

Losing Weight; The Experience of Patients With End Stage Kidney Disease: A Qualitative Study

Johanne Freeman (✉ johannefreeman87@gmail.com)

University of Copenhagen

Hanne Konradsen

Herlev Hospital

Kristine Lindhard

Herlev Hospital

Ditte Hansen

Herlev Hospital

Research Article

Keywords: Chronic kidney disease, obesity, overweight, quality of life, qualitative research

Posted Date: January 8th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-141130/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background: Patients with end-stage kidney disease need renal replacement therapy to ensure survival. Kidney transplant is superior to dialysis due to better survival. Patients with obesity cannot be approved for kidney transplant until they lose sufficient weight. Obesity may complicate the surgical procedure, and the risk of graft loss increases with increasing body mass index. Attaining appropriate weight loss is often a hindrance for transplantation for the patient with obesity, and further knowledge of minds, thoughts and attitudes are necessary to better help these patients to lose weight.

Methods: Semi-structured interviews with patients who needed to lose weight to be approved to the kidney transplant list at a Danish hospital, were recorded and transcribed. From patients' responses, we identified descriptive categories using a phenomenological approach. Factors affecting outcomes were derived reflexively from these categories.

Results: Ten interviews were analyzed. Experiences of obesity and weight-loss attempts were described across 4 categories; (i) Restrictions and exhaustion, (ii) Hope and hopelessness, (iii) Support and self-discipline, and (iv) Motivation based on severity.

Conclusions: Patients with obesity that hinders kidney transplantation need additional help with the dietary restrictions that follow a kidney disease. They need bridging between a kidney-friendly diet and a sustainable diet that will ensure weight-loss. These patients also express how they do not want to be alone in their weight-loss battle. They are looking for help, camaraderie and support to obtain weight-loss.

Background

In Denmark it is estimated that 10–15% of the adult population has a kidney disease [1]. Chronic kidney disease (CKD) can arise from a number of diseases, but most commonly diabetes and hypertension [1]. Progressive loss of kidney function is seen, which ultimately results in the need for renal replacement therapy (dialysis or transplantation) [2]. For suitable candidates, kidney transplant is desirable over dialysis, because it improves survival, quality of life and is less costly than dialysis [3]. For patients in dialysis that are younger than 65 years old an age-standardized mortality rate was found to be 1.7 times higher in patients with obesity (BMI ≥ 30 kg/m²) than those with normal body mass index (BMI). Corresponding to an excess rate of 5.2 deaths/100 patient-years [4]. In patients with obesity, pre-transplant weight-loss is necessary in order to reduce the risk of surgical complications at the time of transplantation and improve outcome of graft function after transplantation. Recipients tend to gain weight up to 10 kg post-transplant. The post-transplant weight gain is the result of multiple factors, and is usually intensified by glucocorticoids and immunosuppressive drugs [5]. A pre-transplant (BMI) > 30 kg/m² along with post-transplant immunosuppression increase the risk of new-onset diabetes after transplantation [6], and increasing BMI > 30 kg/m² is associated with greater risk of graft loss. Patients with a BMI ranging from 30-34.9 have a graft survival rate of 93.9% at 1-year, and 88% at 5-year. Patients with a BMI ≥ 35 have a graft survival rate of 75% at 1-year, and 63% at 5-year [7]. The incidence of end-

stage kidney disease (ESKD) is increasing faster than the prevalence of CKD, therefore more patients are in need of a kidney transplant [8]. Kidney transplants remain a scarce resource and the obligation to steward organs to good outcomes is inherent in transplant practice [9]. When approved for the kidney transplant list, the average wait time for Danish patients is nationally 17 months [10]. Therefore, long-term weight loss, defined as a minimum 10% loss of initial bodyweight and maintained for minimum 1 year, is recommended for patients with ESKD that are also obese. Long-term weight-loss is obtained by only 20% after one year, and even fewer maintain weight-loss beyond this [11], which leaves patients in need of a kidney transplant that are obese, forever at the back of the line. To give patients with obesity a reasonable chance of ever getting a kidney transplant, it is important that weight-loss is obtained. Studies have found an increasing number of patients with ESKD to be overweight [12], but attention has to be paid to how we can ensure long-term weight-loss in these patients. This study aims to explore the minds, thoughts and attitudes of patients with obesity who must lose weight in order to receive a new kidney. The perspective is, that we as health professionals in the future can adapt better ways to help patients with obesity lose adequate and sustainable weight.

