The value of dialysis and conservative care for older patients with advanced chronic kidney disease

Verberne, W.R.

Citation

Verberne, W. R. (2021, October 14). *The value of dialysis and conservative care for older patients with advanced chronic kidney disease*. Retrieved from https://hdl.handle.net/1887/3217180

9

General discussion

INTRODUCTION

The first main objective of this thesis was to determine the value of dialysis and conservative care for older patients with advanced chronic kidney disease. To do so, we compared a combination of patient-relevant outcomes and treatment costs in a cohort of older patients (≥70 years old) who chose either dialysis or conservative care after a shared decision-making process. We also participated in the development of a consensus recommendation on a standardized minimum set of outcomes that matter to patients with chronic kidney disease. The second main objective of this thesis was to evaluate and improve shared decision-making regarding treatment plan in older patients with advanced chronic kidney disease. Finally, in this chapter, we summarize our main findings, discuss their strengths and limitations, and describe implications and future directions for research and clinical care.

SUMMARY OF MAIN FINDINGS

Defining the outcomes that matter

In **Chapter 2**, we developed a standardized minimum set of patient-relevant outcomes for chronic kidney disease care in collaboration with a multidisciplinary working group of healthcare professionals and patient representatives, initiated by the International Consortium for Health Outcomes Measurement (ICHOM). We focused on outcomes relevant to all patients with very high risk chronic kidney disease (stages G3a/A3 and G3b/A2 to G5) and to treatment-specific subgroups (hemodialysis, peritoneal dialysis, kidney transplantation, and conservative care). The outcomes were selected on the basis of patient input, literature reviews, assessment of registries, expert consensus, and external review surveys among patients and healthcare professionals. The final set includes outcomes that are important to patients but that are less routinely collected, such as outcomes on health-related quality of life, which were rated as most important by patients, next to more traditional outcomes such as survival and kidney function.

Defining the outcomes that matter to patients and other stakeholders is needed to enable standardization of health outcome measurement in different settings [1]. For research settings, the need for standardization of outcome measurement in chronic kidney disease has been recognized by the Standardised Outcomes in Nephrology (SONG) initiative [2-5]. Our work is a multinational effort to recommend a standardized minimum set of patient-relevant outcomes for chronic kidney disease care and is targeted for use in routine clinical practice. The set includes patient-reported outcome measures (PROMs) and also a minimum set of demographic and clinical factors recommended for case-mix adjustment to enable meaningful comparisons across different settings.

Determining the value of dialysis and conservative care

Survival

In **Chapter 3**, we determined survival outcomes in a retrospective cohort of older patients (≥70 years old) with advanced chronic kidney disease who had chosen to be treated with dialysis or conservative care after a shared decision-making process. Overall, we observed that older patients who chose dialysis lived longer compared with older patients who chose conservative care. There was, however, little or no significant survival advantage in patients aged ≥80 years old and patients aged ≥70 years old with severe comorbidity who chose dialysis over conservative care. This was observed from treatment decision and different levels of disease severity, including an eGFR <20, <15, and <10 mL/min/1.73 m^2. In **Chapter 4,** we found similar results on survival in an extended patient cohort with longer follow-up time.

Our findings on survival are consistent with results from previous studies and are the first validation in a Dutch population, confirming that both increasing age and comorbidity level offset the survival advantage of older patients choosing dialysis over conservative care [6-8]. While a cut-off level for age or comorbidity score might feel useful to help identify which patients are more likely to benefit from dialysis or not in terms of survival, there is great risk of oversimplifying decision-making, for example by overlooking relevant individual factors and personal considerations about what matters. Moreover, appropriate comparison of results across studies is difficult due to substantial differences in study design (*e.g.*, use of different time points for survival analysis) and heterogeneous patient populations [9, 10]. We therefore think that the most appropriate conclusions on survival in older patients with advanced chronic kidney disease so far are that: (1) increasing age and comorbidity level are associated with a decreasing survival advantage in older patients choosing dialysis over conservative care; and that (2) the overall survival advantage of older patients choosing dialysis over conservative care is no longer significant in patients with the highest ages or severe comorbidity.

Health-related quality of life and symptoms

In **Chapter 4,** we determined health-related quality of life outcomes and symptoms in a cross-sectional way in a small subset of our patient cohort (≥70 years old), using the Kidney Disease Quality of Life Short Form [11]. In **Chapter 5**, we systematically reviewed all available data on health-related quality of life and symptoms so far in patients who chose either a dialysis or conservative care pathway for advanced chronic kidney disease. Overall, we identified eleven studies, including our study described in **Chapter 4 and 4a** [8, 12-22]. All studies included were observational cohort studies that were generally small-scale and of suboptimal study quality, being susceptible to selection bias and confounding. We found no randomized controlled trials. Despite considerable clinical and methodological heterogeneity, the results on health-related quality of life and symptoms were broadly consistent among the studies. Physical health outcomes and symptom burden appeared to be worse in patients who chose conservative care compared with patients who chose dialysis but were not started yet. However, we observed similar physical health outcomes and symptom burden between patients who chose conservative care when compared with patients on dialysis. Mental health outcomes were also similar between patients who chose a conservative care or dialysis pathway, whether before or after dialysis start. In patients who chose dialysis, the scores on 'Burden of kidney disease' and 'Impact on daily life' worsened after dialysis start. Taken together, the currently available data suggest that conservative care has potential to achieve similar health-related quality of life and symptoms compared with a dialysis pathway in selected older patients.

Hospital utilization

In **Chapter 4**, we determined treatment burden related to hospital utilization in our cohort of older patients (≥70 years old) who chose dialysis or conservative care. Hospital utilization was substantially lower in patients who chose conservative care compared with patients who chose dialysis. This difference included less frequent outpatient visits, hospital admissions, and in-hospital days as well as no in-center hemodialysis days, resulting in more hospital free days in older patients who chose conservative care. In **Chapter 6**, we further evaluated hospital utilization in our patient cohort. In the final months of life, we observed similar patterns of less intensive outpatient and inpatient hospital utilization in patients who chose conservative care compared with patients who chose dialysis. Furthermore, patients who chose conservative care died less frequently in hospital than patients who chose dialysis. These findings were consistent with the limited available data on hospital utilization in this patient population [15, 23-28], while adding insight in both outpatient and inpatient utilization and patterns near the end of life.

