

## **Progress in Health Goals and Treatment Recommendations of Diabetes Mellitus Patients: The Influence of Motivation, Self-Efficacy, Effort, and Challenge**

Monika Hricová

Pavol Jozef Šafarik University in Košice, Faculty of Arts,  
Department of Psychology, Košice, Slovak Republic

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### Abstract

The current guidelines for improving the care of people with type 2 diabetes (diabetes mellitus) suggest that doctors should also inform patients about the necessity of achieving health-related diabetes goals. A patient's ability to successfully achieve health-related goals and treatment recommendations could improve their health and decrease the risk of diabetes-related complications. The present study aims to explore if the selected goal/recommendation characteristics (motivation, self-efficacy, effort, and challenge) support the progress in health-related goals and recommendations. A study was performed with 120 patients diagnosed with type 2 diabetes from the Centre for Diabetes Treatment at the L. Pasteur University Hospital in Košice, Slovakia. The participants responded to questions about health goals, treatment recommendations and obstacles with items assessing motivation, effort, challenges, self-efficacy, and progress. The results showed that patients with diabetes were more likely to make successful progress when health-goals were autonomous and recommendations were autonomous or controlled motivated. There was a significant effect of patients' effort and efficacy on progress in both goals and recommendations. With increasing years of diabetes, the recommendations and goals' autonomous motivation significantly decreased while recommendation effort increased. Goals and recommendation challenge did not predict progress. The results suggest that interventions should focus on encouraging want-to motivation, self-efficacy and professionals evaluate patients' effort.

*Keywords:* diabetes mellitus, health goals, treatment recommendation, self-regulation, motivation, self-efficacy

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### Introduction

The current guidelines for improving the care of people with diabetes mellitus suggest that doctors should not only inform patients about glucose control as the main

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✉ Monika Hricová, Faculty of Arts, Department of Psychology, Pavol Jozef Šafarik University in Košice; Moyzesova 9, 04059 Košice. Slovak Republic. E-mail: [monika.hricova@upjs.sk](mailto:monika.hricova@upjs.sk)

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example of treatment recommendation but also about the necessity of achieving health-related diabetes goals (California Healthcare Foundation, 2003). Self-regulation can be defined as the process which involves setting a goal, engaging in goal-directed behaviour, monitoring progress towards the goal and adjusting a person's behaviour when sufficient progress towards the goal is not being made (Baumeister & Heatherton, 1996). Therefore, a patient's ability to successfully self-regulate could improve their health and decrease the risk of diabetes-related complications. A patient's self-regulation activity does not end with seeking and following goals but continues with the need to follow doctor's orders and recommendations (Terry & Leary, 2011). The purpose of this article is to explore if the selected goal/recommendation characteristics (motivation, self-efficacy, effort, and challenge) support the progress in health-related goals and recommendations. Each of the goal-related characteristics should help with effective progress in achieving the goals and recommendations as opposed to the failure of self-regulation.

Diabetes mellitus type 2 is a major health problem that presents a huge challenge for the health care system (Zimmet et al., 2014). It is a metabolic disorder and complex chronic disease whose prevalence is increasing. Zimmet (2017) expects that the number of cases worldwide will result in 300 million patients by 2025. One major problem of diabetes is that people are at high risk of developing a variety of complications due to inadequately controlled diabetes including retinopathy, nephropathy and coronary heart disease (Zhang et al., 2001). The recommended diabetes treatment is therefore an optimal combination of non-pharmacological and pharmacological approaches. Pharmacological interventions include the necessary literacy of insulin therapy, glycemic self-monitoring and the possible consequences of hypo/hyperglycemia (Vozár, 2005). Non-pharmacological interventions are based on achieving healthy lifestyle goals (Masaryková, 2017) in terms of optimal eating, drinking and the exercise regime of patients. Vozár (2005) has observed that there is a negative correlation between adherence to non-pharmacological interventions and the risk of diabetes-related complications.