Methods

Design

This semi-structured interview study used an exploratory research design, guided by qualitative content analysis.

Participants

A total of 10 patients from the same outpatient hemodialysis clinic at Herlev Hospital were included in the study; seven males and three females, with an age range of 42 to 66 years (Table 1). Nine of these patients were required to lose weight to meet the criteria for being approved for the kidney transplant list, and one patient had succeeded in weight-loss and had been added to the kidney transplant list.

Table 1
 Summary characteristics of study population. Data are presented as numbers (percentages) or median (range)

Demographic category	
Total number of participants	10
Gender	3 (30)
Female	7 (70)
Male	
Age	54 (42–66)
BMI	39.4 (29.3–51.2)
Dialysis	7 (64)
Diabetes	4 (40)
Marital status	2(20)
Single	8(80)
Married/De facto	
Employment status	5 (50)
Employed	5 (50)
Retired/early retirement	

Maximal variation was desired, including age-span, different causes of chronic kidney disease, both female and male sex and finally patients on dialysis or patients with eGFR < 15 ml/min/1.73 m² who were not yet on dialysis. The patients needed to be able to communicate in Danish. At the time of the interviews patients were all outpatients at departments of nephrology at two medium sized hospitals and they were all in the process of losing weight.

Data collection

Data was collected in the fall of 2020. Patients who agreed to participate were interviewed over the phone at a time convenient for the patient. The researcher repeated the information about the study, and obtained consent from the patients verbally and in writing. A semi-structured interview-guide was used (Table 2). Questions were developed based on existing literature and the aim of the study. The questions were open-ended and revolved around the experience of being overweight, the impact this had on their everyday life, to what degree they felt supported in their weight-loss attempts, and their long-term goals for obtaining weight-loss. The interviews ranged from 7 to 20 minutes, with the average being 13 minutes. The interviews were tape-recorded and transcribed verbatim.

Table 2
Interview questions based on existing literature

<i>1. Tell me about the entire course of your disease</i>	<i>7. How has your experience been having a kidney illness and having been met with restrictions concerning your weight, to receive treatment?</i>
<i>2. If you go all the way back to your childhood and until today, then how has your relationship with your body and weight been?</i>	<i>8. How much weight do the doctors want you to lose?</i>
<i>3. How has your relationship with food been throughout your life? Has your weight gone up and down?</i>	<i>9. What kind of support do you think would be helpful in losing weight? Have you received any support, and was it helpful?</i>
<i>4. How has your relationship with physical activity been throughout your life? Have you been physical active throughout your life?</i>	<i>10. Do you believe that you will be successful in losing weight?</i>
<i>5. Is it your experience that your family and friends understand your situation and can offer you the support you need?</i>	
<i>6. How do you plan to succeed in losing weight?</i>	

Data analysis

Interviews were transcribed maximum two weeks after having taken place. Transcriptions were then analyzed using inductive conventional content analysis [13]. The purpose was to derive meaning from the interviews and to identify recurring conceptual patterns of experience across the data material. Analysis took place in phases. First step, the author listened through the audio recordings and carefully read and re-read the transcriptions to become familiar with the content of each interview. Next step was identifying meaning units by collecting words or statements relating to the same central meaning. The meaning units were condensed and sorted into categories related to their content. Data collection ended when saturation was reached, which was determined when no more new information was gained from the interviews. Throughout the analytical process the meaning units and categories were discussed by all the writers to increase validity and the trustworthiness of the results [14].

Ethical approval

The patients were reassured that participation was entirely voluntary and that they could withdraw at any point for any reason. They were guaranteed confidentiality and anonymity in the presentation of the findings. Ethical approval was not necessary according to Danish law since this was an interview study [15]. This study was part of a Master's thesis which is protected under the data laws of The University of Copenhagen.

Results

Four categories came forward in the analytic process of the interviews. *Restrictions and exhaustion* - describing how the patients handle strict dietary restrictions and how they muddle through the exhaustion both obesity and a kidney disease can bring along. *Hope and hopelessness* - patients trying to lose weight feel a deep sense of hopelessness. Most of the time they are on the brink of giving up, yet, in the middle of the hopelessness, they discover new hope and renewed energy to push on. *Support and self-discipline* - how patients in their weight-loss battle want support from the hospital, general practitioner and local community, along with family and friends, but how they also discover that they are the only ones responsible to make a change. The last category *motivation based on severity*, describes how patients that need to lose weight to get on the transplant list, tend to put off weight-loss until their condition is so dire that they essentially are forced to do something about it.