Hospital costs

In **Chapter 4**, we also determined hospital costs in our cohort of older patients (≥70 years old) with advanced chronic kidney disease. Hospital costs were substantially lower in patients on a conservative care pathway compared with patients on a dialysis pathway. This finding was consistent with the very limited available data [26, 29, 30]. In **Chapter 6**, we further evaluated hospital costs in our patient cohort and observed that both overall and non-dialysis-related costs were lower in patients on a conservative care pathway compared with patients on a dialysis pathway. We also found lower hospital costs in patients on conservative care in the final months of life. These findings suggest that older patients who decide to forego dialysis and choose conservative care, despite being generally older and more frail, have no higher hospital resource needs but, on the contrary, have substantial less intensive patterns of hospital utilization and hospital costs compared with older patients who choose a dialysis pathway.

Value of dialysis and conservative care

In **Chapter 3, 4, 5 and 6**, we studied a combination of patient-relevant outcomes and treatment costs to assess the value of dialysis and conservative care for older patients with advanced chronic kidney disease. Taken together, we showed that selected patients aged ≥70 years old who chose conservative care instead of a dialysis pathway achieved similar outcomes on survival, health-related quality of life, and symptoms in combination with lower treatment burden and treatment costs. This was particularly observed in patients with the highest ages or severe comorbidity. By shared decision-making about treatment plan in this older patient population, value of care was generated for both patients and society: (1) for patients in terms of patient-relevant outcomes in balance with treatment burden; and (2) for society in terms of patient-relevant outcomes per monetary unit spent.

Improving shared decision-making

Older patients' experiences

In **Chapter 7**, we determined older patients' experiences with shared decision-making on treatment for advanced chronic kidney disease. Older patients indicated to be overall satisfied with their shared decision-making process and treatment decision in favour of either dialysis or conservative care. However, we observed a discrepancy between the high satisfaction and underlying negative experiences that older patients reported as well, especially patients who had chosen dialysis. Such negative experiences were related to the timing, informing, and level of decision-making being shared, and suggested important and modifiable barriers to an optimal shared decision-making process. We also observed that older patients had contrasting reasons for their treatment decision. Moreover, patients often considered their personal values and goals towards life, quality of life, and death of more importance than biomedical factors such as treatment effectiveness on which nephrologists predominantly base their recommendation [31-33]. We therefore concluded that early initiation of decision-making is needed as in advance care planning and that shared decision-making should entail a dynamic process instead of a single point in time that is based on a person-centered approach.

Towards a person-centered conception of shared decision-making

Following our results in Chapter 7 and based on wider observations of decision-making experiences described by patients [31, 34-37], we aimed to improve shared decision-making about treatment plan for advanced chronic kidney disease in older patients. In **Chapter 8**, we reconsidered how decision-making could become more shared and argued the need for a shift from a biomedical conception to a person-centered conception, as has been proposed for patients with multiple comorbid conditions and other complex chronic care contexts [38-41]. A person-centered conception emphasizes the need to learn about the person behind the patient, in order to empower the person to actively take part in finding ways to achieve the goals that matter to that person [42-44]. Such conception needs the patient and healthcare professional to gain understanding of what matters to the patient first, by involving the patient's expertise based on their lived experience, next to the healthcare professional's expertise. Shared, therefore, does not imply two persons considering the same perspective but rather two perspectives, that both need to be explored during the decision-making process. Starting from the patient's perspective is likely to enable a more open-ended dialogue about all that matters to the patient as person. Thereby, the patient and healthcare professional become able to determine the goals of care, followed by what options could help best for achieving those goals. Hence, a person-centered orientation involves a shift from figuring out "What is the matter with you?" and the aim to fix that, to "What matters to you?" in order to determine the best way to act [45, 46]. Especially in complex chronic care contexts, such a goal-based approach could help to align care more with personal priorities and, overall, to help consider the best way to enable the older and often frail patient to do the things in life that matter to them and support the patient to be resilient and adaptive given their situation [47-49].

STRENGTHS

Patient cohort

A strength of our studies described in **Chapter 3, 4, 6 and 7** is the availability of a cohort of older patients who chose either dialysis or conservative care after a shared decision-making process. To identify this cohort, we carefully reviewed all patients with advanced chronic kidney disease who received nephrology care between October 31, 2004 and May 1, 2016 in a non-academic teaching hospital. We included the patients aged ≥70 years old who had made an explicit decision on treatment plan after a shared decision-making process, in which an experienced and multidisciplinary team of nephrologists, nephrology nurses, social workers, and dieticians was involved. Our cohort appeared to consist of one of the largest groups of patients who chose conservative care reported so far. We also identified the first Dutch patient cohort.

Patient-relevant outcomes

Another strength is our evaluation of outcomes that matter to older patients choosing dialysis or conservative care, including survival but also health-related quality of life, symptoms, and treatment burden (**Chapter 3, 4, 5 and 6**). The need for more patient-relevant data on both treatment pathways has been recognized as research priority by patients, clinicians, and organizations like Kidney Disease: Improving Global Outcomes (KDIGO) [50-53]. We also contributed to an internationally accepted standardized approach towards collection of patient-relevant outcomes in chronic kidney disease care (**Chapter 2**). So far, data collection in chronic kidney disease care have been restricted, next to survival, to intermediate and process outcomes that are easily accessible, such as biochemical parameters. Furthermore, we partnered with patients and patient representatives during several studies to involve and learn from their perspectives, including on study design, development of a questionnaire, and interpretation of study results (**Chapter 2, 4, 5, 6 and 7**).

LIMITATIONS

Observational study design

A limitation of our studies on dialysis and conservative care is their observational design (**Chapter 3, 4, 5, 6 and 7**), similar to all studies in this field so far. An observational study design brings the risk of treatment allocation bias and confounding due to the non-random treatment decision. Since patients are likely to have specific reasons to choose dialysis or conservative care [31, 34], this may have resulted in substantial differences in characteristics between both patient groups which, in return, could explain observed differences in outcomes. In our patient cohort, we observed no or only little differences in most characteristics between both patient groups, including in comorbidity scores. However, patients who chose dialysis were considerably younger compared with patients who chose conservative care. This may have resulted in a biased comparison of outcomes in the younger and likely more fit patients choosing dialysis compared with the older and likely less fit patients choosing conservative care. This, on the other hand, makes the observed similarities in outcomes between both patient groups even more remarkable. To overcome potential bias due to confounding, we adjusted for several confounders including age and comorbidity in multivariable regression models. However, residual confounding by unmeasured or unknown determinants is likely, such as functional status, nutritional status, and cognitive function.

