

APPLYING THE KOHLMAN EVALUATION OF LIVING SKILLS IN SLOVENIA

Alenka Plemelj Mohorič¹

¹University of Ljubljana, Faculty of Health Sciences, Ljubljana, Republic of Slovenia¹

Abstract: Kohlman Evaluation of living Skills (KELS) is an occupational therapy evaluation. It is designed to determinate a person's ability to function in basic living skills and helps identify the areas in which a person can perform and those in which the persons needs assistance. Seventeen living skills are tested under five areas: Self-Care, Safety and Health, Money Manegement, Transportation and Telephone and Work and Leisure. The poupose of our researches were do identiffy areas in which people with mental health disorders and elderly needs assistance. In the first research, 2013, we comparised two group of participants, aged between 25 and 65: group 1 were 120 participants with no diagnosis of mental health disability, group 90 participants with diagnosed long-term mental health disability. Another three researchs, 2016 and 2020, we were evaluated the everyday activities among 84 older participants. All mentally healthy subjects in the first research were assessed as "Independent" and only 48 subjects from group with mental health disability were assessed as "Independent. Mann-Whitney U test in this research states that there are significant differences in the execution of all activities between the group 1 and group 2. According to the obtained results from older participants problems occur in knowing emergency numbers, identiyng dangerous situations, handling money, mobility and participation in leisure activities. KELS can be used to assess the daily living skills needed and to provide a quick overview of the older person's functioning. It is a great help to the multi-disciplinary team in planning occupational therapy treatment and finding a way to stay after discharge from hospital. Professional help is only reasonable in the individual's own environment.

Key words: living skills, assessment, functionig, level of assistance, environment

Introduction

According to the definition of the World Health Organization, life skills are defined as the abilities for adaptive and positive behaviour that enable people to effectively cope with the needs, demands and challenges of life [17]. They contribute to people functioning independently as part of a community. **European Association for the Education of Adults present life skills as:** "Life skills are a constituent part of capabilities for life and work in a particular social, cultural, and environmental context. The types of life skills emerge as a response to the needs of the individual in real life situations". They identified eight components linked to the concept of life skills: »basic skills (numeracy, literacy, digital), personal and interpersonal

capabilities (that include some of, but not only, the so-called soft skills), civic capabilities, financial capabilities, health capabilities, and environmental capabilities« [3].

In occupational therapy treatment, life skills represent a criterion for independent functioning in the community [1]. The focus of the occupational therapy is to support the reintegration of individuals in daily living skills as well as to increase their independence and autonomy in their life environment. Since the life skills includes a wide range of abilities that enable a person to perform personal care, health care and more complicated tasks such as leisure activities, home management, money management, community mobility and participation etc., occupational therapists provide life skills training programs [1]. Many studies in different countries have shown that life skills of people with mental health disability are significantly lower compared to those of people with no mental health problems. Most of the studies that have researched the use of evaluation instrument Kohlman Evaluation of Living Skills – KELS [6], were carried out in American states such as Kansas, North Carolina and Florida; there are also some studies from other countries like Israel and Iran [5, 16].

The Kohlman Evaluation of Living Skills, designed by Linda Kohlman Thomson in 1978, is one of the formal common evaluations of occupational therapy which can assess a person's ability to function in basic living skills. While originally designed for psychiatric patients, has been used in mental health and general rehabilitation settings, with all ages of adults. With the many changes the applicability of the KELS in other intervention settings has grown dramatically. In 2011 Robnett and Kohlman Thomson started the updating process of the third edition of the KELS (Kohlman Thomson and Robnett, 2016). The majority therapists feedback agreed that the fourth edition of the KELS, which was published by AOTA 2016, was easy to use and had clear directions for OT treatment and the results of testing were helpful for discharge planning.

In the Kohlman Evaluation of Living Skills, 13 living skills (17 in the third edition) in five areas of self-care, safety and health, money management, transportation and telephone, work and leisure are assessed through interview, observation, and doing tasks. The goal of evaluation is to provide valuable information used to match a living environment with a person's strengths, enabling the person to live safely in the least restrictive environment possible." [6,7].