The patient with diabetes is expected to perform treatment recommendations and to pursue non-pharmacological goals. Increasing patient involvement in daily care responsibilities can improve health behaviour, actual health status, decrease complications and even the number of hospitalizations (Von Korff, 1997). The voluntary setting and achieving of goals or treatment recommendations represent a form of self-regulation activity which is one way that people attempt to change their behaviour (Webb & Sheeran, 2006). Self-regulation is an essential part of an individual's healthy functioning. It helps them to create and actively achieve goals. Self-regulation could simply be characterized as a conscious, purposeful, and continuous effort by an individual in the direction of reaching a distal goal. Processes based on the principles of self-regulation naturally support the maintenance of health and prevention of diseases (Baumeister et al., 2007; Rasmussen et al., 2006). Self-regulation helps an individual to finish their passive role as the recipient of health care and start with active participation. It allows them to take responsibility for their

health and self-care by actively achieving health-related goals (Maes & Karoly, 2005).

However, Ferrer and Klein (2015) have clarified that an individual will only pursue health-related goals in specific situations of perceived increased health risk conditions. The general wishful desire to “be healthy” often does not have a specific cognitive representation in the human mind and is therefore not formulated in the form of a specific goal (Heckhausen, 1991). A patient must have and set a goal to work towards which promotes or protects their health. Setting personal goals can assist people in organizing and enhancing their lives through directing attention and action (Deci & Ryan, 2008). After selecting a goal, successful self-regulation requires patients to engage in behaviours that move them towards the goal. The increased subjective perception of threat motivates an individual to set, monitor, and also successfully achieve health-related goals (Heckhausen, 1991). Gordon et al. (2009) have explained that the decision to actively participate in treatment determines the initial stage of the disease, the period when the patient occurs the first symptoms and is first informed about treatment. In particular, the presence of emotions such as fear or anger at the initial stage has a positive effect on the promotion of health-related behaviour (Axelsson et al., 2013). In addition, Zhang et al. (2001) have pointed out that the likelihood of adhering to treatment recommendations is unpredictable by patients with a chronic disease. Type 2 diabetes is a chronic disease and therefore active participation in treatment through adhering to recommendations and achieving non-pharmacological goals as a form of self-regulation may be questionable.

Milyavskaya et al. (2015) have added that selected goal characteristics significantly determine the process of engaging in self-regulation behaviour. Successful goal progress is dependent on particular properties of the goals themselves (Werner et al., 2016). Research suggests that the characteristics of a goal will influence how goal pursuit is regulated and whether it will meet with success (Ryan et al., 1996). Goal progress itself promotes goal attainment because it helps people identify discrepancies between the current and desired state, for example, people are asked to rate how much progress they have made towards their goal (Koestner et al., 2008). This allows them to recognize if additional effort or self-control is needed to reduce any discrepancies (Harkin et al., 2016).

Previous research has identified many selected goal characteristics that increase the likelihood of goal success and progress in a variety of health, academic and work domains (Fernet et al., 2004; Zhang et al., 2014). These include pursuing goals that are specific, challenging or effortful (Locke & Latham, 2002) as well as being autonomous rather than controlled (Sheldon & Elliot, 1999). Motivation, as the reason why a goal is selected and achieved, has been the most studied characteristic in connection to goal progress (Koestner et al., 2008; Sheldon & Elliot, 1999). Autonomous motivation reflects a person’s genuine interest and enjoyment with regards to a pursued goal (Ryan & Deci, 2000). In contrast, controlled motivation is activated from external pressures such as feelings of shame or attaining external

benefit (Ryan & Deci, 2000). Autonomous motivation is associated with better goal pursuit and goal progress (Koestner et al., 2008), general higher persistence and enhanced performance (Fernet et al., 2004). On the other hand, the results for controlled motivation are mixed. Most research has claimed that it is commonly not related to goal progress (e.g. Koestner et al., 2008; Ryan et al., 1996). Besides exploring the relationship between both autonomous motivation and controlled motivation and goal progress, positive goal progress has also been related to goal self-efficacy (Naar-King et al., 2006). When an individual believes that they can implement behaviour that leads to desired results, that motivates them to achieve the chosen goal (Axelsson et al., 2013).