Small sample size

Bias could also be present due to the small sample size of the study populations included in **Chapter 3, 4, 5, 6 and 7**. The small sample sizes could have limited the internal validity of our analyses and may bring uncertainty whether or not our findings on the value of dialysis and conservative care are true. The small patient groups could also have limited the generalizability of our results to other patients and settings. Moreover, since our patient cohort was derived from a single center, our findings might not be generalizable to centers or countries with different healthcare structures, and to settings with different approaches to dialysis, conservative care, and decision-making in older patients, including different approaches to end of life decisions [32, 33]. Specifically for **Chapter 7**, the findings on shared decision-making reflected the experiences and preferences of a limited number of older patients. We think that each negative patient experience was relevant to take into account, although some were reported by a minority.

Definition of time points

The difficulty to define equivalent time points in both treatment pathways for patient inclusion and outcome analyses is another methodological limitation of our studies on dialysis and conservative care (**Chapter 3, 4, 5, 6 and 7**). Similar to several previous studies [8, 13, 54-56], we used time of treatment decision as main time point in our analyses, since outcome comparisons from this time point are most informative for clinical practice being applicable to patients during decision-making. Use of this time point, however, may have resulted in lead time bias due to differences between time of treatment decision and actual treatment start [9, 57]. This was suggested in our patient cohort by a significant difference in eGFR at treatment decision between both patient groups. Therefore, we additionally used three time points based on a threshold eGFR in the survival analyses (**Chapter 3 and 4**) and adjusted for eGFR at treatment decision in the analyses of survival, treatment burden, and treatment costs (**Chapter 3, 4 and 6**). Use of time of treatment decision also means that our findings on outcomes analysed from this time point represent the results of a chosen treatment pathway rather than of treatment itself. While time of dialysis start and an equivalent in patients who chose conservative care could enable evaluation of received treatment itself, such time point, on the other hand, ignores the period between the treatment decision and actual dialysis start. Since patients could change their decision during this period or could die before start, using time of dialysis start may bring the risk of selection bias.

IMPLICATIONS FOR CLINICAL CARE

To discuss clinical implications of the main findings in this thesis, we first turn back to the case of the 80-year-old man with advanced chronic kidney disease who considered whether or not to start dialysis, as described in **Chapter 1 (box 1)**.

Box 2: case
In the case of the 80-year-old man, a shared decision-making process about treatment plan for advanced chronic kidney disease was started when his eGFR dropped below 18 mL/min/1.73 m^2. A multidisciplinary team was involved with whom he, joined by his wife and children, discussed goals of care and potential medical options to come to a decision that fits best with him. During this process, he also asked what his life would be like if he would or would not start dialysis. Deliberation on a conservative care pathway was, however, difficult due to limited available experience and scarce data on patient-relevant outcomes. After considering all options over a period of several months, he finally decided that conservative care would be best for him. The main reason for his decision was the potential impact of intensive dialysis treatment on his independence, daily activities, and quality of life, as well as a sense of life completion (summarized in Dutch: *"Aan mijn lijf geen polonaise meer"*). After his decision to forego dialysis, he received ongoing multidisciplinary care during which his decision and goals of care were regularly re-evaluated. While his eGFR continued to decline <10 mL/min/1.73 m^2, he lived for about 3 more years in which he was most of the time able to do what mattered to him.

Conservative care: a viable alternative?

Cases like the 80-year-old man were our main reason to start the research presented in this thesis, being confronted in clinical practice with challenging dilemmas about treatment for advanced chronic kidney disease in older patients. While recognizing its limitations, we think our data provide provisional but valuable insight on both treatment pathways that could help to improve clinical care. Overall, the findings contribute to an improved understanding of the value of dialysis and conservative care for older patients with advanced chronic kidney disease. Particularly in patients with the highest ages or multiple comorbid conditions, a decision in favour of conservative care instead of dialysis has potential to achieve similar outcomes on survival and health-related quality of life at lower treatment burden and treatment costs (**Chapter 3, 4, 5 and 6**). Hence, we conclude that (1) conservative care is a viable treatment alternative to dialysis in selected older patients, and that (2) value of care could be generated for both older patients and society by careful shared decision-making on preferred treatment plan.

While a decision to forego dialysis has been a legitimate and justifiable option before [58-60], the recognition that conservative care has value offers older patients and healthcare professionals a valuable treatment option next to dialysis. Conservative care should therefore become perceived as a reasonable and professionally acceptable alternative, rather than a failure of therapy [32, 33, 61]. In clinical practice, conservative care needs to become available and openly discussed as one of the possible treatment pathways for advanced chronic kidney disease in older patients. Recent clinical guidelines have now included a similar recommendation to discuss all possible treatment pathways in this patient population [50, 62-64]. Information resources about the relatively new pathway of conservative care need to be developed for both patients and healthcare professionals, which should include an appropriate explanation of its goals to prevent misbeliefs that conservative care is the same as 'doing nothing'.

How to decide which treatment plan is best?

The findings in this thesis could further help to improve shared decision-making on treatment plan in older patients with advanced chronic kidney disease. Firstly, our findings may help to inform the shared decision-making process on dialysis and conservative care by adding data on several patient-relevant outcomes for both treatment pathways (**Chapter 2, 3, 4, 5 and 6**). These data could help to consider which patients are more likely to benefit from dialysis or conservative care in terms of health outcomes.

We acknowledge, although, that the translation of study results into clinical practice is often difficult, since results are determined on group level and individual patient characteristics might not be taken into account.

Secondly, our findings on shared decision-making offer important improvements to an optimal shared decision-making process, aiming to come to a treatment plan that fits best with the individual patient (**Chapter 7 and 8**). To foster the patient's autonomy and enable a more open-ended dialogue between patient and healthcare team, we recommend that early initiation of shared decision-making is needed as in advance care planning and that shared decision-making should entail a dynamic process instead of a single point in time. Moreover, a shift towards a person-centered conception of shared decision-making is needed that aims to focus on all that matters to the patient as person. In this complex chronic care context, a focus on the person behind the patient could help bring all relevant information to the table, with the aim to learn about the specific goals of care that matter to that person given their situation (*e.g.*, an older and frail patient with multiple comorbid conditions and an approaching end of life) [65]. Hence, shared decision-making in this setting needs a different process, in which deciding on treatment is preceded by development of mutual goals of care first, and for which both the patient's and healthcare professional's expertise are needed [40, 41]. Thereby, the patient and healthcare professional become able to consider what way is best to support that person to do the things in life that matter to them, and, overall, how to be resilient and adaptive while having multiple chronic conditions. To enable such shared decision-making process, the healthcare professional needs to become a skilled companion to the patient, being part of the patient's relational context, and start asking the right questions about all that matters to the patient [45, 66, 67]. The long-term relationship between older patients and their multidisciplinary team in advanced chronic kidney disease care offers valuable opportunities to establish such person-centered partnerships.

