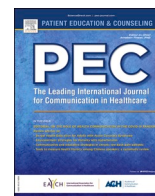




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The self-regulation skills instrument in transplantation (SSIt): Development and measurement properties of a self-report self-management instrument

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ABSTRACT

Objective: To develop a self-management instrument for organ transplant recipients that incorporates self-regulations skills and to determine its measurement properties.

Methods: The instrument includes concepts from social cognitive models: problem awareness, attitude, self-efficacy, motivation, social support, goal setting, goal pursuit, skills and goal affect. The measurement properties were evaluated based on the COSMIN guidelines. Face and content validity were determined through patient assessment, Three-Step Test-Interview and expert assessment using the Content Validity Index. Structural validity and reliability were tested using exploratory factor analysis and Cronbach's alpha. Construct validity was tested by comparing subscales with the Health Education Impact Questionnaire (heiQ).

Results: After face and content validity assessment 47 items were entered into the exploratory factor analysis. The analysis showed two meaningful factors, with internal consistency of 0.90 and 0.89. Spearman correlations between the subscales and heiQ were moderate (0.55; 0.46). The final version consists of 21 items, divided into two scales: 'Setbacks' and 'Successes'.

Conclusions: The Self-regulation skills instrument in transplantation (SSIt) is a valid and reliable instrument to assess necessary skills for self-management after transplantation and may be useful for other patients as well.

Practice implications: Insight into self-regulation competencies can help healthcare professionals to tailor self-management support.

Abbreviations: COSMIN, Consensus-based Standards for the selection of health Measurement INstrument; CVI, Content Validity Index; KTR, Kidney transplant recipient; heiQ, Health Education Impact Questionnaire; NVN, Dutch Kidney Patient Society (acronym for: Nierpatiënten Vereniging Nederland); PAM, Patient Activation Measure; PIH, Partner In Health scale; SSIt, Self-regulation skills instrument in transplantation; TSTI, Three-Step Test-Interview.

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1. Introduction

After organ transplantation recipients can face physical, emotional and social challenges. These challenges include dealing with the medication regime and its possible side-effects, psychological consequences, such as symptoms of anxiety and/or depression and adjusting to life after organ transplantation [1]. Self-management skills are needed in order to effectively manage these challenges. Self-management can be defined as “the individual’s ability to manage the symptoms, treatment, physical and psychosocial consequences and life style changes inherent in living with a chronic condition” [2]. Lorig and Holman (2003) indicate that there are three types of self-management task: medical/behavioral management, role management and emotional management [3]. In order to carry out these tasks, self-management skills are needed. These authors describe six core self-management skills: problem solving, decision making, resource utilization, formation of a patient-provider partnership, action planning, and self-tailoring. [3]. However, in order to carry out successful self-management, self-regulation skills are also required [4]. Self-regulation can be defined as “goal-guidance process, occurring in iterative phases, that requires the self-reflective implementation of various change and maintenance mechanisms that are aimed at task- and time-specific outcomes” [5]. According to the Self-regulation theory this process is divided in three phases [5]. The first phase is goal selection and goal-setting [5]. The second phase is active pursuit and the third phase is goal attainment and maintenance, or when necessary disengagement of the goal [5]. Self-regulation skills therefore include setting realistic and achievable goals, self-efficacy for goal pursuit, monitoring of progress, adaptive coping with goal frustration and where necessary goal adjustment or disengagement.

Adequate self-management skills are beneficial for patient outcomes, such as medication adherence and quality of life [6,7]. However, becoming aware of the challenges, goal setting, making action plan and achieving the goal can be difficult for recipients. Individuals tend to vary in their self-regulation skills, for example in level of goal orientation, goal framing and self-efficacy [8]. However, self-regulation skills are seen as the basic principles for effecting change [4]. By gaining insight into the self-regulation skills of the recipients, better support can be offered, but also an understanding can be created into why goals or plans succeed or fail. Self-management support should focus on medical and psychosocial aspects, as recipients have stated in previous research that they wish to receive support not only on medical aspects [9].