In Slovenia, the third edition of KELS was used for the first time in 2013. Until 2023, the use of KELS in Slovenia was developed and researched. In 2018, the fourth edition of KELS was translated and adapted, only this one was used in 2019. The Slovenian translation of KELS, fourth edition and its adaptation was published with the permission of AOTE in 2023 by the Slovenian Association of Occupational Therapists.

The purpose of our researches were answer are important differences in activities carried out by healthy people and by people with mental health disability. We were interesting to identify areas in which people with mental health disorders and older adults in Slovenia needs assistance. An additional aim of the research, was to explore

the potential of the slovene translation the of KELS, fourth edition, for occupational therapy treatment planing.

Materials and methods

Quantitative research method was used. For analysis the SPSS 20 statistical program were used. The reliability of the assessment instrument was measured with Cronbach coefficient α .

The KELS, 3rd edition, assessment tool was used among mentally ill and healthy people Slovenia 2013, and 2016 next time among older adults. In 2019, we used the Slovenian translation of the fourth version of the KELS assessment.

Participants

The first study, 2013, included two groups, aged between 25 and 65. Group 1 comprised 120 people with no diagnosis of mental health disability and were selected via personal acquaintances. Group 2 comprised 90 people with diagnosed long-term mental health disability. 8 community psychiatric treatment participant, aged 32 to 75 years, were assess with KELS in 2018. 84 older adults with and without disability participation were assess in life skills 2016 and 2019. 20 of them were from the geropsychiatric ward at psychiatric hospital. More information about the subjects is presented in Tables 1 and 2.

Study protocol

Translation of the KELS assessment instrument from English into Slovenian was allowed by American Occupational Therapists Association (AOTA). The instrument was adapted to Slovenia. In both editions, the area of money management, telephones and mobility was adapted and in fourth edition we adapted pictures, and electronic bank application. By adapting these activities, we used characteristics appropriate to the Slovenian population. The comprehensibility and clarity of assessment instrument were checked with a control group of 30 people.

The healthy participants were selected via personal acquaintances and participants with disability selected via collaboration with non-governmental organisations, psychiatric hospitals, and other health organisations. Three surveys were conducted for the purpose of the diploma project, in other studies, occupational therapists were the assessors.

All participants signed a statement of voluntary participation. The assessment tool was used as per the instructions. The first research 2013 was reviewed and approved by the National Medical Ethics Committee of the Republic of Slovenia (NMEC) (number 66/12/12; date Dec 27, 2012).

Assessment instrument

The data were gathered with the KELS assessment instrument. The use of this instrument includes interviews, questions, and the execution of task. KELS is simple to used and takes 30-45 minutes. The results should guide the therapist towards treatment that allows a client to be as independent as possible. Seventeen different daily activities in third edition and thirteen are tested from five different areas of life: self-care, safety and health, money management, transportation and telephone, work

and leisure. KELS entails two different types of scoring – “Independent” and “Needs help”, and additionally, “Not feasible” and “Notes”. From the results of the assessment, a result is calculated in 3rd edition. In the “Summary”, which is added in the fourth edition, the assessors determines whether the client needs assistance in any areas and level of assistance. In the second part of “Summary” the evaluator recommends a type of living situation.

Results

Table 1 presents all published studies in Slovenia using the KELS assessment of life skills in people with different kind of mental health disorders.

Table 1. Presentation of research on the use of KELS assessment among people with mental health disorders

Authors	Purpose of research	Methodology	Sample	Key findings
Ličef et al., 2014	Are important differences in activities carried out by healthy people and by people with mental health disability	Quantitative research method was used, t-test and ANOVA was used. Chronbach α = 0.67 value.	N= 210, aged between 25 and 65. Group 1: 120 people with no diagnosis of mental health disability. Group 2: 90 people with diagnosed long-term mental health disability.	The final score showed that all mentally healthy subjects were assessed as “Independent”. Only 48 subjects from group with mental health disability were assessed as “Independent”. Mann-Whitney U test states that there are significant differences in the execution of all activities between the group 1 and group 2. Independent t-test states that there is a significant difference in the time needed to complete the KELS test between group 1 and group 2. KELS assessment instrument provides a comprehensive picture of an individual’s activity, because it includes all the key areas that are important for functioning in the home environment.