FUTURE DIRECTIONS

Towards a person-centered conception of shared decision-making

A main task for research and clinical care is to further develop and enable person-centered approaches of shared decision-making. For example, future efforts are needed to develop patient autonomy-promoting interventions and resources for healthcare professionals to enable their more active role as skilled companion in the shared decision-making process.

Several tools are already available that could help to ask the right questions and develop a shared understanding of what matters to the patient [40, 68], including tools to reflect on the dimensions of positive health and to help prioritize goals of care [69-72]. Further work is needed to help implement such tools into clinical practice and determine what interventions are adequate and appropriate to foster the patient's autonomy [66]. Since autonomy is dependent of the relational context [73], the support needed will differ per individual situation, patient, and healthcare professional, and should therefore be evaluated accordingly in a contextually sensitive way [74]. Furthermore, irrespective of the patient's capacity or preference to decide themselves, the healthcare professional has the moral duty to strive to come to a decision that is consistent with what matters to the patient. Hence, a person-centered approach that takes into account the patient's expertise based on his/her lived experience is essential in all patients, while being often more challenging in patients with low health literacy or cognitive impairments. Better understanding how to take into account the patient's health literacy and cognitive functioning is needed to improve shared decision-making in all older patients with advanced chronic kidney disease [75, 76]. Especially cognitive impairments are common in this older patient population with often cardiovascular comorbidity [77-79]. Also, the roles of the patient's family and other contextual partners in shared decision-making need further elaboration [80]. Furthermore, training and education for healthcare professionals is needed to improve understanding what shared decision-making is, why shared decision-making and person-centered care are needed, and how shared decision-making should be performed in complex chronic care settings [45, 81].

Improving advanced chronic kidney disease care

For clinical care, it might be helpful to increase insight which older patients are more likely to benefit from a dialysis or conservative care pathway in terms of which health outcomes. For example, cardiovascular comorbidity seems to be more strongly associated with a decrease of the survival advantage in older patients choosing dialysis over conservative care than other comorbid conditions [82, Chapter 3]. Additional data on health status and frailty as assessed in a comprehensive geriatric assessment (*e.g.*, functional status, cognitive status, nutritional status) are also associated with outcomes in this patient population and might enable more accurate comparisons of outcomes between patient groups on both treatment pathways [79, 83, 84]. Furthermore, a comprehensive geriatric assessment could improve outcome prediction and help identify modifiable risk factors in individual patients in clinical practice [84, 85].

Due to substantial clinical and methodological heterogeneity in studies so far, standardization of research should be considered as a matter of importance to increase the efficacy of studies and patient input [86]. Theoretically, a randomized controlled trial with intention-to-treat analysis may offer the best study design to further compare both treatment pathways and overcome the main limitations of current observational outcome data. Such trials, however, pose difficult ethical questions and are likely to be difficult to actually perform in practice [87]. Non-randomized, observational studies should prospectively follow patients on both treatment pathways from an equivalent starting point with intention-to-treat analysis and include reasonable adjustment for confounders. Patients should ideally be followed until the end of life to assess outcomes during the entire trajectory [88]. Conservative care needs to be clearly defined, for which the definition proposed by KDIGO could be used [50]. Also, detailed analyses are needed per level of disease severity (*e.g.*, different levels of eGFR) and per dialysis pathway, including before and after dialysis start and per dialysis modality. Currently, one randomized controlled trial is ongoing in the United Kingdom and several prospective cohort studies, including in The Netherlands, are being performed, which aim to increase insight on outcomes in older patients on both treatment pathways [89-91]. Alongside outcome data, research and clinical efforts should aim to develop and evaluate best practices of conservative care and dialysis pathways in older patients, in order to further improve care quality of both treatment pathways [50, 51, 92-94]. For example, the value of incremental dialysis and integrated supportive care in dialysis pathways need further elaboration [95].

Next to research, evaluation of patient-relevant outcomes in patients on either a dialysis or conservative care pathway and, more general, in patients with advanced chronic kidney disease could also be based on data collection in daily clinical practice. So far, data collection efforts in chronic kidney disease care have been focusing on patients undergoing dialysis or kidney transplantation. Hence, their target patient population need to be extended with: (1) patients who choose a conservative care pathway, and (2) patients with advanced chronic kidney disease in general, to evaluate and optimize care quality in all treatment pathways and at earlier stages, in order to prevent or delay progression of chronic kidney disease. The well-established structure of regional, national, and international registries in nephrology care offers valuable opportunities to do so [96, 97]. Furthermore, current data collection efforts need to be extended with systematic measurement of more patient-relevant outcomes, next to survival and intermediate and process outcomes [98], for which the developed consensus recommendation for a standardized minimum set of patient-relevant outcomes for chronic kidney disease care (**Chapter 2**) could be used. The set, for example, includes the use of PROMs to collect data on health-related quality of life outcomes and symptoms [99, 100]. While considering the standard set as a goal rather than a threshold, research and evaluations are needed how standardized outcome measurement could be performed best in daily clinical care, including in patients with multiple comorbid conditions to minimize respondent and administrative burdens [101]. Also, practices need to be developed how to discuss and use individual patient outcomes and PROM results in individual patient care, as preferred by patients, next to use of results on group level. In The Netherlands, for example, promising efforts are ongoing to enable systematic use of PROMs in daily practice in patients on dialysis treatment [102]. Furthermore, quality indicators for conservative care are currently being developed to evaluate and improve care quality of this new treatment pathway [93].

Towards person-centered care

While the shift towards measuring patient-relevant outcomes and the increasing use of PROMs help to gain understanding of the patient's perspective, further analysis is needed whether these outcomes and strategies such as value-based healthcare are truly person-centered [103, 104]. PROMs, for instance, may bring new topics to the table that matter to patients, but most still have a biomedical orientation and miss other dimensions of health [70]. Additional ways are likely to be needed to ask the right questions that focus on all that matters to the patient, especially in complex chronic care settings such as in older and frail patients. Use of the concepts of positive health and resilience might help to do so [49, 105], shifting the focus from disease and pathophysiology to the patient's goals of care and ability to adapt: will the patient be able to do the things in life that matter to them with a potential treatment pathway? Or what treatment plan will contribute to a person's life in a meaningful way given their individual situation, especially if multiple comorbid diseases are involved? Research should determine whether these concepts could indeed further enable person-centered care and, if so, how these concepts could be evaluated in research and clinical practice and integrated into frameworks as value-based healthcare [47, 70, 106, 107].