Restrictions and exhaustion

In this category patients described struggling with the dietary restrictions kidney disease brings, while also having to lose weight. Several patients expressed frustrations about the restricted diet: One patient said: *"it's extremely hard to lose weight when you have to be careful all the time and think about how much potassium and phosphate is in the different foods."* Another interviewee said: *"I have tried to eat reasonably, but I find it difficult since there are so many things I can't eat"*. A patient who also has diabetes together with her kidney disease said: *"One thing is to have this diabetes, and I used to be allowed to eat fresh vegetables. But then when I got my kidney disease, I found it very difficult that I couldn't eat that anymore."* Another one said: *"I feel like many of the things I need to eat in relation to my kidney disease, are the same things, they say, don't work on a diet, such as white bread, which you would normally avoid if you're on a diet."*

The patients in this study described an extreme level of exhaustion. Many expressed that the energy simply isn't there to get out and exercise, one says: *"I was so tired after getting off work, that I had to go home and sleep for an hour before I could go and do sports"*. Another one expressed how he wished to have more energy. One believed that his obesity is the main reason for his tiredness: *"you get extremely hindered from particularly extreme obesity, you're constantly tired, and adding a kidney disease and dialysis on top of that doesn't help at all"*, he goes on to say: *"I can remember being mentally tired all the way back from when I was a kid."* Several also expressed that they would like to exercise more, but it's difficult when the dialysis treatment is 3 days per week, and perhaps together with a job.

One patient said: *"I need to find a way to deal with the exhaustion, that's something I need to find a rhythm in before I can add exercise to my schedule."*

Hope and hopelessness

Patients described their weight-loss endeavors with an all-encompassing hopelessness. Words expressing their feelings of having to lose weight included: impossible, battle, and that it simply wasn't going to happen. One patient's experiences with weight-loss were: *"they told me to lose 10 kg, and my initial reaction was that I couldn't, and that it wasn't going to happen."* Another one expressed how he

found it basically impossible to lose weight: *"When you have to lose more than 20 kg you might as well give up right away. It's not realistic, and not something you just do in 6 months... I find it entirely impossible."* Several patients expressed how weight-loss is something you need extra time and "room" for in life, they explained how they had too much going on currently, to take on the weight-loss battle, and also expressed that when life would settle down a bit, they would have the time to get serious about weight loss. One patient said: *"when I first was told how much weight I needed to lose, it just knocked me completely out"* yet goes on to say: *"I have actually already lost 12 kg, so I'm counting on that I can get on the list pretty soon."* One patient was particularly frustrated with her own inabilities to lose weight: *"I'm so annoyed that I can't just do it, I think to myself - why don't you just do it?!"*

Support and self-discipline

Support from the hospital, general practitioner and the surrounding community along with close friends and family members was something the patients thought about a lot, but also how losing weight and generally taking care of yourself was entirely your own responsibility, and how no one can do the job for you. One described how he thought the doctors and his family focused on the weight too much, and felt like it took focus away from what was important, his kidney disease. He also described how he felt he had gotten a lot of support from the hospital where he had talked to a dietitian, but that he himself, was not very good at following the advice he was given. Another one said: *"I see a dietitian regularly, but honestly it's your own responsibility do to something about it."* One described how she on her own found weight-loss support, but also expressed that you are on your own trying to figure it out. Another patient described how his wife was very supportive when he wanted to go away on a 3-month weight-loss stay. He went on to explain that he had not received any support from the hospital or the local community, he said: *"I was extremely frustrated when there was no help to get, but then I said, OK, only you can do something about this."* One discussed how the advice he got from a dietitian was good, but that *"it was basically the same old song; it's easy to say what to do, but very hard to follow"*. Several expressed how they would like a group or a partner to meet with and exercise, someone to set goals with that will keep you motivated. One said: *"I want someone to keep an eye on me, someone I meet with, so that if I show up and haven't lost weight, that I would be embarrassed."* Another one said: *"I would like to meet with someone and exercise. If I have to go to the gym alone, I just won't get it done."* Several expressed that the advice and diet plan they got from the dietitian didn't suit them very well, and that it often suggested meals that they would never eat. One patient who was included in this study had already managed to lose sufficient weight to get on the transplant list, when asking him what it took, he only had one answer; *"self-discipline and nothing else"*.

