai 2016; Cox *et al.* 2017; Harilall and Kasiram 2017; Jones *et al.* 2018; Kaba *et al.* 2007; Niu and Liu 2016; Sahaf *et al.* 2017; Unsal Avdal *et al.* 2020).

You cannot plan for anything, and your whole life is mixed up. (...) Well, that ruins your life (Sahaf *et al.* 2017)

Hopelessness

HD was reported to limit the participants' ability to do things they would normally do, like travel, which adversely impacted their mental health (Jones *et al.* 2018; Lai *et al.* 2012; Niu and Liu 2016; Sahaf *et al.* 2017; Yu and Petrinin 2010) and social lives (Jones *et al.* 2018). Inability to be spontaneous was linked to increased hopelessness and depression (Jones *et al.* 2018).

You'd love to say "Oh yes I'll go off to get the bus to Newbury". But you can't do that I'm at RBH tomorrow for dialysis. And that sort of gets depressing, makes you depressed (Jones *et al.* 2018)

In extreme cases, the perspective of lifelong HD made participants contemplate stopping HD and ending their lives (Jones *et al.* 2018; Lai *et al.* 2012; Santos *et al.* 2020).

Hope

On the other hand, some participants expressed feeling more hopeful if they were able to receive a transplant. Although they reported anxiety associated with not knowing when

and if it will happen, a transplant was seen as a way to reclaim the future (Chiaranai 2016; Kaba *et al.* 2007; Lai *et al.* 2012; Yu and Petrinin 2010). Another aspect that gave participants hope was their family and looking forward to family events in the future (Chiaranai 2016; Kaba *et al.* 2007; Niu and Liu 2016).

I had a daughter. She gave me hope, and I had to live to see her go to college
(Niu and Liu 2016)

COPING STRATEGIES

Professional help

Professional help for mental health mentioned by the participants included medication and counselling. However, many participants felt apprehensive about it (Cox *et al.* 2017).

I don't find it necessary to go and broadcast my issues with everybody. I might bring it up in passing with my mom or my sister but it's not like...I don't find it necessary to go talk to a counselor. You just kind of deal with it (Cox *et al.* 2017)

Self-help

Self-help strategies reported by participants included staying active, pursuing hobbies, spirituality and family support (Cox *et al.* 2017; Hagren *et al.* 2005; Jones *et al.* 2018; Niu and Liu 2016; Salimena *et al.* 2016; Yu and Petrinin 2010).

Actually 2 weeks ago I was on the verge of giving it up, I didn't want to do dialysis anymore. My family nagged me and now I am back on dialysis (Jones *et al.* 2018)

BIOGRAPHICAL DISRUPTION WITHIN THE CONTEXT OF HD

Together, the qualitative accounts demonstrate how the life of a person on HD can change dramatically. Reported changes to identities and imagined futures, along with dependency on HD for survival and the need for coping strategies, can be interpreted and encompassed in an overarching theme of 'biographical disruption', a concept first described by Bury (1982). Biographical disruption refers to an event that significantly impacts an individual's life and changes its direction (Pranka 2018).

Participants' biographies were disrupted by the need to adjust to their new identities, where they depend on HD and other people to manage their chronic illness. This disruption can lead to anxiety and requires emotional work to manage.

Discussion

The findings of this review demonstrate that coming to terms with HD can be challenging and the experience of haemodialysis life-changing. It may lead to feelings of loss of control and depression. Many patients with CKD react to the need for dialysis with denial and anxiety. Family history of CKD can lessen those emotions (Niu and Liu 2016; Yu and Petrinin 2010).

An individual's perception of their illness has a psychological component (Chilcot et al. 2013; Clarke et al. 2016), for example, some HD patients adopt an optimistic approach to the disease as they see HD as a way to prolong their lives. Others struggle to accept their new restricted lives and fall into despair and depression. In severe cases, patients consider declining HD.