While many studies have investigated goal pursuit, most of them are based on student samples and explicitly instruct participants to describe general, not a domain-specific goal. To the best of our knowledge, there has been no other published study which has examined the specific characteristics of treatment recommendations and compared them to health-related goals in a special group of patients. Treatment recommendations can be understood as specific forms of health-related goals. Therefore, theories of self-regulation can also be applied to support their adherence. The present study will explore the contribution of selected goal/recommendation characteristics (motivation, self-efficacy, effort, and challenge) on progress in health-related goals and recommendations among patients with Type 2 diabetes. The associations of goal/recommendation characteristics with overall progress will be also examined. In the present study, the focus will be on an unexamined construct - treatment recommendations in the studies of goal attainment.

## Method

### Participants

The sample consisted of 120 participants, previously diagnosed with Type 2 diabetes mellitus, who were attending scheduled visits to the Center for Diabetes Treatment at the L. Pasteur University Hospital in Košice, Slovakia. The patients participating in the study were enrolled according to a population-based, consecutive-case principle. Participation was voluntary. The Hospital Ethics Committee had previously approved the study protocol (2878/1, of January 2019) and all patients provided written informed consent before starting the study.

The following were considered as the exclusion criteria: the inability to provide informed consent, disagreement with participating in the study, the inability to understand the questionnaire due to cognitive problems, inability to provide accurate anamnestic medical history data, or any other condition which could lead to biases in the results. Demographic and clinical characteristics for which data were collected included age, gender, marital status, educational level, and duration of illness. The mean age of the enrolled patients was 56 years ( $SD = 4.83$ , range 37–82), and 72.0%

were female. The majority of individuals were married (78%). The majority of the subjects had high school education (75%), basic compulsory education was in 6 patients and university education level was reported by 20 patients. The mean duration of diabetes was 8 years (minimum 1 year, maximum 30 years).

## Measurements

*Health goal and treatment recommendations.* At the initial assessment, participants were asked to think about and describe one diabetes-related goal and one treatment recommendation that they had been trying to accomplish. Some of the goals listed by participants included “move more”; “stay healthy”; “lose 5 kg,” and “maintain self-sufficiency”. As for recommendations, participants listed “follow diabetes diet”; “glycemic control” and “regular doctor visits”. After each goal and recommendation, participants were asked to rate the selected goal/recommendation characteristics: motivation for pursuing that goal/recommendation; challenge, effort; and goal/recommendation self-efficacy. Reliability was analysed in terms of internal consistency with McDonald’s omega (Dunn et al., 2014).

To measure *Motivation type 2 diabetes*, two separate scales of autonomous motivation (combining intrinsic, integrated and identified regulation) and controlled motivation (combining introjected and extrinsic regulation and amotivation) were used (Milyavskaya et al., 2015; Sheldon & Elliot, 1999). All items were rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Both subscales were reliable; goal  $\omega = .73$  and recommendation  $\omega = .72$  for want-to motivation, goal  $\omega = .82$  and recommendation  $\omega = .81$  for have-to motivation.

*Self-efficacy.* Self-efficacy was assessed using three items rated on a 7-point scale: e.g. “I’m sure I can achieve this goal” (Pomaki et al., 2009). The McDonald’s  $\omega = .86$  for goals and  $\omega = .87$  for recommendation.

*Effort.* Participants rated their agreement with one item for each goal and recommendation representing effort: “I have tried really hard to achieve this goal” on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*) (Milyavskaya et al., 2015).