Motivation based on severity

A general experience in this category was that many of the patients did not feel much urgency to lose weight, because their illness was not serious enough yet. They all expressed though, that as soon as they got to be in very bad shape, then they would be able to lose sufficient weight. Others had also discovered, that losing weight was their only way, simply because they were so hindered in everyday life, that they

could not function at all. One patient described that he did not feel ill enough, and that this was the reason he was not motivated to lose weight yet. One described that when she was told to lose weight, it completely flattened her, but she also said: *“I’ve been thinking lately, that if I’m going to get a transplant at all, I’ll have to get on the weight-loss very soon.”* One patient explained how she knew she could keep her illness at bay, at least for a while, if she would eat healthy and exercise, but that dialysis was inevitable and transplant after that. One patient described how he was so overweight that he could not do anything at all, and that is what eventually ended up motivating him to lose weight, he said: *“it wasn’t until I started in dialysis that it became serious to me, when you suddenly can’t do anything at all, it’s time to get in gear.”*

Discussion

In this semi-structured interview study, we explored the minds, thoughts and attitudes of patients with obesity who must lose weight in order to receive a kidney transplant, and 4 categories were central in the interviews with the patients. *Restrictions and exhaustion, hope and hopelessness, support and self-discipline and motivation based on severity.*

Restrictions and exhaustion described how food was central to the investigated patients. Other studies have found food to be central as well [16–18]. What to eat, when and how much is extremely important when trying to obtain weight-loss. The restricted diet that is associated with both CKD, but also ESKD, is something that was brought up by the patients repeatedly. A kidney-friendly diet, which consists of many modifications is considered one of the most complex and restrictive therapeutic diets. In addition to this, adults with ESKD tend to perceive the diet to be complicated and contradictory to typical healthy eating advice. For example, fruits, vegetables and dairy products are often restricted in ESKD due to their potassium and/or phosphate content [19]. Another element described in this category was the level of exhaustion the patients felt. Fatigue is often a major problem in patients with a kidney disease, and is seen in 60–97% of patients with ESKD undergoing hemodialysis, and as many of 69% of non-dialysis patients with CKD [20]. It has been reported to be a major obstacle to maintain usual daily activities and quality of life [21]. Fatigue is a frequent symptom when a severe decrease in kidney function is present which leads to build-up of toxins and waste products in the blood along with anemia, medicine and dialysis [22]. There is strong association between the presence of fatigue and increased BMI, number of co-morbidities, decreased physical activity, and depression. And the severity of fatigue correlates with an increasing BMI [23]. Extreme daytime sleepiness also correlates with an increased BMI, which is believed to be associated with both sleep apnea, but also a high fat diet, which is shown to result in hypersomnolence in both humans and animals [24].

Hope and hopelessness were found to be an important experience for the patients. Addressing pathways to sustained weight-loss would initially often be met with a deep sense of hopelessness, but as we got into the discussion it would be turned around to hope, and a belief that things would improve, that they would be able to lose sufficient weight and thereby improve their physical condition. Hope is described as an optimistic attitude of mind based on an expectation of positive outcomes. Studies have found that

hope is positively correlated with life satisfaction and serves as a buffer against the impact of negative and stressful life events [25]. It has been discovered in studies that family members can help induce hope in severely ill patients, and that this alone can help the affected patient to push on and get better [26]. This can be applied to the patients in this study as well, both that they had a deep sense that things will get better, but also that they realized that their friends and family wanted them to get better and wanted them to lose sufficient weight to get on the transplant list. It is clear that hope is important and necessary to overcome difficulties in life [25].

The category *support and self-discipline*, discovered how the patients felt support or lack thereof in losing weight, and how they deciphered having enough self-discipline to stick with their weight-loss path. Lack of support, particularly from healthcare professionals, is something described often in the literature. It has been found that general practitioners often dismiss their patient's obesity as a behavioral problem. It is assumed that weight-loss is within a person's control, losing weight is easy, and all you basically need to do, is to eat healthy and exercise, simple as that. It is proposed that healthcare professionals are not interested in the patient's personal story, and that they do not offer recognition for what the patient has already done and is currently doing [17, 27, 28]. Self-discipline was described as an important ability, and is something that has often brought up in literature as extremely important and the key to sustainable weight-loss [29]. It was evident from this study that some patients have the ability to be disciplined about their weight-loss, and others need a helping hand. It has been described how persons who can maintain their weight-loss and those that have a healthy weight are extremely vigilant about their weight, particularly regarding dietary intake. In contrast, weight re-gainers tend to feel that the effort involved in weight-maintenance is not worthwhile [16].