Currently available measures of self-reported self-management, such as the health education impact questionnaire (heiQ) [10], focus to a lesser extent on self-regulation, such as setting a goal, making a plan to achieve this goal, adjusting the plan as needed and goal conflicts. Since self-regulation is an essential component of self-management, it is important to map these skills to tailor self-management support. In addition, to measure the effect of behavior change interventions that focus on improving these self-regulation skills, self-management instruments focusing on self-regulation are required. Existing instruments mainly focus on self-regulation skills in education [11], health promotion (e.g. smoking cessation) [12], or are aimed at specific groups such as young adults [13]. As such, these tools are not focused on self-regulation among those with chronic conditions and specifically not on organ transplant recipients. Therefore a specifically designed instrument to measure self-regulation skills in the context of organ transplantation could make an important contribution. To fill this gap, the purpose of this study was to develop such a self-report self-management instrument that includes self-regulation skills in the context of organ transplantation and to determine the measurement properties of this instrument.

2. Material and methods

2.1. Development of self-report instrument

The CONsensus-based Standards for the selection of health Measurement INSTRUMENT (COSMIN) were used to evaluate the measurement properties of the Self-regulation skills instrument in transplantation [SSIt] [14]. A graphical overview of the steps conducted and the data used can be found in Fig. 1. The development, data collection and evaluation of the measurement properties took place between March 2019 and May 2022. For this manuscript, the instrument was translated into English according to the method described by Wild [15]. This English version is for this manuscript only and not validated. The English version of the SSIt can be found in the Supplemental file attached to this manuscript.

2.2. Item pool development and selection

To develop the SSIt items we opted for a reflective conceptual model, which included concepts from social cognitive models of behavior change [16] and self-regulation theory [5]. The predefined concepts used for item development were problem awareness, attitude, self-efficacy, motivation, social support, goal setting, goal pursuit and goal conflict. These concepts formed the basis for the original 78 items. The first version consisted of many items reflecting these concepts and the intention was to reduce the item pool during the process. This approach was chosen because we wanted to allow the experts and patients to highlight the most important items and preferred language use.

2.3. Face and content validity

The drafted items were assessed to determine the face and content validity. For a visual overview of the steps conducted, see Fig. 1. Face validity can be defined as “the degree to which a measurement instrument, indeed, looks as though it is an adequate reflection of the construct to be measured” [17]. Content validity can be defined as “the degree to which the content of a measurement instrument is an adequate reflection of the construct to be measured” [17]. First, the experts were asked to give their first impression and comments on the items (face validity). To determine the content validity, the drafted items were scored on relevance by a group of eight experts using the Content Validity Index (CVI) [18]. The experts had varying professional backgrounds, they were nurse practitioners with experience in transplantation care, psychologists, nurse researchers with experience in self-management, self-regulation or transplantation, and physicians working in transplant care. Experts independently scored each item from ‘1’ (not relevant at all) to ‘4’ (highly relevant) and gave comments on the items to assess face validity. After scoring the items, results were analysed by calculating the CVI on item level (I-CVI). The I-CVI is defined as the number of experts giving a rating of either 3 or 4. An item is considered relevant with a proportion of ≥ 0.78 .

In addition, a convenience sample of kidney transplant recipients (KTRs) from the outpatient clinic was asked to evaluate the face validity of the items. Inclusion criteria were that the recipient had to be proficient with the Dutch language, older than 18 years of age and had undergone a kidney transplant in the past. In fifteen-minute individual sessions, the KTRs were asked to evaluate the instrument by telling their first impression and to comment if concepts, words and questions were understandable.