Integrating all relevant perspectives

Overall, any future effort on advanced chronic kidney disease care should aim to involve all relevant stakeholders, in order to integrate all available domains of knowledge for finding ways to improve patient lives. Hence, patients and patient representatives are essential as partners to work together with (not only as study objects) to include and learn from their perspectives, next to perspectives like the biomedical perspective. Such patient partnerships could help to foster the shift to focus on all that matters to patients with advanced chronic kidney disease, as well as the shift towards person-centered care. Also based on my personal experience during this thesis, partnering with patients will help to increase the relevance, adequacy, and, thus, the potential impact of efforts [108, 109]. Furthermore, multi-expert collaboration involving professionals from different disciplines is of great value to further integrate all relevant perspectives, including the multidisciplinary team in advanced chronic kidney disease care (*e.g.*, nephrologists, nephrology nurses, dieticians, social workers), as well as experts on medical ethics and decision-making.

CONCLUSION

In this thesis, we have shown that conservative care is a viable alternative to dialysis in selected older patients with advanced chronic kidney disease. By careful shared decision-making on preferred treatment plan, value of care could be generated for both older patients and society. All available treatment options, including a dialysis and conservative care pathway, should therefore be openly discussed during the shared decision-making process. Furthermore, deciding on treatment should become preceded by development of mutual goals of care first, by starting a dialogue about what matters to the individual patient. Therefore, a person-centered approach is needed that aims to focus on the person behind the patient, in order to bring all relevant perspectives to the table, including of the patient and healthcare professional. Such shared decision-making process is particularly relevant in this chronic care setting to learn what specific goals of care matter, and what treatment plan could support best the older and often frail patient to be resilient given their situation and towards the end of life. Systematically developing the patient's perspective and involving their lived experience, alongside the biomedical perspective, is an important approach for which we need to start asking the right questions.

REFERENCES

1. Porter ME, Larsson S, Lee TH. Standardizing Patient Outcomes Measurement. N Engl J Med. 2016;374(6):504-6.
2. The SONG initiative. Available at: http://songinitiative.org/. Accessed 22 March 2021.
3. Tong A, Manns B, Hemmelgarn B, et al. Standardised outcomes in nephrology - Haemodialysis (SONG-HD): study protocol for establishing a core outcome set in haemodialysis. Trials. 2015;16:364.
4. Manera KE, Tong A, Craig JC, et al. Standardized outcomes in nephrology-peritoneal dialysis (SONG-PD): study protocol for establishing a core outcome set in PD. Perit Dial Int. 2017;37(6):639-47.
5. Tong A, Budde K, Gill J, et al. Standardized Outcomes in Nephrology-Transplantation: A Global Initiative to Develop a Core Outcome Set for Trials in Kidney Transplantation. Transplant Direct. 2016;2(6):e79.
6. O'Connor NR, Kumar P. Conservative management of end-stage renal disease without dialysis: a systematic review. J Palliat Med. 2012;15(2):228-35.
7. Foote C, Kotwal S, Gallagher M, Cass A, Brown M, Jardine M. Survival outcomes of supportive care versus dialysis therapies for elderly patients with end-stage kidney disease: A systematic review and meta-analysis. Nephrology (Carlton). 2016;21(3):241-53.
8. Brown MA, Collett GK, Josland EA, Foote C, Li Q, Brennan FP. CKD in elderly patients managed without dialysis: survival, symptoms, and quality of life. Clin J Am Soc Nephrol. 2015;10(2):260-8.
9. Hole B, Tonkin-Crine S, Caskey FJ, Roderick P. Treatment of End-stage Kidney Failure without Renal Replacement Therapy. Semin Dial. 2016;29(6):491-506.
10. Murtagh FE, Burns A, Moranne O, Morton RL, Naicker S. Supportive Care: Comprehensive Conservative Care in End-Stage Kidney Disease. Clin J Am Soc Nephrol. 2016;11(10):1909-14.
11. Hays RD, Kallich JD, Mapes DL, Coons SJ, Carter WB. Development of the kidney disease quality of life (KDQOL) instrument. Qual Life Res. 1994;3(5):329-38.
12. Yuen SK, Suen HP, Kwok OL, Yong SP, Tse MW. Advance care planning for 600 Chinese patients with end-stage renal disease. Hong Kong Journal of Nephrology. 2016;19:19-27.
13. Da Silva-Gane M, Wellsted D, Greenshields H, Norton S, Chandna SM, Farrington K. Quality of life and survival in patients with advanced kidney failure managed conservatively or by dialysis. Clin J Am Soc Nephrol. 2012;7(12):2002-9.
14. Seow YY, Cheung YB, Qu LM, Yee AC. Trajectory of quality of life for poor prognosis stage 5D chronic kidney disease with and without dialysis. Am J Nephrol. 2013;37(3):231-8.
15. De Biase V, Tobaldini O, Boaretti C, et al. Prolonged conservative treatment for frail elderly patients with end-stage renal disease: the Verona experience. Nephrol Dial Transplant. 2008;23(4):1313-7.
16. Iyasere O, Brown EA, Johansson L, et al. Quality of life with conservative care compared with assisted peritoneal dialysis and haemodialysis. Clin Kidney J. 2018;12(2):262-8.
17. Shah KK, Murtagh FEM, McGeechan K, et al. Health-related quality of life and well-being in people over 75 years of age with end-stage kidney disease managed with dialysis or comprehensive conservative care: a cross-sectional study in the UK and Australia. BMJ Open. 2019;9(5):e027776.
18. Tan T, Brennan F, Brown M. Impact of dialysis on symptom burden and functional state in the elderly. Renal Society of Australasia Journal. 2017;13(1):22-30.
19. van Loon IN, Goto NA, Boereboom FTJ, Verhaar MC, Bots ML, Hamaker ME. Quality of life after the initiation of dialysis or maximal conservative management in elderly patients: a longitudinal analysis of the Geriatric assessment in OLder patients starting Dialysis (GOLD) study. BMC Nephrol. 2019;20(1):108.