Plemelj et al., 2014	Are important differences in living skills among people with long term mental health disability, who need different levels of assistance	Quantitative research method was used, t-test was used. Chronbach α = 0.67 value.	N= 90, aged between 25 and 65. Group 1 =15 hospitalized users; Group 2 = 15 outpatient ; Group 3 =60 day center users.	Hospitalized users need the most help to carry out daily activities, while day center users need the least. Statistically significant differences are evident in the following activities:awareness of dangerous household situation,identification of appropriate action for sicknes, accidents and emergencies, use of cash in purchasing itemsand use of telephone.
Petrena, 2018	Using KELS to plan OT treatment for klients with mental health disability in their home.	Quantitative research.	8 users in community psychiatric treatment aged 32 to 75 years.	Two klient are independent, the others need help in their life skills.
Mrak, 2020	Present the use of the KELS at the psychiatric hospital and to estimate its benefits to occupation therapy planning for the elderly with mental health disorders.	Quantitative and qualitative research Interview, MMSE and the KELS was used.	20 participants with mental health disorders from the geropsychiatric ward aged 65 to 83. They had all lived in their home environment before being hospitalized.	The results show that the majority of older adults need assistance with everyday activities. The Kohlman Evaluation of Living Skills plays a significant role in occupational therapy planning. The participants experienced the most problems with safety and health, handling money, mobility and using a telephone. The 4th edition of KELS provides better guidelines for designing tretment for the occupational therapist.

Table 2 presents two published studies in Slovenia using the KELS assessment of life skills among older adults.

Table 2: Presentation of research on the use of KELS assessment among older adults

Authors	Purpose of research	Methodology	Sample	Key findings
Jaklič and Plemelj, 2016	To evaluate the everyday activities among older adults and to present their performance.	Quantitative research. Chronbach α = 0,69 value. Chi-Square Test was used.	34 older people , 17 men and 17 women,aged over 65 years do, none had organized help for life skills.	The obtained average evaluation by KELS tells us that the participants in the research have the borderline necessary skills for their independent life A statistically significant correlation was found between age and the assessment of needing help..
Plemelj et al, 2020	Identifies the activities with which individuals need assistance, also how much assistance they receive from their environment. We were check how clear and useful the Slovene translation of the 4th edition	Quantitative research. Chronbach α = 0,65 value	30 participants older than 65 years. 13 were without a disability, 10 with lower ability and 7 with a mental health disorder.	The results showed that all of the participants needed assistance with identifying dangerous situations, handling money, using the telephone and participation in leisure activities. Participants with mental health disorders need more help. 4th edition of KELS is clear and is, in comparison the 3 rd edition, more effective for the planning of occupational-based therapeutic intervention.

The first research Ličef et al., [8] showed that people with mental health disorders need more help than mentally healthy people. The difference in the performance is statistically significant, as shown in Table 3.

Tabela 3. Calculation of average values (M) for individual statements of both groups and display statistically significant differences calculated by the Mann-Whitney U test [8]

	Average value (M)		Mann-Whitney
	N = 210		U test
	Group 1	Group 2	
	N = 120	N = 90	Value
1.Frequency of self- care activities	0.008	0.08	0.031
2.Apperance	0.016	0.24	0.00
3. Awareness of dangerous household situations	0.08	0.52	0.00
4. Identification of appropriate action for sickness, accidents	0.08	0.43	0.00
5. Emergency numbers	0.15	0.3	0.09
6. Knowledge of location of medical and dental facilities	0.00	0.02	0.085
7.Use of cash in purchasing items	0.07	0.32	0.00
8. Obtain and maintain source of income	0.04,	0.22	0.00
9. Food budget	0.17	0.35	0.02
10. Spending your monthly income	0.15	0.6	0.00
11. Withdrawing money and payment forms	0.05	0.5	0.00
12. Payment of bills	0.02	0.14	0.00
13.Mobility within community	0.03	0.23	0.00
14.Basic knowledge of public transit system	0.008	0.07	0.89
15 Use of telephone	0.11	0.62	0.00
16. Plans for future employment	0.00	0.00	0.013
17. Leisure activity involvement	0.07	0.24	0.402
Total			0.00