The feedback of the KTRs and experts formed the basis for revision of the instrument. In addition, a brainstorming session was held to discuss the results. After revision, two KTRs via the Dutch Kidney Patient Society (Nierpatiënten Vereniging Nederland (NVN)) were asked to give their opinion on the new version (face validity). Subsequently, the expert group was asked to reassess the instrument using the CVI-methodology again (content validity). Finally, a new convenience

sample of KTRs at the outpatient clinic were asked to complete and evaluate the revised instrument to test for content validity, using the Three-Step Test-Interview (TSTI) [19]. Inclusion criteria were that the recipient had to be proficient with the Dutch language, older than 18 years of age and had undergone a kidney transplant in the past. Nine KTRs completed the consent form and six of them participated. TSTI is a method to assess the quality of a self-report questionnaire using three steps [20]. In the first step, the Think Aloud method was used, whereby recipients completed the instrument and were asked to think aloud. The interviewer collected data by observing the behaviour and listening to verbal expressions. The interviewer could make notes so that anything that remained unclear could be discussed in the second step. The second step was a focused interview, in which gaps of the first step could be clarified. In the third and last step, pre-determined, standardized questions about the instrument were asked about what recipients think of the instrument, if there were items and/or words unclear, is the instrument was too short or long, if they had suggestions about the layout. In addition, some questions that were the result of the CVI and initial recipients' interviews were posed (face validity). After determining the face and content validity, the second version of the instrument was

created to further test the structural validity, reliability and construct validity.

2.4. Structural validity, reliability and construct validity

Organ transplant recipients were asked to complete the instrument in order to conduct an exploratory factor analysis (structural validity), reliability (internal consistency and item-total correlation) and to test hypotheses (construct validity). For an overview of the recipients socio-demographic characteristics, see Table 1. Structural validity can be defined as “the degree to which the scores of a measurement instrument are an adequate reflection of the dimensionality of the construct to be measured” [17]. We aimed to include a minimum of 200 recipients based on the rule of thumb for factor analysis described by Kline (2013) stating that four to ten participants per item are required, with a minimum of 100 patients [21].

The questionnaire was built in the data collection module LimeSurvey for electronic distribution. The questionnaire link was distributed anonymously through the NVN. Basic socio-demographic information were collected, namely age, sex, educational level and time