Bodily changes, like creation of an arteriovenous fistula, can cause further upset in the individual's life. Some patients find fistulas embarrassing, which can lead to lowered self-esteem, negative effects on social lives and loneliness. These findings are consistent with other studies (Hara *et al.* 2018). Furthermore, the loss of previous physical function can lead to grief and a change of self-perception (Charmaz 1995; Holland *et al.* 2016). Individuals transition from having a body that they perceived as functioning to a body that

needs to be sustained by HD. Feelings of loss and grief can lead to depression and suicidal thoughts.

The physical changes and dependency on HD disrupts the person's ability to fulfil their normal social roles. Many people are unable to work, fulfil family responsibilities or carry out daily chores, which can make them frustrated and feeling like a burden. The physical limitations and dependability on others also limit the ability to go out and carry out social activities leading to isolation (Bury 1982). The person's view of how society perceives them affects their self-identity (Karnilowicz 2011). This role dysfunction might therefore make it difficult for individuals to find their identity and see themselves as more than just a patient. This can lead to feelings of hopelessness and depression.

The dependency on HD is another major disruption in the individual's life and carries a psychological burden. To a great degree, the individual's life now consists of dialysis sessions and other hospital appointments. Other research confirms that such a high level of dependency on a machine is very stressful (De Sousa 2008). Frustration and anger also come from a feeling of lost time and wasting life being on treatment. It can be further exacerbated by delays in treatment or transport.

Patients also depend on healthcare professionals, which can lead to feelings of helplessness. External locus of control leads to increased depression and anxiety (Chilcot *et al.* 2008). One of the main concerns is cannulation of the fistula. It is related to fear of pain and anxiety. Healthcare professionals can struggle with cannulation, which in turn can cause more pain and delayed treatment. Moreover, the fear of loss of HD access can lead to anxiety and feeling uncertain about the future. The access is a lifeline for people on HD and if it was to fail, they might not be able to receive treatment, which would result in their death.

Dietary restrictions are also another source of frustration and anger. It is yet another aspect of their lives they need to relinquish, which makes them enjoy their lives less.

Food and fluid restrictions also impact individuals' social lives. Patients can fear a lack of understanding from others, leading to increased loneliness. Therefore, many HD patients end up weighing up adherence of dietary restrictions against its impact on their quality of life (Reid *et al.* 2016).

Patients on HD also need to come to terms with a future they did not anticipate. Many are forced to change their plans, which can lead to frustration and hopelessness. Other studies also report grief related to loss of planned futures in patients with chronic illness (Holland *et al.* 2016). Another aspect of unpredictability is HD itself. Patients can experience symptoms like cramps, headache, nausea and a significant drop in blood pressure leading to unresponsive episodes. Some fear how the treatment will go and, in extreme cases, fear dying on HD.

Study participants also reported emotional distress related to the inability to be spontaneous and to travel. It can impact the individual's ability to visit friends and family that live further away leading to increased loneliness and depression. It also takes away something to look forward to in the future increasing hopelessness and depression. Inability to be spontaneous due to physical limitations and dependency on others is not uncommon in chronic illness (Whittemore and Dixon 2008). It can further move the locus of control to external factors and negatively affect mental health.

Most HD patients are likely to be on dialysis for the rest of their lives. The inevitability of HD can induce feelings of hopelessness and depression. Family support seems to be a crucial factor in deciding to persevere with HD. It can also be a source of hope and comfort. Family events can give the individual something to look forward to. Some patients are also able to find optimism in the hope for a transplant. However, it also comes with a level of anxiety and uncertainty as it is hard to predict when and if the transplant will happen.

Biographical disruption requires mobilisation of resources to cope with the disruption (Bury 1982). Participants reported being more likely to talk to a family member or a friend about their problems rather than seek professional help (Cox *et al.* 2017). It might be because HD patients often feel 'over-doctored' with all the hospital appointments they already have (De Sousa 2008). Another way to manage mental health problems is medication. Although some HD patients find it helpful, others fear they will get addicted or find the medication ineffective. Due to renal impairment, there are limited antidepressant clinical trials that include end-stage kidney disease patients on dialysis, making them likely to be overmedicated or undermedicated (Hedayati *et al.* 2012; Palmer *et al.* 2016). Many participants reported using self-help (Cox *et al.* 2017; Hagren *et al.* 2005; Jones *et al.* 2018; Niu and Liu 2016; Salimena *et al.* 2016; Yu and Petrinin 2010). Being able to stay active or pursue a hobby tends to be a common self-help strategy. Some people also find support in spirituality as it helps them to accept the illness. However, it has been suggested that many HD patients deny there is anything wrong with their mental health, which makes it even more difficult to try and support them (De Sousa 2008).