20. Yong DS, Kwok AO, Wong DM, Suen MH, Chen WT, Tse DM. Symptom burden and quality of life in end-stage renal disease: a study of 179 patients on dialysis and palliative care. Palliat Med. 2009;23(2):111-9.
21. Verberne WR, Dijkers J, Kelder JC, et al. Value-based evaluation of dialysis versus conservative care in older patients with advanced chronic kidney disease: a cohort study. BMC Nephrol. 2018;19(1):205.
22. Verberne WR, Dijkers J, Kelder JC, Jellema WT, van Delden JJM, Bos WJW. Reanalysis of the physical and mental health summary scores of dialysis versus conservative care in older patients with advanced chronic kidney disease: a critical appraisal. BMC Res Notes. 2019;12(1):722.
23. Carson RC, Juszczak M, Davenport A, Burns A. Is maximum conservative management an equivalent treatment option to dialysis for elderly patients with significant comorbid disease? Clin J Am Soc Nephrol. 2009;4(10):1611-9.
24. Hussain JA, Mooney A, Russon L. Comparison of survival analysis and palliative care involvement in patients aged over 70 years choosing conservative management or renal replacement therapy in advanced chronic kidney disease. Palliat Med. 2013;27(9):829-39.
25. Raman M, Middleton RJ, Kalra PA, Green D. Outcomes in dialysis versus conservative care for older patients: A prospective cohort analysis of stage 5 Chronic Kidney Disease. PLoS One. 2018;13(10):e0206469.
26. Teo BW, Ma V, Xu H, Li J, Lee EJ. Profile of hospitalisation and death in the first year after diagnosis of end-stage renal disease in a multi-ethnic Asian population. Ann Acad Med Singapore. 2010;39(2):79-87.
27. Shum CK, Tam KF, Chak WL, Chan TC, Mak YF, Chau KF. Outcomes in older adults with stage 5 chronic kidney disease: comparison of peritoneal dialysis and conservative management. J Gerontol A Biol Sci Med Sci. 2014;69(3):308-14.
28. Rodriguez Villarreal I, Ortega O, Hinostroza J, et al. Geriatric assessment for therapeutic decision-making regarding renal replacement in elderly patients with advanced chronic kidney disease. Nephron Clin Pract. 2014;128(1-2):73-8.
29. Lee CP, Chertow GM, Zenios SA. A simulation model to estimate the cost and effectiveness of alternative dialysis initiation strategies. Med Decis Making. 2006;26(5):535-49.
30. Teerawattananon Y, Mugford M, Tangcharoensathien V. Economic evaluation of palliative management versus peritoneal dialysis and hemodialysis for end-stage renal disease: evidence for coverage decisions in Thailand. Value Health. 2007;10(1):61-72.
31. Hussain JA, Flemming K, Murtagh FE, Johnson MJ. Patient and health care professional decision-making to commence and withdraw from renal dialysis: a systematic review of qualitative research. Clin J Am Soc Nephrol. 2015;10(7):1201-15.
32. Ladin K, Pandya R, Perrone RD, et al. Characterizing Approaches to Dialysis Decision Making with Older Adults: A Qualitative Study of Nephrologists. Clin J Am Soc Nephrol. 2018;13(8):1188-96.
33. Ladin K, Pandya R, Kannam A, et al. Discussing Conservative Management With Older Patients With CKD: An Interview Study of Nephrologists. Am J Kidney Dis. 2018;71(5):627-35.
34. Morton RL, Tong A, Howard K, Snelling P, Webster AC. The views of patients and carers in treatment decision making for chronic kidney disease: systematic review and thematic synthesis of qualitative studies. BMJ. 2010;340:c112.
35. Joseph-Williams N, Elwyn G, Edwards A. Knowledge is not power for patients: a systematic review and thematic synthesis of patient-reported barriers and facilitators to shared decision making. Patient Educ Couns. 2014;94(3):291-309.
36. Chewning B, Bylund CL, Shah B, Arora NK, Gueguen JA, Makoul G. Patient preferences for shared decisions: a systematic review. Patient Educ Couns. 2012;86(1):9-18.
37. Bensing J, Rimondini M, Visser A. What patients want. Patient Educ Couns. 2013;90(3):287-90.

38. Tinetti ME, Fried TR, Boyd CM. Designing health care for the most common chronic condition--multimorbidity. JAMA. 2012;307 (23):2493-4.
39. Pel-Littel RE, Snaterse M, Teppich NM, et al. Barriers and facilitators for shared decision making in older patients with multiple chronic conditions: a systematic review. BMC Geriatr. 2021;21(1):112.
40. Elwyn G, Vermunt NPCA. Goal-Based Shared Decision-Making: Developing an Integrated Model. J Patient Exp. 2020;7(5):688-96.
41. van de Pol MH, Fluit CR, Lagro J, Slaats YH, Olde Rikkert MG, Lagro-Janssen AL. Expert and patient consensus on a dynamic model for shared decision-making in frail older patients. Patient Educ Couns. 2016;99(6):1069-77.
42. Kogan AC, Wilber K, Mosqueda L. Person-Centered Care for Older Adults with Chronic Conditions and Functional Impairment: A Systematic Literature Review. J Am Geriatr Soc. 2016;64(1):e1-7.
43. Morton RL, Sellars M. From Patient-Centered to Person-Centered Care for Kidney Diseases. Clin J Am Soc Nephrol. 2019;14(4):623-5.
44. Freidin N, O'Hare AM, Wong SPY. Person-Centered Care for Older Adults With Kidney Disease: Core Curriculum 2019. Am J Kidney Dis. 2019;74(3):407-16.
45. Duggan PS, Geller G, Cooper LA, Beach MC. The moral nature of patient-centeredness: is it "just the right thing to do"? Patient Educ Couns. 2006;62(2):271-6.
46. Barry MJ, Edgman-Levitan S. Shared decision making--pinnacle of patient-centered care. N Engl J Med. 2012;366(9):780-1.
47. Gijzel SMW, Whitson HE, van de Leemput IA, et al. Resilience in Clinical Care: Getting a Grip on the Recovery Potential of Older Adults. J Am Geriatr Soc. 2019;67(12):2650-7.
48. Whitson HE, Duan-Porter W, Schmader KE, Morey MC, Cohen HJ, Colón-Emeric CS. Physical Resilience in Older Adults: Systematic Review and Development of an Emerging Construct. J Gerontol A Biol Sci Med Sci. 2016;71(4):489-95.
49. Huber M, Knottnerus JA, Green L, et al. How should we define health? BMJ. 2011;343:d4163.
50. Davison SN, Levin A, Moss AH, et al. Executive summary of the KDIGO Controversies Conference on Supportive Care in Chronic Kidney Disease: developing a roadmap to improving quality care. Kidney Int. 2015;88(3):447-59.
51. Harris DCH, Davies SJ, Finkelstein FO, et al. Increasing access to integrated ESKD care as part of universal health coverage. Kidney Int. 2019;95(4S):S1-S33.
52. Evangelidis N, Tong A, Manns B, et al. Developing a Set of Core Outcomes for Trials in Hemodialysis: An International Delphi Survey. Am J Kidney Dis. 2017;70(4):464-75.
53. Couchoud C, Hemmelgarn B, Kotanko P, Germain MJ, Moranne O, Davison SN. Supportive Care: Time to Change Our Prognostic Tools and Their Use in CKD. Clin J Am Soc Nephrol. 2016;11(10):1892-901.
54. Joly D, Anglicheau D, Alberti C, et al. Octogenarians reaching end-stage renal disease: cohort study of decision-making and clinical outcomes. J Am Soc Nephrol. 2003;14(4):1012-21.
55. Szeto CC, Kwan BC, Chow KM, et al. Life expectancy of Chinese patients with chronic kidney disease without dialysis. Nephrology (Carlton). 2011;16(8):715-9.
56. Wong CF, McCarthy M, Howse ML, Williams PS. Factors affecting survival in advanced chronic kidney disease patients who choose not to receive dialysis. Ren Fail. 2007;29(6):653-9.
57. Tam-Tham H, Quinn RR, Weaver RG, et al. Survival among older adults with kidney failure is better in the first three years with chronic dialysis treatment than not. Kidney Int. 2018;94(3):582-8.
58. Thorsteinsdottir B, Swetz KM, Albright RC. The Ethics of Chronic Dialysis for the Older Patient: Time to Reevaluate the Norms. Clin J Am Soc Nephrol. 2015;10(11):2094-9.
59. Butler CR, Mehrotra R, Tonelli MR, Lam DY. The Evolving Ethics of Dialysis in the United States: A Principlist Bioethics Approach. Clin J Am Soc Nephrol. 2016;11(4):704-9.
60. Moss AH. Ethical principles and processes guiding dialysis decision-making. Clin J Am Soc Nephrol. 2011;6(9):2313-7.