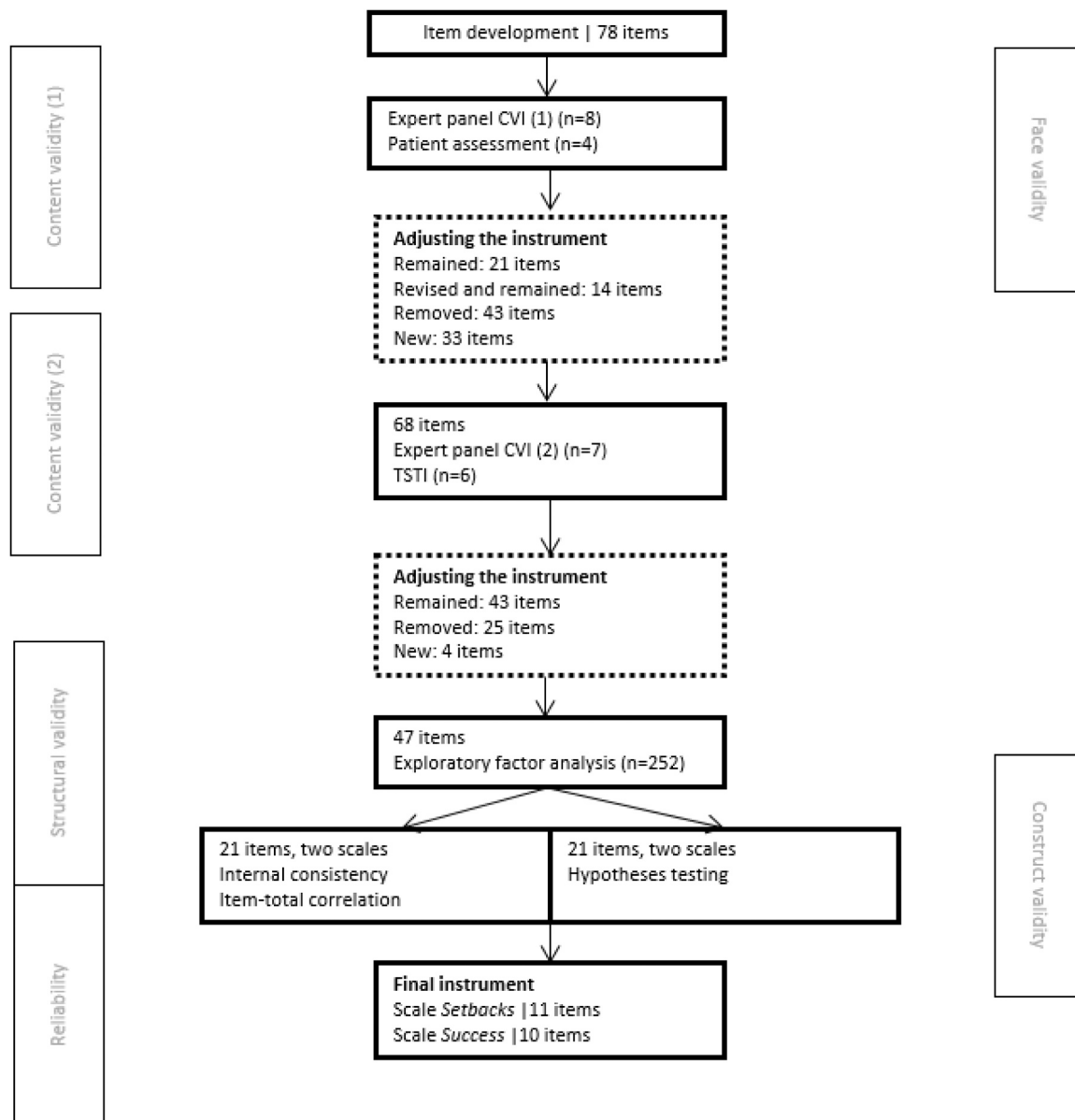


Fig. 1. Graphical overview of study process and results. CVI: Content Validity index; TSTI: Three-Step Test-Interview.

Table 1
Descriptive statistics of socio-demographic characteristics of the recipients.

	Total (n = 252)	NVN (n = 84)	aanZET study (n = 168)
Age			
Median (IQR)	58 [46–65]	59 [47–67]	57 [44–64]
Sex			
Male (%)	104 (56.8)/ 79 (43.2)	35 (42.7)/ 47 (57.3)	69 (68.3)/ 32(31.7)
Female (%)			
Education level			
Low (%)	83 (32.9)	13 (15.5)	70 (42.2)
Middle (%)	76 (30.2)	23 (27.4)	53 (31.5)
High (%)	93 (36.9)	48 (57.1)	46 (26.8)
Organ type*			
Heart (%)	12 (4.8)	-	12 (7.1)
Kidney (%)	227 (90.1)	84 (100)	143 (85.1)
Liver (%)	8 (3.2)	-	8 (4.8)
Lung (%)	9 (3.6)	-	9 (5.4)
Time since transplantation			
0–12 months (%)		4 (4.8)	168 (100)
1–3 years (%)		13 (15.5)	-
4–10 years (%)		33 (39.3)	-
≥ 10 years (%)		34 (40.5)	-

NVN: Dutch Kidney Patient Society (acronym for: Nierpatiënten Vereniging Nederland); IQR: Interquartile range

* Multiple response

since transplantation. The NVN invited recipients via their online panel. Additionally, in order to include sufficient participants, the responses of the baseline measurement from the aanZET study [22] were used. The aanZET study is a multicentre stepped wedge randomized controlled trial in which a self-management intervention will be tested [22]. Within this study the pre-final version of the instrument was part of the questionnaires distributed to the participants.