Among older adults without and with different disability, people with chronic mental health disorders need the most help (Plemelj et al., 2020). Participants with mental health disorder and older adults participants in all researches need the most help with money management, safety and health, mobility and telephone [4, 10, 13, 14].

Table 4 presents the evaluation with the third version of the KELS, the total sum of the evaluations is given. This defines the ability of a person to live alone (total score is < 4.5) or to need help for daily activities (total score is > 6.0). Table 5 shows the assessment of ten participants with the fourth version of the KELS. The number of activities where the participant was evaluated with the score: need assistance is shown, and a summary score, where the occupational therapist determines the level of assistance needed (see legend). The updated, fourth version of the KELS assessment, gives clearer and more useful guidelines for planning OT treatment than the third

version, with a summary and assessment of the level of help needed [10,14]. Occupational therapists and team members note that the 4th edition of the KELS assessment provides excellent guidelines for life planning after discharge from hospital. The summary takes into account a person-centred approach and contemporary orientations for quality of life in the home environment.

Table 4: KELS assessment results, 3rd [9]

Participant	Age	MMSE value	Total score of KELS	Score of KELS
1	78	27	3	independent
2	76	27	3,5	independent
3	82	24	4	independent
4	70	28	5	need assistance
5	70	28	3	independent
6	70	27	4	independent
7	66	24	7,5	need assistance
8	69	29	0	independent
9	78	29	3	independent
10	70	30	2	independent

Legend for Table 4:

A total score of 6-17 indicates need for assistance to live in community. A total score of 4.5 or less indicates a client is capable of living independently. 5 and 5,5 total score indicates more an accurate additional assessment are needed assessment instruments are needed.

Table 5: KELS assessment results, 4rd [9] edition [9]

Participant	Age	MMSE value	Number of activities, assess need help with KELS	Score of KELS in Summary from 1 to 4
1	65	30	7	3
2	70	28	5	3
3	65	23	3	2
4	69	27	5	2
5	74	28	1	1
6	75	23	8	3
7	65	30	3	2
8	72	29	9	3
9	71	24	4	2
10	79	29	2	2

Legend for Table 5:

Summary in KELS-1: has the skills to be able to live alone; -2: is safe and meets the basic needs of life if living alone with weekly or monthly help with the activities listed; -3: able to live alone with daily assistance with specified activities to be safe and meet the basic needs of life; - 4: needs 24-hour assistance all days of the week to meet basic living needs and to be safe

The MoCa assessment of cognitive function cannot accurately assess the level of cognitive impairment and the ability to live independently. The authors of the study [11] point out that the KELS assessment instrument is a much easier and quicker way to get closer to a realistic assessment of an individual's functioning. The authors of the Slovenian study [10] make a similar point, as the KELS provides significantly more information about an individual's functioning and functional cognition than the Mini Mental Status Examination (MMSE). Older participants with the MMSE score do not show cognitive problems, while the results of the KELS assessment show that they need help for their everyday functioning.

Research on the use of the KELS assessment instrument in Slovenia confirms that it is an appropriate assessment for assessing if older adults with and without disability needs help in life skills and for a quick general overview of their functioning. In Texas, another survey was done in 2009, in which 200 people over 65 participated study demonstrated the convergent validity of KELS with a battery of cognitive, affective, executive, and functional measures often used to determine older adults' ability to live safely and independently in the community. KELS may be a valid and pragmatic alternative to screen for the capacity to live safely and independently among older adults. [2]. Also Mercer et al. [9] found out, the KELS has been translated into several languages and shown to be valid across different cultural groups and settings for older adults. The KELS is psychometrically sound for the older adult population, confirms adequate to excellent validity measures [9].