61. Tonkin-Crine S, Okamoto I, Leydon GM, et al. Understanding by Older Patients of Dialysis and Conservative Management for Chronic Kidney Failure. Am J Kidney Dis. 2014;65(3):443-50.
62. Farrington K, Covic A, Aucella F, et al. Clinical Practice Guideline on management of older patients with chronic kidney disease stage 3b or higher (eGFR <45 mL/min/1.73 m2). Nephrol Dial Transplant. 2016;31(suppl 2):ii1-ii66.
63. Williams AW, Dwyer AC, Eddy AA, et al. Critical and honest conversations: the evidence behind the "Choosing Wisely" campaign recommendations by the American Society of Nephrology. Clin J Am Soc Nephrol. 2012;7(10):1664-72.
64. Federatie Medisch Specialisten. Richtlijn. Nierfunctievervangende behandeling. 2016. Available at www.richtlijnendatabase.nl (date last access: 22 March 2021).
65. Gawande A. Being mortal: medicine and what matters in the end. First edition. ed. New York: Metropolitan Books: Henry Holt & Company; 2014. 282 pages.
66. Cribb A, Entwistle VA. Shared decision making: trade-offs between narrower and broader conceptions. Health Expect. 2011;14(2):210-9.
67. Kars MC, Grypdonck M, de Korte-Verhoef M, Bierings M, Van Delden J. Chapter 6. Call me if you need me: the roles of parents and professionals in early identification, assessment and treatment at home of symptoms of terminal cancer among children. Parenting and palliative care in paediatric oncology (Dissertation). Utrecht University: Utrecht University Repository; 2012. p. 107-34.
68. Pel-Littel RE, van Weert JCM, Minkman MM, Scholte Op Reimer WJM, van de Pol MH, Buurman BM. The development of the evidence-based SDM MCC intervention to improve shared decision making in geriatric outpatients: the DICO study. BMC Med Inform Decis Mak. 2020;20(1):35.
69. Ramer SJ, McCall NN, Robinson-Cohen C, et al. Health Outcome Priorities of Older Adults with Advanced CKD and Concordance with Their Nephrology Providers' Perceptions. J Am Soc Nephrol. 2018;29(12):2870-8.
70. Huber M, van Vliet M, Giezenberg M, et al. Towards a 'patient-centred' operationalisation of the new dynamic concept of health: a mixed methods study. BMJ Open. 2016;6(1):e010091.
71. Stegmann ME, Festen S, Brandenbarg D, et al. Using the Outcome Prioritization Tool (OPT) to assess the preferences of older patients in clinical decision-making: A review. Maturitas. 2019;128:49-52.
72. Baddour NA, Siew ED, Robinson-Cohen C, et al. Serious Illness Treatment Preferences for Older Adults with Advanced CKD. J Am Soc Nephrol. 2019;30(11):2252-61.
73. Childress JF. Needed: A More Rigorous Analysis of Models of Decision Making and a Richer Account of Respect for Autonomy. Am J Bioeth. 2017;17(11):52-4.
74. Entwistle VA, Cribb A, Watt IS. Shared decision-making: enhancing the clinical relevance. J R Soc Med. 2012;105(10):416-21.
75. Taylor DM, Fraser SDS, Bradley JA, et al. A Systematic Review of the Prevalence and Associations of Limited Health Literacy in CKD. Clin J Am Soc Nephrol. 2017;12(7):1070-84.
76. Iyasere O, Okai D, Brown E. Cognitive function and advanced kidney disease: longitudinal trends and impact on decision-making. Clin Kidney J. 2017;10(1):89-94.
77. Zijlstra LE, Trompet S, Mooijaart SP, et al. The association of kidney function and cognitive decline in older patients at risk of cardiovascular disease: a longitudinal data analysis. BMC Nephrol. 2020;21(1):81.
78. van Deudekom FJ, Kallenberg MH, Berkhout-Byrne NC, et al. Patterns and characteristics of cognitive functioning in older patients approaching end stage kidney disease, the COPE-study. BMC Nephrol. 2020;21(1):126.
79. Kallenberg MH, Kleinveld HA, Dekker FW, et al. Functional and Cognitive Impairment, Frailty, and Adverse Health Outcomes in Older Patients Reaching ESRD-A Systematic Review. Clin J Am Soc Nephrol. 2016;11(9):1624-39.
80. Gulbrandsen P, Clayman ML, Beach MC, et al. Shared decision-making as an existential journey: Aiming for restored autonomous capacity. Patient Educ Couns. 2016;99(9):1505-10.