2.4.1. Construct validity

To test the construct validity, the instrument was compared with an existing measure of self-management. Construct validity can be defined as “the degree to which the scores of a measurement instrument are consistent with hypotheses, e.g. with regard to internal relationships, relationships with scores of other instruments or differences between relevant groups” [17]. The heiQ [23] was used for this comparison, as two scales of this instrument felt plausible based on their background. The heiQ is a self-report instrument for patient education and self-management interventions for people with chronic condition. The 40-item Dutch version of the heiQ consists of eight domains, namely; Health directed activity, Positive and active engagement in life, Emotional distress, Self-monitoring and insight, Constructive attitudes and approaches, Skills and technique acquisition, Social integration and support and Health service and navigation. The heiQ was used for this comparison, as two scales had conceptual similarities. Although the heiQ focus on a lesser extent on self-regulation, the scale ‘Emotional distress’ contains items that show similarities with the items within the Setbacks scale. For the Successes scale we saw similarities with the scale Self-monitoring and insight.

2.5. Data analysis

The data analysis was performed using SPSS version 28.

2.5.1. Structural validity

For the exploratory factor analyses, the principal component analyses with varimax rotation was used. First, we conducted the analysis to identify the relative contribution of each factor using a scree plot. We

checked for the inflection of the line in the Scree plot. The factors left of the inflection were considered meaningful, and factors on the horizontal line after the bend were assumed to account for only a small amount of variance and were removed. Second, the items with a loading factor < 0.5 and items that loaded > 0.3 on more than one factor were removed, to be able to perform a forced factor analysis with the remaining items.

2.5.2. Reliability

Internal consistency is defined as “the degree of interrelatedness among the items” [17]. Internal consistency of the scales were assessed by calculating the Cronbach’s alpha. A Cronbach’s alpha between 0.70 and 0.90 was considered acceptable [14]. The item-total correlation was used to assess whether or not the items discriminate patients on the construct. An item-total correlation > 0.3 was considered satisfactory [24].

2.5.3. Construct validity

We hypothesized the following correlations between the scales of the SSIt and the scales of the heiQ:

H1. . We expected a positive, moderate ($r = 0.4–0.6$), correlation between ‘Setbacks’ and ‘Emotional distress’.

H2. . We expected a positive, moderate ($r = 0.4–0.6$), correlation between ‘Successes’ and ‘Self-monitoring and insight’.

The hypotheses testing was conducted using the Spearman rank order correlation coefficient.

3. Results

For a visual overview of the results see Fig. 1.

3.1. Face and content validity

3.1.1. Patient assessment

According to the KTRs, the first impression of the draft instrument was that it consisted of too many items and some items, within the predefined concepts, were overlapping. Wording of the items was deemed understandable. Saturation was achieved after individual sessions with four KTRs.

3.1.2. Content validity index – first version

The first version contained 78 items which were assessed by eight experts using the CVI-methodology. Twenty-one items had a proportion ≥ 0.78 (I-CVI) and remained in the instrument. Of the 24 items with an I-CVI between 0.67 and 0.78, 14 items were revised and 10 items were removed based on the feedback of experts on the content and phrasing. In addition, 33 items with an I-CVI < 0.67 were removed. The overall comments of the experts on the items with a I-CVI < 0.67 was that the wording was vague or that the items overlapped with other items. However, after removing 43 items some of the predefined concepts were insufficiently represented, therefore we developed 33 new items. This resulted in a second version containing 68 items.

3.1.3. Content validity index – second version

The 68 items were assessed a second time by the same seven experts using the CVI-methodology. Of the 68 items, 63 items had a proportion ≥ 0.78 (I-CVI).

3.1.4. Three-Step Test-Interview and patient assessment

Six KTRs gave their opinion about the second version of the instrument using the TSTI method. The results of the TSTI showed that the items were understandable and that KTRs did not have problems completing the questions. However, the main conclusion was that the instrument was mainly focused on active behavior change after organ

transplantation, while some recipients are not actively engaged in behavior change. Moreover, the instrument gave the impression that there is a life before and after organ transplantation, while KTRs did not experience this in real life. In addition, a clear instruction for completing the instrument was missing.