*Challenge.* Participants rated their agreement with one item for each goal/recommendation representing challenge: “Attaining this goal/recommendation is a challenge for me” This was rated on a scale of 1 (*not at all*) to 7 (*extremely*) (Werner et al., 2016).

*Goal progress.* Participants were asked to rate how much progress they had made towards their health-related goal/treatment recommendation with three items (e.g. “I have made a lot of progress towards this goal” or “I feel like I am on track with my goal plan”) on a 7-point Likert scale ranging from strongly disagree to strongly agree (Koestner et al., 2008). The McDonald’s  $\omega = .88$  for goals and  $\omega = .89$  for recommendation.

## Analytic Procedure

The descriptive data are presented using means and standard deviations. Comparisons between the goals and recommendation characteristics were conducted using a dependent sample *t*-test. The omega coefficients were computed in Jamovi 0.9.2.8. The collected data were part of a bigger project related to goal-directed behaviour and overcoming goal-related obstacles. Nevertheless, the presented pattern of results is unique to this study.

## Results

Table 1 presents the means and standard deviations for all the variables. Patients reported significantly higher autonomous motivation for their health-related goals than for their treatment recommendations  $t(119) = 7.30, p < .001$ . In addition, they reported significantly higher controlled motivation for treatment recommendations  $t(119) = 10.7, p < .001$ . The amount of effort needed to achieve a goal was significantly higher compared to recommendation effort  $t(119) = 7.46, p < .001$ . Participants described that they needed less effort in pursuing their recommendation. There were no significant differences in goal vs recommendation challenge, self-efficacy, or progress.

**Table 1**

*Goals and Recommendations Characteristics*

	Goal				Recommendation			
	Min	Max	<i>M</i>	<i>SD</i>	Min	Max	<i>M</i>	<i>SD</i>
Autonomous motivation	5	14	10.09	2.55	2	14	7.23	3.55
Controlled motivation	2	14	7.23	3.57	5	14	10.09	2.54
Self-efficacy	1	7	5.42	1.20	1	7	5.37	1.22
Effort	1	7	5.18	1.61	1	7	3.75	1.79
Challenge	1	7	5.27	1.71	1	7	5.30	1.66
Progress	1	7	4.92	0.22	1	7	4.89	0.22

Table 2 shows that goal progress was significantly positively correlated with autonomous motivation, controlled motivation, and goal-related challenge. None of the other correlations were found to be statistically significant. Recommendation progress was significantly positively correlated with all the recommendation characteristics except autonomous motivation. According to the Bayes factor, concerning recommendation progress, there is anecdotal evidence for null regarding autonomous motivation. The duration of disease was significantly negatively correlated with goal autonomous motivation ( $r = -.25, p = .003$ ) and goal progress ( $r = -.20, p = .02$ ). With increasing length of having diabetes, the recommendation's autonomous motivation significantly decreased ( $r = -.2, p = .001$ ), while the amount of spent effort increased ( $r = .20, p = .03$ ).

**Table 2**  
*Correlation of Study Variables*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Autonomous motivation goal	—											
2. Controlled motivation goal	-.35**	—										
3. Efficacy goal	.04	-.36**	—									
4. Effort goal	-.13	-.39**	-.29**	—								
5. Challenge goal	.14	.31**	.03	-.17	—							
6. Goal progress	.19**	.30**	-.03	.03	.38**	—						
7. Autonomous motivation recom.	.49**	-.25**	-.05	.03	.38**	.39**	—					
8. Controlled motivation recom.	-.27**	.67**	.19*	-.05	.26**	.38**	-.25**	—				
9. Efficacy recommendation	.06	.25**	.73**	-.26**	.36**	.52**	.11	.09	—			
10. Effort recommendation	-.04	-.11	-.27**	.51**	-.06	.12	.14	.07	-.21*	—		
11. Challenge recommendation	-.21*	.36**	.39**	-.26**	.56**	.38**	.34**	.40**	.40**	.03	—	
12. Recommendation progress	.22*	.25**	.23*	.03	.02	.74**	.04	.37**	.36**	.18*	-.34**	—
13. Duration of disease	-.25*	.15	-.02	.06	-.14	-.20*	-.27*	.18	-.13	.20*	-.04	-.13

\* $p < .05$ ; \*\* $p < .01$ .