Conclusion

The assessment instrument showed that people with mental health disability have problems executing daily activities in the home environment and that they need help. Older adults demonstrate many difficulties in life skills, so the KELS is a very recommended assessment for planning their treatment. Occupational therapists assessed that KELS 4 edition is clear to use and provides good information.

KELS has shown good reliability in Slovenian research, validity needs to be studied in the future. Occupational therapists in Slovenia are familiar with KELS but rarely use it, despite training in 2014, 2016, 2022. With the expansion of community treatment, interest in KELS is growing, as life skills are key to independent functioning.

References

- [1] Abaoğlu H, Buket Cesim O, Kars S, Çelik Z. Life Skills in Occupational Therapy. 2017. Available from <http://dx.doi.org/10.5772/intechopen.68462>
- [2] Burnett J, Dyer CB, Naik AD. Convergent Validation of the Kohlman Evaluation of Living Skills as a Screening Tool of Older Adults' Ability to Live Safely and Independently in the Community. Arch Phys Med Rehabil. 2009; 90 (11), 1948–52.
- [3] European Association for the Education of Adults -EAEA [homepage on the Internet] (EAEA.org., 018/03/072018). Available from: <https://esrea.org>
- [4] Jaklič N, Plemelj A. Ocenjevanje življenjskih aktivnosti pri starejših. Ljubljana: Zdravstvena fakulteta. 2016.
- [5] Kazazi L, Karbalaee – Noori A. Assessment of Living Skills in Schizophrenic Patients by Kohlman Evaluation. Zahedan J Res Med Sci. 2012;(9): 14–8.
- [6] Kohlman TL. The Kohlman Evaluation of Living Skills. 3th ed. United States of America: American Occupational Therapy Association. 1992.
- [7] Kohlman Thompson L, Robnett R H. The Kohlman evaluation of living skills. 4th edition. American Occupational Therapy Association. 2016.
- [8] Ličef A, Pulec L, Plemelj A. Izvajanje vsakodnevnih aktivnosti pri osebah z motnjo v duševnem zdravju. Zrela leta slovenske delovne terapije: zbornik prispevkov z recenzijo/urednica Marija Tomšič. Ljubljana: Zdravstvena fakulteta. 2014.

- [9] Mercer C, Turnbull V, Saake S, Terman A, Heidi Fischer H, Ehrlich-Jones L. Measurement Characteristics and Clinical Utility of the Kohlman Evaluation of Living Skills Among Older Adults. Arch Phys Med Rehabil. 2020;101(1):p. 173- 17.
- [10] Mrak T. Uporaba Kohlmanovega ocenjevanja življenjskih spretnosti pri starejših z motnjami v duševnem zdravju. V Plemelj Mohorič, Alenka (ur.). Delovnoterapevtsko ocenjevanje oseb z motnjo v duševnem zdravju: zbornik znanstvenih in strokovnih prispevkov izobraževanja delovnih terapevtov v Psihiatrični bolnišnici Idrija, 7. februar 2019. Ljubljana: Zbornica delovnih terapevtov Slovenije - strokovno združenje. 2020.p. 61-71.
- [11] Nasreddine Z, Philips N, Bédirian V, Charbonneau S, Whitehead V, Collin I, Cummings J, Chertkow H. The Montreal Cognitive Assessment, MoCA: A Brief Screening Tool for Mild Cognitive Impairment. J A Geriatric S.2005; p. 53: 695–9.
- [12] Petrena R. Vključitev delovnega terapevta v skupnostno obravnavo: magistrsko delo. 2018. Available from from: <https://dk.um.si/>
- [13] Plemelj A, Filipič I, Milavec Š, Platnar A. Ocenjevanje izvedbe vsakodnevnih aktivnosti pri osebah z motnjo v duševnem zdravju. Z delovno terapijo do aktivnega življenja: zbornik prispevkov 7. kongresa delovnih terapevtov Slovenije. Ljubljana: Zbornica delovnih terapevtov Slovenije - strokovno društvo: 2014;p.51–61.
- [14] Plemelj Mohorič, A, Ličef, A, PulecL, Platnar A. Kohlmanovo ocenjevanje življenjskih spretnosti pri starejših, pilotna študija slovenske priredbe četrte izdaje: V: Plemelj Mohorič, Alenka (ur.). Delovnoterapevtsko ocenjevanje oseb z motnjo v duševnem zdravju: zbornik znanstvenih in strokovnih prispevkov izobraževanja delovnih terapevtov v Psihiatrični bolnišnici Idrija, 7. februar 2019. Ljubljana: Zbornica delovnih terapevtov Slovenije - strokovno združenje. 2020; p.44-60.
- [15] Robnett RH, Bliss S, Buck K, Dempswy J, Gilpatric H, Michaud K. Validation of the Safe at Home Screening with Adults Who have Acquired Brain Injury. Occup Ther Health Care. 2016;30(01):16–28. Cited in PubMed, PMID 26053430. DOI: [10.3109/07380577.2015.1044691](https://doi.org/10.3109/07380577.2015.1044691)
- [16] Zimnavoda T, Weinblatt N and Katz N. Validity of the Kohlman Evaluation of Living Skills (KELS) with Israeli elderly individuals living in the community. Occup Ther Inter. 2002; 9(4), p. 312-25.
- [17] What is the World Health Organization definition of life skills? available from: <https://www.who.int>