The category *motivation based on severity* described putting off weight-loss attempts. Reasons were many; too many things going on, too little time, too many hours at work, recently started dialysis and having to move were some of the examples. Other literature has described the same, where patients expressed contradictory feelings, and needing to get past the ambivalence to an acceptance that there is a responsibility to take action [30]. It has also been shown that individuals that engage in little or no physical activity have a perceived lower quality of life, but that if more time is spent on physical activity, this will improve quality of life and counteract procrastination[31]. In more recent literature it has been found that an increasing concern centers around socioemotional skills, especially self-control and self-regulation, with consequential poor health outcomes including obesity. Individuals with higher hyperbolic rates of discounting (Hyperbolic discounting is a person's desire for an immediate reward rather than a higher-valued, delayed reward), who are considered impulsive or lacking self-control, tend to eat unhealthy diets, to drink too much alcohol, and to procrastinate when it comes to engaging in healthy behaviors, which together led to obesity [32–34].

Strengths and limitations

The patients were only interviewed once, which meant that we did not get to ask the participants follow-up questions, which would have been interesting and useful. This could have provided us with more

information and insights, and covered more ground such as emotional eating, hedonic hunger, eating as an addiction and stigma in society which is described in different literature. The opportunity to follow the patients over time and include additional interviews would also have been helpful, and is suggested for future studies. The patients were interviewed over the phone by someone they had never interacted with before, which could have lowered the confidence they had in describing their difficulties in something as personal as weight issues. It is possible that more in-depth answers would have been reached had the interviews been face-to-face. Additionally, the research method and sample size limit the ability to generalize outside of the specific patient data and geographic location, though we do believe that findings are transferable to similar contexts. We tried to remain sensitive about our unavoidable preconceptions by reporting opposing views and through consideration of the research limitations.

Perspectives

On the road to discover new and additional ways to assist those affected by obesity, we learned that still much more can be done. For this specific group of patients, it was the dietary restrictions and the severe fatigue that bothered them the most. Better guidelines about what patients with a kidney disease can eat in order to both meet the dietitian's advice, but also to lose weight is warranted. More research in how to combat fatigue in this specific patient group is necessary. All the patients hope for the best, they continue to push on, even on the difficult days. How to mobilize this hope and energy that comes with it and use it for weight-loss must be researched further. A positive association between self-monitoring and weight-loss has been consistently found in previous studies, this should be further investigated in this special group of patients. The patients were all crying out for help in trying to lose weight, they expressed very strongly how much they wish to succeed, but simply need help and support to master weight-loss. Bringing and getting family members more involved could it potentially improve weight-loss outcomes, which is also something that must be discovered further. How we can support those affected, but also create or utilize motivation earlier on must be further explored.

Conclusions

In this study four categories came forward; *Restrictions and exhaustion, hope and hopelessness, support and self-discipline* and *motivation based on severity*. Diving into the minds of the patients we discovered that they all desperately want to lose weight. They are painfully aware that losing weight is necessary to get a kidney transplant. The patients express that they want help to eat better, within the restrictions that come with their kidney disease. They want support from their surrounding community to exercise more, and they do not want to take on the weight-loss battle on their own. They want a partner or a group that can keep them motivated.

List Of Abbreviations

BMI

body mass index, CKD:Chronic kidney disease, ESKD:End-stage kidney disease

Declarations

Ethical approval and consent to participate

The research protocol was approved by The University of Copenhagen. Ethical approval was not necessary according to Danish law since this was an interview study [15]. This study was part of a Master's thesis which is protected under the data laws of The University of Copenhagen. All participants received a participant information sheet; they subsequently signed an informed consent form prior to participation.

Consent for publication

Not applicable

Availability of data and materials

Transcripts of interviews are stored in electronic format on secure servers at The University of Copenhagen. All data generated during analysis in the study are also stored on these servers; where deemed necessary for publication, they have been included in this published article. All methods were carried out in accordance with relevant guidelines and regulations.