After the second round of CVI and TSTI, the instrument was revised. Of the 68 items, 25 were removed due to a I-CVI < 0.78 or feedback of KTRs. Four new items were developed, because the predefined concepts were insufficiently represented. We also added instructions on how to complete the instrument, as this was missed by the KTRs. The pre-final version consisted of 47 items and was used to test the structural validity, reliability and construct validity.

3.2. Structural validity, reliability and construct validity

The NVN invited 221 KTRs to participate in our study. Of this group, 84 KTRs completed the instrument, which is a response rate of 38%. We also used the responses to these items from the baseline data in the aanZET study [22]. Of the 215 organ transplant recipients who were invited, 168 completed the questionnaire (response rate 78%). Together this resulted in N = 252 completed questionnaires. The socio-demographic characteristics of these participants are described in Table 1.

3.2.1. Structural validity

The Scree plot (Fig. 2) of the exploratory factor analysis showed that two factors appeared to be meaningful. Items with a factor loading of > 0.50 on factor 1 or factor 2 remained in the instrument and items that loaded high on both factors (>0.30) were deleted. One item did not meet this criterion, but was retained in the instrument. This was chosen because the concept of social support was insufficiently represented. This is item 17 in the final version. Subsequently, a forced two-factor analysis was conducted with the remaining 21 items. Table 2 describes the result of the analysis, in which was found that all items load either on the first or the second factor. Items 8 and 13 loaded high on both factors, but we decided to keep these in the instrument, due to their valuable contribution to the instrument. Items within factor 1 can be summarized as ‘Setbacks’ with the process of goal setting, initiating a plan to reach the goal, and dealing with setbacks. The items within factor 2 can be summarized as ‘Successes’ in the process of goal setting, intrinsic motivation for initiating the plan, and self-efficacy.

3.2.2. Reliability

The scale ‘Setbacks’ had an item-total score between 0.47 and 0.75 and a Cronbach’s alpha of 0.90. The scale ‘Successes’ had an item-total score between 0.51 and 0.74 and a Cronbach’s alpha of 0.89.

3.2.3. Construct validity

Both hypotheses could be confirmed as the correlation between the

Table 2

Factor loading for forced two factor analysis after Varimax rotation.

Items	Setbacks	Successes
1. I find it difficult to know how to set a new goal	.632	-.200
2. I am aware that I sometimes slip back into my old behavior	.574	.054
3. If I set a goal it is difficult for me to take action	.680	-.225
4. I am not sure if I am going to succeed in achieving my goal	.681	-.247
5. If there is no progress towards achieving my goal then I start having doubts that I will succeed	.680	-.178
6. Once I have made a plan it is difficult for me to start working on it	.731	-.213
7. The transplantation has made it difficult for me to work on my goals	.617	-.344
8. It makes me insecure if I do not manage to achieve my goal	.812	-.094
9. I get frustrated if I do not manage to achieve my goal	.786	.010
10. Frustration from setbacks stops me working on my goals	.739	-.074
11. Setbacks cause me stress	.723	-.051
12. I am confident that I can set new goals after my transplantation	-.280	.687
13. If I set a goal, it is because it is something I want	-.238	.631
14. I am motivated to work on my goals	-.350	.671
15. I feel supported by friends and/or family when I am working towards my goal	-.297	.518
16. I know which people have a positive influence on achieving my goals	-.107	.701
17. After my transplant, I have set one or more goals	.009	.674
18. I keep an eye on whether I am getting nearer to my goals	-.205	.664
19. Progress towards my goals gives me a good feeling	.068	.834
20. Progress towards my goals gives me energy to go on	.016	.845
21. Achieving my goal gives me energy to set new goals	-.088	.797
Eigenvalue	7.603	3.578
Variance explained before Varimax rotation	36.2%	17.0%
Variance explained after Varimax rotation	27.6%	25.7%
Total variance explained	53.2%	

subscales and the heiQ scales for hypothesis 1 and 2 was respectively 0.55 (95% CI 0.45 – 0.77) and 0.46 (95% CI 0.33 – 0.57).