Implications for practice

Starting HD is a significant life change, hence support in adapting to it is necessary. Patients would benefit from a holistic assessment and care plan, including mental health, family support and social circumstances, so their biopsychosocial needs can be addressed. HD disrupts all aspects of the patients' lives, which in turn can affect their long-term mental health. Encouraging self-management can help individuals feel more in control of their lives and improve their psychological wellbeing. As patients spend a considerable amount of time on treatment and may feel over-doctored, they might be more likely to accept psychological interventions while they are on HD. Healthcare professionals working with HD patients every day have the potential for building

therapeutic relationships with patients. It is therefore important that they can recognise the signs of mental distress and can address them through regular screening.

Implications for further research

More research is needed on the impact of HD on mental health from the patients' perspective. There needs to be a better understanding of the impact of HD in the initial stages (for example, in the first six months of treatment) as this could help patients adapt to their changing situation. There also needs to be more research on the effects of being on HD long term as the inevitability of a lifelong dependency on HD seems to be one of the most significant burdens. More research on the effects of HD on the mental health of family members and partners would also be beneficial to examine the wider impacts of HD on families.

Strengths and limitations

As this review was conducted as part of a Master's in Research (MRes) educational course, the review was primarily conducted by one person, was limited to three databases and only included studies in English. Another limitation is the small number of studies included in this review, reducing the transferability and generalisability of the findings. Furthermore, the diverse study settings and populations means that interpretation of the findings should be considered within their cultural context. The impacts of the disease are felt differently in different cultures and in countries with vastly different incomes and healthcare systems.

A potential strength is the main author's experience as a renal nurse and her knowledge and experience of the topic as well as the second author's knowledge and experience as a mental health nurse.

Conclusion

This review explored the impact of HD on the mental health of patients, from an adult patient's perspective. Patients on HD are faced with a biographical disruption that can adversely affect their mental health. HD patients expressed mental health problems related to their identity change, dependency on HD, unanticipated future and coping/support needs. HD disrupts all aspects of the individual's life: physical, social and psychological, which can lead to emotional distress. Coping strategies often involve self-help, however, some patients also reported receiving professional help. Mental health issues experienced by HD patients include depression, anxiety, anger, fear, grief, frustration, vulnerability, helplessness and hopelessness. Understanding the patient's perspective on their mental health is important in providing person-centred support for their adjustment to HD, including treatment for anxiety and depression, family support and social support, depending on their assessment needs. Therefore, more research on this topic is needed to inform and improve clinical practice.

CPD REFLECTIVE QUESTIONS:

1. Do you regularly screen patients in your unit for mental health issues/needs? If not, how could it be implemented?
2. What mental health problems are experienced by patients in your unit? How does HD impact it?
3. What mental health support is available for patients in your unit? What could be done to improve it?

References

Achempim-Ansong G, Donkor ES. 2012. Psychosocial and Physical Experiences of Haemodialysis Patients in Ghana. *Africa Journal of Nursing & Midwifery*. 14(1):38-48.

Bury M. 1982. Chronic illness as biographical disruption. *Sociology of Health & Illness*. 4(2):167-182.

Casey JR, Hanson CS, Winkelmayr WC, Craig JC, Palmer S, Strippoli GFM, Tong A. 2014. Patients' Perspectives on Hemodialysis Vascular Access: A Systematic Review of Qualitative Studies. *American Journal of Kidney Diseases*. 64(6):937-953.