Linear regression analyses were used to examine the causation of selected health-related goal features and treatment recommendation characteristics with goal and recommendation progress. Two regressions were carried out; one for health-related goals and the second for treatment recommendations. The regression model for health goals was significant and demonstrated that goal characteristics account for 42% of the variation in goal progress  $F(5, 114) = 16.7, p < .0001, R^2_{adj} = .39$ . As indicated in Table 3, autonomous motivation, goal self-efficacy and goal effort statistically significantly positively predicted goal progress,  $p < .05$ . Additionally, the regression model for recommendation was significant and predicted 37% of the variance of recommendation progress from motivation, effort, efficacy and challenge  $F(5, 114) = 13.6, p < .0001, R^2_{adj} = .34$ . All variables, except challenge, remained as significant predictors (Table 4).

**Table 3***Regression Coefficients of Goal Characteristics on Goal Progress*

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	$\beta$
Intercept	0.278	2.329	0.119	.905	
Autonomous motivation	0.219	0.098	2.227	.028	.172
Controlled motivation	0.231	0.159	1.448	.150	.126
Self-efficacy	0.702	0.114	6.137	<.001	.531
Effort	0.715	0.197	3.614	<.001	.284
Challenge	0.337	0.234	1.439	.153	.119

**Table 4***Regression Coefficients of Recommendation Characteristics on Recommendation Progress*

Predictor	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	$\beta$
Intercept	3.823	2.174	1.758	.081	
Autonomous motivation	0.331	0.099	3.325	.001	.267
Controlled motivation	0.411	0.142	2.874	.005	.236
Self-efficacy	0.414	0.102	4.032	<.001	.338
Effort	0.487	0.189	2.563	.012	.198
Challenge	0.112	0.243	0.459	.647	.042

## Discussion

The present study has examined the effect of selected goal/recommendation characteristics on progress in goals and treatment recommendations. The results of the study indicate that motivation plays an important role in overall goal/recommendation progress. Whereas health-related goals were found to be autonomously motivated, treatment recommendations had significant higher controlled motivation. In particular, autonomous motivation was positively



associated only with progress in health-related goals, while controlled motivation was related to progress in goals and treatment recommendations. Patients with diabetes mellitus were more likely to make successful progress when health-goals were autonomous, although recommendation progress was predicted by autonomous as well as controlled motivation.

It is of interest to find that controlled motivation improves recommendation progress. This is in contrast to Koestner et al. (2008) who found that controlled motivation does not relate to overall progress in the goal-striving process. Opposed to Koestner and his colleagues, researchers with a more behavioural focus (Epton et al., 2017) promote supportive programs to motivate and boost goal progress. People who are high in controlled motivation could also be successful in reaching their goals because of their dominant goal mastery-orientation (Elliot & Church, 1997). Another explanation of the results is that treatment recommendations are usually initiated for external reasons such as health professionals suggesting the patient try to achieve them (WHO, 2003). Prochaska (2008) has added that health-related motivation is developing a changing state. At the beginning of treatment, in particular, it is common that controlled motivation is dominant because the patient is still not aware of the severity of the disease. Nevertheless, the results of the current study have shown that with increasing years of diabetes, the recommendation's as well as the goal's autonomous motivation significantly decreases. When health care professionals want to support patients' autonomous motivation and their progress, they should behave as a caring parent or teacher. In other words, they need to name and explain the advantages and disadvantages of the possible treatment recommendations and goals (Prochaska, 2008). From the time perspective, autonomous motivation showed greater stability over time (Koestner et al., 2008). One disadvantage of the long-term use of controlled motivation is that it damages overall well-being (Ryan & Deci, 2000).