4. Discussion and conclusion

4.1. Discussion

The aim of this study was to develop and test the measurement properties of the SSIt, a self-report self-management instrument that incorporates self-regulations skills in the context of an organ transplantation. The face and content validity were found to be acceptable after which the second version was developed and tested.

The final instrument is an adjusted version of the first version. During the process of developing and testing the measurement properties extensive changes were made. The process started with a conceptual model and the first item pool consisted of a lot of items, in order to find the most suitable and understandable items. After the process of testing the face validity and content validity several items were removed or replaced due to wording, understandability or being too similar to other items. However, at that point some of the pre-defined concepts were insufficiently represented and new items had to be developed. After another round of testing the face validity and content validity, the second version was made. For this version, the structural validity was tested through exploratory factor analysis, after which the items within the meaningful factors were tested on reliability and content validity. The correlations found with existing self-management questionnaires confirmed construct validity. There was a positive association between these two measures within the range of 0.4 – 0.6. Higher correlations were not expected given that the heiQ [23] does not incorporate self-regulation skills. The final version of the instrument consists of 21 items, divided into two scales, namely ‘Setbacks’ and ‘Successes’. The

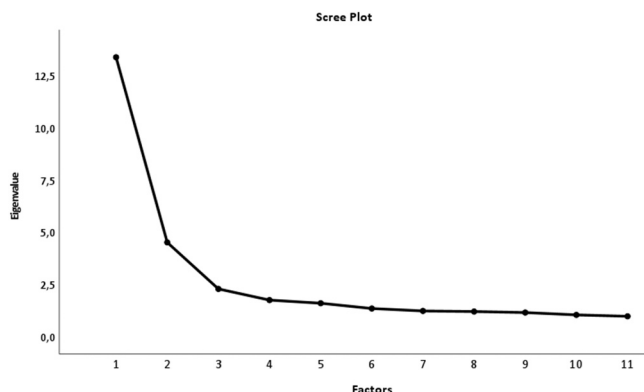


Fig. 2. Scree plot of exploratory factor analysis.

variance explained was 53%, and although there are no established guidelines, it is often seen in social science that a variance explained between 50% and 60% is considered acceptable [25]. The instrument was changed during the process of testing the measurement properties, but we believe that the pre-defined concepts are sufficiently represented and is therefore a useful instrument.

The overall strength of this study is that we developed and thoroughly tested the measurement properties of a new instrument using the rigorous COSMIN methodology. Self-management support is an important task of healthcare professionals, in particular of nurses. As all organ transplant recipients are different, their need for support differs. As one size does not fit all, a tailored patient-centred approach would be most suitable. This instrument can be a starting point for determining how to personalize self-management support.

Another strength is the involvement of transplant recipients during the process of development and testing. During the different stages, recipients were asked to give their opinion on the comprehensibility and usability of the instrument. Through collaboration with patients we did not develop an instrument that was solely based on a conceptual model and input of professionals, but one that fits the patients experience.

Apart from the strengths there are also some limitations that may influence the findings. For the validation process, we used the data from questionnaires completed by participants recruited by the Dutch Patient Society (NVN) and baseline data of participants of an intervention study, the aanZET study. Self-selection bias can therefore be a risk, as the response rate was lower than in other survey studies [26]. However, the sample size is large enough for variation in the answers.