Cengić B, Resić H. 2010. Depression in hemodialysis patients. *Bosnian Journal of Basic Medical Sciences*. 10 Suppl 1:S73-S78.

Charmaz K. 1995. The Body, Identity, and Self: Adapting to Impairment. *The Sociological Quarterly*. 36(4):657-680.

Chiaranai C. 2016. The Lived Experience of Patients Receiving Hemodialysis Treatment for End-Stage Renal Disease: A Qualitative Study. *Journal of Nursing Research*. 24(2):101-108.

Chilcot J, Wellsted D, Da Silva-Gane M, Farrington K. 2008. Depression on Dialysis. *Nephron Clinical Practice*. 108(4):c256-c264.

Chilcot J, Norton S, Wellsted D, Davenport A, Firth J, Farrington K. 2013. Distinct Depression Symptom Trajectories over the First Year of Dialysis: Associations with Illness Perceptions. *Annals of Behavioral Medicine*. 45(1):78-88.

Clarke AL, Yates T, Smith AC, Chilcot J. 2016. Patient's perceptions of chronic kidney disease and their association with psychosocial and clinical outcomes: a narrative review. *Clinical Kidney Journal*. 9(3):494-502.

Coulter A, Roberts S, Dixon A. 2013. Delivering better services for people with long-term conditions: Building the house of care. London: The King's Fund; [accessed: 30 July 2021]. https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/delivering-better-services-for-people-with-long-term-conditions.pdf

Cox KJ, Parshall MB, Hernandez SHA, Parvez SZ, Unruh ML. 2017. Symptoms among patients receiving in-center hemodialysis: A qualitative study. *Hemodialysis International. International Symposium on Home Hemodialysis*. 21(4):524-533.

Hagren B, Pettersen I, Severinsson E, Lütznén K, Clyne N. 2005. Maintenance haemodialysis: patients' experiences of their life situation. *Journal of Clinical Nursing*. 14(3):294-300.

Hara Y, Sonoda K, Hashimoto K, Fuji K, Yamada Y, Kamijo Y. 2018. Influence of arteriovenous fistula on daily living behaviors involving the upper limbs in hemodialysis patients: a cross-sectional questionnaire study. *BMC Nephrology*. 19(1):284.

Harden A, Garcia J, Oliver S, Rees R, Shepherd J, Brunton G, Oakley A. 2004. Applying systematic review methods to studies of people's views: an example from public health research. *J Epidemiol Community Health*. 58(9):794.

Harilall B, Kasiram M. 2011. Exploring the bio-psychosocial effects of renal replacement therapy amongst patients in a state hospital in South Africa. *Health SA Gesondheid*. 16(1):1-10.

Hedayati SS, Yalamanchili V, Finkelstein FO. 2012. A practical approach to the treatment of depression in patients with chronic kidney disease and end-stage renal disease. *Kidney International*. 81(3):247-255.

Herlin C, Wann-Hansson C. 2010. The experience of being 30-45 years of age and depending on haemodialysis treatment: a phenomenological study. *Scandinavian Journal of Caring Sciences*. 24(4):693-699.

Holland JM, Graves S, Klingspon KL, Rozalski V. 2016. Prolonged grief symptoms related to loss of physical functioning: examining unique associations with medical service utilization. *Disability & Rehabilitation*. 38(3):205-210.

Jones DJW, Harvey K, Harris JP, Butler LT, Vaux EC. 2018. Understanding the impact of haemodialysis on UK National Health Service patients' well-being: A qualitative investigation. *Journal of Clinical Nursing (John Wiley & Sons, Inc.)*. 27(1-2):193-204.

Kaba E, Bellou P, Iordanou P, Andrea S, Kyritsi E, Gerogianni G, Zetta S, Swigart V. 2007. Renal nursing. Problems experienced by haemodialysis patients in Greece. *British Journal of Nursing*. 16(14):868-872.

Karnilowicz W. 2011. Identity and psychological ownership in chronic illness and disease state. *European Journal of Cancer Care*. 20(2):276-282.