UPOTREBA KOHLMANOVE PROCJENE ŽIVOTNIH VJEŠTINA U SLOVENIJI

Alenka Plemelj Mohorič¹

¹Univerzitet u Ljubljani, Zdravstveni fakultet, Zdravstvena pot 5, Ljubljana
Republika Slovenija

Sažetak: Kohlman Evaluation of Living Skills (KELS) je evaluacija radne terapije. Dizajniran je da odredi sposobnost osobe da funkcionira u osnovnim životnim vještinama i pomaže u identifikaciji područja u kojima osoba može djelovati i onih u kojima je osobama potrebna pomoć. Sedamnaest životnih vještina testira se u pet oblasti: briga o sebi, sigurnost i zdravlje, upravljanje novcem, transport i telefon i rad i slobodno vrijeme. Svrha našeg istraživanja bila je identificirati područja u kojima je osobama s mentalnim poremećajima i starijim osobama potrebna pomoć. U prvom

istraživanju, 2013 godine, uporedili smo dvije grupe učesnika starosti između 25 i 65 godina: grupa 1 je bila 120 učesnika bez dijagnoze duševnih bolesti, grupa 90 učesnika sa dugotrajnom dijagnostikom u duševnom zdravlju. U dve druge, 2016 u 2020, smo ocjenjivali svakodnevne aktivnosti među 84 starijih sudionika. Svi duševno zdravi sudionici u prvim istraživanjima tako da su bili ocijenjeni kao »neovisni«, jednako ocijenjeno je bilo samo 48 osoba iz grupe koje su smetnjama u duševnom zdravlju. Mann-Whitney U test u ovom istraživanju otkriva da postoje značajne razlike u izvođenju svih aktivnosti između grupe 1 i grupe 2. Prema rezultatima dobijenim kod starijih sudionica javljaju se problemi u poznavanju brojeva za hitne slučajeve, prepoznavanju opasnih situacija, rukovanju novcem, mobilnost i sudjelovanje u slobodnim aktivnostima. KELS se može koristiti za procjenu potrebnih svakodневnih životnih vještina i za brzi pregled funkcioniranja starije osobe. To je od velike pomoći multidisciplinarnom timu u planiranju radno-terapijskog tretmana i pronalaženju načina da ostane nakon otpusta iz bolnice. Stručna pomoć ima smisla samo u individualnom okruženju osobe.

Ključne riječi: životne vještine, procjena, funkcionisanje, nivo pomoći, okruženje