Competing interests

No potential conflict of interest was reported by the authors.

Funding

NA

Authors contribution

JF was the primary author; contributed to conception, design, acquisition, conduction of interviews, checked transcripts for accuracy, analysis, interpretation of data, drafting of the manuscript and all revisions; HK contributed to conception, design, analysis, interpretation of data, drafting of the manuscript and all revisions; KL included the participating patients, checked transcripts for accuracy and all revisions; DH contributed to design, drafting of the manuscript and all revisions; All authors approved the submitted version and have agreed to be personally accountable for their own contributions and to ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated, resolved, and documented in the literature.

Acknowledgements

We thank all the participating patients for sharing their thoughts with us.

References

1. **Chronic kidney disease and chronic kidney failure. 2020.**
[<https://www.sundhed.dk/sundhedsfaglig/laegehaandbogen/nyrer-og-urinveje/tilstande-og-sygdomme/nyresygdomme/kronisk-nyresygdom-og-kronisk-nyresvigt/>]. Accessed Dec 2020
2. Vaidya SR AN **Chronic Renal Failure.** In: StatPearls. Florida. StatPearls Publishing; 2020.
3. KDIGO: **Transplantation.** In: *Official Journey Of The Transplantation Society & International Liver Transplantation Society.* vol. 104; 2020: 106.
4. Hoogeveen EK, Halbesma N, Rothman KJ, Stijnen T, van Dijk S, Dekker FW, Boeschoten EW, de Mutsert R. **Obesity and mortality risk among younger dialysis patients.** *Clin J Am Soc Nephrol.* 2012: doi: 10.2215/cjn.05700611.
5. González AL, Pérez RG, Soto JB, Castillo RF. **Study of weight and body mass index on graft loss after transplant over 5 years of evolution.** *Int J Med Sci.* 2020: doi: 10.7150/ijms.47000.
6. Guzmán GE, Victoria AM, Ramos I, Maldonado A, Manzi E, Contreras-Valero JF, Mesa L, Schweineberg J, Posada JG, Villegas JI *et al.* **Risk Factors Related to New-Onset Diabetes after Renal Transplantation in Patients of a High Complexity University Hospital in Colombia, 20 Years of Experience.** *Int J Endocrinol.* 2020: doi: 10.1155/2020/8297192.
7. Cacciola RA, Pujar K, Ilham MA, Puliatti C, Asderakis A, Chavez R. **Effect of degree of obesity on renal transplant outcome.** *Transplant Proc.* 2008: doi: 10.1016/j.transproceed.2008.05.085.
8. Hsu CY, Vittinghoff E, Lin F, Shlipak MG. **The incidence of end-stage renal disease is increasing faster than the prevalence of chronic renal insufficiency.** *Ann Intern Med.* 2004: doi: 10.7326/0003-4819-141-2-200407200-00007.
9. Lentine KL. **Pro: Pretransplant weight loss: yes.** *Nephrol Dial Transplant.* 2015: doi: 10.1093/ndt/gfv324.
10. **Kidney Transplantations.** 2020. [<https://nyre.dk/wp-content/uploads/2014/12/Bilag-2.-Nyretransplantationer-pixi.pdf>]. Accessed Dec 2020
11. Wing RR, Phelan S. **Long-term weight loss maintenance.** *Am J Clin Nutr.* 2005: doi: 10.1093/ajcn/82.1.222S.
12. Curran SP, Famure O, Li Y, Kim SJ. **Increased recipient body mass index is associated with acute rejection and other adverse outcomes after kidney transplantation.** *Transplantation.* 2014: doi: 10.1097/TP.0b013e3182a688a4.
13. Hsieh HF, Shannon SE. **Three approaches to qualitative content analysis.** *Qual Health Res.* 2005: doi: 10.1177/1049732305276687.
14. Elo S, Kyngäs H. **The qualitative content analysis process.** *J Adv Nurs.* 2008: doi: 10.1111/j.1365-2648.2007.04569.x.
15. **National Committee on Health Research Ethics: What Projects Should I Report**
[<https://www.nvk.dk/forsker/naar-du-anmelder/hvilke-projekter-skal-jeg-anmelde>]. Accessed Dec 2020