Lai AY, Loh APP, Mooppil N, Krishnan DSP, Griva K. 2012. Starting on haemodialysis: A qualitative study to explore the experience and needs of incident patients. *Psychology, Health & Medicine*. 17(6):674-684.

Moher D, Liberati A, Tetzlaff J, Altman DG. 2009. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med*. 6(7): e1000097.

Ng CZ, Tang SC, Chan M, Tran BX, Ho CS, Tam WW, Ho RC. 2019. A systematic review and meta-analysis of randomized controlled trials of cognitive behavioral therapy for hemodialysis patients with depression. *Journal of Psychosomatic Research*. 126:pp 109834.

Niu H, Liu J. 2016. The psychological trajectory from diagnosis to approaching end of life in patients undergoing hemodialysis in China: A qualitative study. *International Journal of Nursing Sciences*. 4(1):29-33.

Palmer S, Vecchio M, Craig JC, Tonelli M, Johnson DW, Nicolucci A, Pellegrini F, Saglimbene V, Logroscino G, Fishbane S, Strippoli GF 2013. Prevalence of depression in chronic kidney disease: systematic review and meta-analysis of observational studies. *Kidney international*. 84(1), 179–191.

Palmer SC, Natale P, Ruospo M, Saglimbene VM, Rabindranath KS, Craig JC, Strippoli G. 2016. Antidepressants for treating depression in adults with end-stage kidney disease treated with dialysis. *Cochrane Database of Systematic Reviews*. (5).

Pranka M. 2018. Biographical disruption and factors facilitating overcoming it. *SHS Web Conf*. 51.

Reid C, Seymour J, Jones C. 2016. A Thematic Synthesis of the Experiences of Adults Living with Hemodialysis. *Clin j Am Soc Nephrol*. 11(7):1206.

Saglimbene V, Palmer S, Scardapane M, Craig JC, Ruospo M, Natale P, Gargano L, Leal M, Bednarek-Skublewska A, Dulawa J, et al.. (2017) Depression and all-cause and cardiovascular mortality in patients on haemodialysis: a multinational cohort study. *Nephrology Dialysis Transplantation*, 32 (2), pp. 377-384.

Sahaf R, Ilali ES, Peyrovi H, Akbari Kamrani AA, Spahbodi F. 2017. Uncertainty, the Overbearing Lived Experience of the Elderly People Undergoing Hemodialysis: A Qualitative Study. *International Journal of Community Based Nursing & Midwifery*. 5(1):13-21.

Salimena AMDO, Souza MO, de Melo SC, Carmen M, Ferreira MR. 2016. Daily life of a woman undergoing hemodialysis. *Revista De Pesquisa: Cuidado e Fundamental*. 8(3):4636-4643.

De Sousa A. 2008. Psychiatric issues in renal failure and dialysis. *Indian Journal of Nephrology*. 18(2):47-50.

Santos GLC, Alves TF, Quadros DCR, Giorgi MDM, Paula DM. 2020. The Person's Perception about its Condition as a Chronic Renal Patient in Hemodialysis. *Revista De Pesquisa: Cuidado e Fundamental*. 12(1):636-641.

Thomas J, Harden A. 2008. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*. 8(1):45.

Tong A, Flemming K, McInnes E, Oliver S, Craig J. 2012. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Medical Research Methodology*. 12(1):181.

Tong A, Sainsbury P, Craig J. 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 19(6):349-357.

Unsal Avdal E, Ayvaz İ, Özgursoy Uran BN, Yildirim JG, Sofulu F, Pamuk G. 2020. Opinions of hemodialysis and peritoneum patients regarding depression and psychological problems which they experience: A qualitative study. *Journal of Infection and Public Health*. 13(12):1988-1992.

Whittemore R, Dixon J. 2008. Chronic illness: the process of integration. *Journal of Clinical Nursing*. 17(7):177-187.

WHO 2021 Comprehensive mental health action plan 2013–2030. Geneva: World Health Organization.

Yu H, Petrini MA. 2010. The HRQoL of Chinese patients undergoing haemodialysis. *Journal of Clinical Nursing*. 19(5-6):658-665.