81. van de Pol MHJ, Fluit CRMG, Lagro J, Slaats Y, Olde Rikkert MGM, Lagro-Janssen ALM. Shared decision making with frail older patients: Proposed teaching framework and practice recommendations. Gerontol Geriatr Educ. 2017;38(4):482-95.
82. Murtagh FE, Marsh JE, Donohoe P, Ekbal NJ, Sheerin NS, Harris FE. Dialysis or not? A comparative survival study of patients over 75 years with chronic kidney disease stage 5. Nephrol Dial Transplant. 2007;22(7):1955-62.
83. van Loon IN, Goto NA, Boereboom FTJ, et al. Geriatric Assessment and the Relation with Mortality and Hospitalizations in Older Patients Starting Dialysis. Nephron. 2019;143(2):108-19.
84. van Loon IN, Wouters TR, Boereboom FT, Bots ML, Verhaar MC, Hamaker ME. The Relevance of Geriatric Impairments in Patients Starting Dialysis: A Systematic Review. Clin J Am Soc Nephrol. 2016;11(7):1245-59.
85. van Loon IN, Goto NA, Boereboom FTJ, Bots ML, Verhaar MC, Hamaker ME. Frailty Screening Tools for Elderly Patients Incident to Dialysis. Clin J Am Soc Nephrol. 2017;12(9):1480-8.
86. Perkins GD, Jacobs IG, Nadkarni VM, et al. Cardiac arrest and cardiopulmonary resuscitation outcome reports: update of the Utstein Resuscitation Registry Templates for Out-of-Hospital Cardiac Arrest: a statement for healthcare professionals from a task force of the International Liaison Committee on Resuscitation (American Heart Association, European Resuscitation Council, Australian and New Zealand Council on Resuscitation, Heart and Stroke Foundation of Canada, InterAmerican Heart Foundation, Resuscitation Council of Southern Africa, Resuscitation Council of Asia); and the American Heart Association Emergency Cardiovascular Care Committee and the Council on Cardiopulmonary, Critical Care, Perioperative and Resuscitation. Circulation. 2015;132(13):1286-300.
87. Korevaar JC, Feith GW, Dekker FW, et al. Effect of starting with hemodialysis compared with peritoneal dialysis in patients new on dialysis treatment: a randomized controlled trial. Kidney Int. 2003;64(6):2222-8.
88. Murtagh FE, Addington-Hall J, Edmonds P, et al. Symptoms in the month before death for stage 5 chronic kidney disease patients managed without dialysis. J Pain Symptom Manage. 2010;40(3):342-52.
89. Murphy E, Burns A, Murtagh FEM, Rooshenas L, Caskey FJ. The Prepare for Kidney Care Study: prepare for renal dialysis versus responsive management in advanced chronic kidney disease. Nephrol Dial Transplant. 2020.
90. van Oevelen M, Abrahams AC, Bos WJW, et al. DIALysis or not: Outcomes in older kidney patients with GerIatriC Assessment (DIALOGICA): rationale and design. BMC Nephrol. 2021;22(1):39.
91. POLDER Initiatief. Pathway for Older Patients Reaching End Stage Renal Disease. Available at: https://www.polderstudie.nl/nl. Accessed March, 2021.
92. Davison SN, Tupala B, Wasylynuk BA, Siu V, Sinnarajah A, Triscott J. Recommendations for the Care of Patients Receiving Conservative Kidney Management: Focus on Management of CKD and Symptoms. Clin J Am Soc Nephrol. 2019;14(4):626-34.
93. Harrison TG, Tam-Tham H, Hemmelgarn BR, James MT, Sinnarajah A, Thomas CM. Identification and Prioritization of Quality Indicators for Conservative Kidney Management. Am J Kidney Dis. 2019;73(2):174-83.
94. Wong SPY, McFarland LV, Liu CF, Laundry RJ, Hebert PL, O'Hare AM. Care Practices for Patients With Advanced Kidney Disease Who Forgo Maintenance Dialysis. JAMA Intern Med. 2019;179(3):305-13.
95. Garofalo C, Borrelli S, De Stefano T, et al. Incremental dialysis in ESRD: systematic review and meta-analysis. J Nephrol. 2019;32(5):823-36.
96. Liu FX, Rutherford P, Smoyer-Tomic K, Prichard S, Laplante S. A global overview of renal registries: a systematic review. BMC Nephrol. 2015;16:31.

97. Port FK, Pisoni RL, Bommer J, et al. Improving outcomes for dialysis patients in the international Dialysis Outcomes and Practice Patterns Study. Clin J Am Soc Nephrol. 2006;1(2):246-55.
98. Nissenson AR. Improving outcomes for ESRD patients: shifting the quality paradigm. Clin J Am Soc Nephrol. 2014;9(2):430-4.
99. Greenhalgh J. The applications of PROs in clinical practice: what are they, do they work, and why? Qual Life Res. 2009;18(1):115-23.
100. Valderas JM, Kotzeva A, Espallargues M, et al. The impact of measuring patient-reported outcomes in clinical practice: a systematic review of the literature. Qual Life Res. 2008;17(2):179-93.
101. Blom M, Khalid M, Van-Lettow B, et al. Harmonization of the ICHOM Quality Measures to Enable Health Outcomes Measurement in Multimorbid Patients. Front Digit Health. 15 December 2020.
102. van der Willik EM, Meuleman Y, Prantl K, et al. Patient-reported outcome measures: selection of a valid questionnaire for routine symptom assessment in patients with advanced chronic kidney disease - a four-phase mixed methods study. BMC Nephrol. 2019;20(1):344.
103. Carr AJ, Higginson IJ. Are quality of life measures patient centred? BMJ. 2001;322(7298):1357-60.
104. Hall A. Quality of Life and Value Assessment in Health Care. Health Care Anal. 2020;28(1):45-61.
105. Angevaare MJ, Roberts J, van Hout HPJ, et al. Resilience in older persons: A systematic review of the conceptual literature. Ageing Res Rev. 2020;63:101144.
106. Angevaare MJ, Monnier AA, Joling KJ, et al. The Application of the Concept of Resilience in Aging Research and Older Adult Care: A Focus Group Study. Front Med (Lausanne). 2020;7:365.
107. Wister A, Lear S, Schuurman N, et al. Development and validation of a multi-domain multimorbidity resilience index for an older population: results from the baseline Canadian Longitudinal Study on Aging. BMC Geriatr. 2018;18(1):170.
108. Forsythe LP, Ellis LE, Edmundson L, et al. Patient and Stakeholder Engagement in the PCORI Pilot Projects: Description and Lessons Learned. J Gen Intern Med. 2016;31(1):13-21.
109. de Wit M, Abma T, Koelewijn-van Loon M, Collins S, Kirwan J. Involving patient research partners has a significant impact on outcomes research: a responsive evaluation of the international OMERACT conferences. BMJ Open. 2013;3(5).