With regard to the composition of the sample, the level of education is generally higher among the NVN group than in most studies within the transplant population. In addition, NVN transplant recipients may be more engaged with their disease process and health as they are members of a patient organization. Also, we note that they had a higher education level than the second sample. While this could potentially influence the results, we paid specific attention to comprehensibility in the earlier stages of the study in which we tested face and content validity and found the instrument understandable and usable. In addition, we see that this only applies to the NVN group and not to the aanZET group. For the entire group this is equally distributed. The distribution of the organ types shows that kidney transplantation is over represented compared to the other organ types. Nevertheless, it was decided to keep all recipients in the dataset, because self-regulation skills do not necessarily vary between different groups, but depend on the individual. In addition, self-regulation is not specifically focused on the medical condition, but the skills can also be used for reaching psychosocial goals. This is not linked to the specific transplanted organ. Since this assumption was not tested within this study due to insufficient power, follow-up research should investigate further potential similarities and differences in self-regulation skills among recipients of the various organs.

Although this instrument was developed to gain insight into self-regulation competencies of organ transplant recipients, we believe that an adapted version of this instrument could also be valuable for studies among other groups of individuals with a chronic condition. For people with a chronic condition it is also necessary to self-manage their life in order to deal with the consequences of their condition. For both healthcare professional and patients, it could be helpful to learn more about the self-regulation competencies in order to personalize the self-management support. Further research could focus on determining the measurement properties for the groups of people with a chronic condition. In addition, further research could focus on testing the responsiveness, as this was not within the scope of this study. Responsiveness is defined as “the ability of an instrument to detect the change over time in the construct to be measured” [17]. After testing responsiveness, the SSIt could be a useful instrument in intervention research, to evaluate effectiveness of self-management promoting interventions.

4.2. Conclusion

In conclusion, we developed a valid and reliable instrument to measure self-regulation skills necessary for self-management. The instrument developed in the context of organ transplant may be useful for other chronic patients as well. Results of the completed instrument provides information about recipients skills in goal setting, attitude after reaching goals or setbacks, motivation, planning and commitment to the plan and emotional reactions. These topics can then be discussed and adequate support can be offered to promote self-management skills.

4.3. Practice implications

After organ transplantation recipients can face many challenges. In order to deal with these challenges, it is important that organ transplant recipients have adequate self-regulation competencies and self-management skills. Adequate support from healthcare professionals can help recipients to develop and maintain these skills. For organ transplant recipients it can also be valuable to gain insight into their own self-regulation competencies and pitfalls, as effective self-regulation partly depends on self-monitoring [27]. The instrument that we developed and tested could give insight into these competencies. Moreover the instrument adds a new dimension to the existing self-management instruments, because it incorporates self-regulation competencies.

Ethical approval and consent

The Medical Research Ethical Committee Erasmus Medical Center approved this study on July 19th, 2019 (MEC number: MEC-2019-0444).

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CRediT authorship contribution statement

Regina van Zanten: Conceptualization, Methodology, Formal analysis, Investigation, Resources, Writing – Original draft, Writing – Review & Editing, Visualization, Project administration. **Monique van Dijk:** Conceptualization, Methodology, Investigation, Writing – Review & Editing, Supervision. **Ann Van Hecke:** Methodology, Investigation, Writing – Review & Editing. **Veerle Duprez:** Methodology, Investigation, Writing – Review & Editing. **Coby Annema:** Methodology, Investigation, Writing – Review & Editing. **Anneloes van Staa:** Methodology, Investigation, Writing – Review & Editing. **Janet M.J. Been-Dahmen:** Methodology, Investigation, Writing – Review & Editing. **Annelies E. de Weerd:** Methodology, Investigation, Writing – Review & Editing. **Louise Maasdram:** Methodology, Investigation, Writing – Review & Editing. **Marleen van Buren:** Methodology, Investigation, Writing – Review & Editing. **Erwin Ista:** Methodology, Investigation, Writing – Review & Editing. **Emma K. Massey:** Conceptualization, Methodology, Investigation, Writing – Review & Editing, Supervision, Funding acquisition.

Declaration of Competing Interest

The authors declare no conflict of interest.

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Conflict of interest

The authors declare no conflict of interest.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.pec.2023.107924](https://doi.org/10.1016/j.pec.2023.107924).

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