16. Byrne S, Cooper Z, Fairburn C. **Weight maintenance and relapse in obesity: a qualitative study.** *Int J Obes Relat Metab Disord.* 2003: doi: 10.1038/sj.ijo.0802305.
17. Rand K, Vallis M, Aston M, Price S, Piccinini-Vallis H, Rehman L, Kirk SFL. **"It is not the diet; it is the mental part we need help with." A multilevel analysis of psychological, emotional, and social well-being in obesity.** *Int J Qual Stud Health Well-being.* 2017: doi: 10.1080/17482631.2017.1306421.
18. Christensen BJ, Iepsen EW, Lundgren J, Holm L, Madsbad S, Holst JJ, Torekov SS. **Instrumentalization of Eating Improves Weight Loss Maintenance in Obesity.** *Obes Facts.* 2017: doi: 10.1159/000481138.
19. Lambert K, Mullan J, Mansfield K. **An integrative review of the methodology and findings regarding dietary adherence in end stage kidney disease.** *BMC Nephrology.* 2017: doi: 10.1186/s12882-017-0734-z.
20. Gregg LP, Jain N, Carmody T, Minhajuddin AT, Rush AJ, Trivedi MH, Hedayati SS. **Fatigue in Nondialysis Chronic Kidney Disease: Correlates and Association with Kidney Outcomes.** *Am J Nephrol.* 2019: doi: 10.1159/000500668.
21. Davey CH, Webel AR, Sehgal AR, Voss JG, Huml A: **Fatigue in Individuals with End Stage Renal Disease.** In: *Nephrol Nurs J.* vol. 46; 2019: 497–508.
22. **10 Signs You May Have Kidney Disease.** 2020.
[https://www.kidney.org/news/ekidney/august14/10_Signs_You_May_Have_Kidney_Disease].
Accessed Dec 2020
23. AN. V, EO. B, GP C. **Obesity-Related Sleepiness and Fatigue.** *Annals of the New York Academy of Sciences.* 2006: doi: <https://doi.org/10.1196/annals.1367.023>.
24. Panossian LA, Veasey SC. **Daytime sleepiness in obesity: mechanisms beyond obstructive sleep apnea—a review.** *Sleep.* 2012: doi: 10.5665/sleep.1812.
25. Duggal D, Sacks-Zimmerman A, Liberta T. **The Impact of Hope and Resilience on Multiple Factors in Neurosurgical Patients.** *Cureus.* 2016: doi: 10.7759/cureus.849.
26. Downman TH. **Hope and hopelessness: theory and reality.** *J R Soc Med.* 2008: doi: 10.1258/jrsm.2008.080193.
27. Gibbs WW: **Treatment That Tightens The Belt.** In: *Sci Am.* 1995: 34–35.
28. Thomas SL, Hyde J, Karunaratne A, Herbert D, Komesaroff PA. **Being 'fat' in today's world: a qualitative study of the lived experiences of people with obesity in Australia.** *Health Expect.* 2008: doi: 10.1111/j.1369-7625.2008.00490.x.
29. Lean MEJ, Astrup A, Roberts SB. **Making progress on the global crisis of obesity and weight management.** *Bmj.* 2018: doi: 10.1136/bmj.k2538.
30. Brown I, McClimens A. **Ambivalence and obesity stigma in decisions about weight management: A qualitative study.** *Health.* 2012: doi: 10.4236/health.2012.412A224.
31. Codina N, Pestana JV, Valenzuela R, Giménez N. **Procrastination at the Core of Physical Activity (PA) and Perceived Quality of Life: A New Approach for Counteracting Lower Levels of PA Practice.** *Int J*

Environ Res Public Health. 2020: doi: 10.3390/ijerph17103413.

32. Narisada A, Suzuki K. **Association between procrastination, white-collar work and obesity in Japanese male workers: a cross-sectional study.** *BMJ Open*. 2019: doi: 10.1136/bmjopen-2019-029931.
33. Story GW, Vlaev I, Seymour B, Darzi A, Dolan RJ. **Does temporal discounting explain unhealthy behavior? A systematic review and reinforcement learning perspective.** *Front Behav Neurosci*. 2014: doi: 10.3389/fnbeh.2014.00076.
34. Barlow P, Reeves A, McKee M, Galea G, Stuckler D. **Unhealthy diets, obesity and time discounting: a systematic literature review and network analysis.** *Obes Rev*. 2016: doi: 10.1111/obr.12431.