While goal and recommendation progress were significantly positively correlated with challenge, the characteristic of challenge did not predict better progress. However, the results supported that effort predicted better progress in both goals and recommendations. The amount of effort needed to achieve the goal was significantly higher compared to the recommendation effort. However, the amount of required effort for recommendation increased with increasing length of having diabetes. This relationship was not shown for health-related goals. Recommendation effort was found to be significantly positively associated with recommendation progress while goal effort did not relate to goal progress. Wrosh and Miller (2009) have emphasized the role of effort mainly in overcoming obstacles during the self-regulation process. Even though simple actions of self-regulation could improve health and quality of life, failures of self-regulation as a result of obstacles and giving up on goal progress are common problems (Baumeister et al., 2018). Indeed, if an individual perceives obstacles as stressful, they slowly reduce the amount of effort they put in which subsequently leads to a decrease in progress. In contrast, an

increase in effort can help them overcome the obstacles and continue to achieve the goal successfully (Mann et al., 2013).

The results have also shown that perceived self-efficacy predicts better progress in both goals and recommendations. Self-efficacy is a relatively common researched variable in health goals (Axelsson et al., 2013; Naar-King et al., 2006). Naar-King et al. (2006) previously demonstrated a positive relationship between self-efficacy and progress in achieving health goals. Self-efficacy represents an individual's belief that they can implement behaviour that leads to health, and to the desired result. Therefore, self-efficacy promotes achieving the chosen goal. Axelsson et al. (2013) found that self-efficacy not only supports adherence to treatment recommendations but also promotes the patient's quality of life. Bandura (2001) has added that if one believes in himself, they are better at overcoming obstacles and unwanted challenges on the way to the goal. He goes on to explain that high perceived self-efficacy helps a person to positively evaluate events that can influence their efforts and distinguish them from circumstances determined by external, more difficult to influence variables (Bandura, 1995). Therefore, self-efficacy acts as an effective source of coping with stress and overcoming obstacles. Conversely, individuals with low self-efficacy are prone to anxiety, self-underestimation and failure in achieving a goal (Bandura, 1995). Despite the fact that the current study showed that patients with diabetes had an above-average goal and recommendation self-efficacy, health care professionals should promote patients' self-efficacy. Barinková and Mesárošová (2011) have clarified that self-efficacy can be increased by personal experience of success especially that is admired in the social environment. Therefore, in the case of supporting the self-efficacy of chronically ill patients, it is appropriate to honour their efforts so far and any small successes. The role of selected goal/recommendation characteristics as effort or self-efficacy in overcoming obstacles are ideas for future investigation.

In clinical practice, one common question is how to improve patients' adherence to health-related goals and treatment recommendations. The presented investigation has explored the predictors of selected goal/recommendation characteristics (motivation, self-efficacy, effort, and challenge) with regards to progress in health-related goals and recommendations among patients with Type 2 diabetes mellitus. The results of the study have indicated that motivation plays an important role in overall goal/recommendation progress. Patients with diabetes were more likely to make successful progress when the health-goals were autonomous, and recommendations were autonomous or controlled motivated. However, with increasing years of having diabetes, the recommendations and goal's autonomous motivation significantly decreases. The results have confirmed that effort and efficacy predicted better progress in both goals and recommendations. The good news is that with the increasing length of having diabetes, the amount a patient used effort for a recommendation increased. The study showed that patients with diabetes mellitus had an above-average goal and recommendation self-efficacy. Self-efficacy could help them positively evaluate events that can be influenced and therefore

continue in their effort in achieving goals or recommendations. In association with goal self-efficacy, we can also suggest studying the role of selected personality traits as for example the locus of control. O’Hea et al. (2009) investigated that patients who had a higher internal locus of control related to their diabetes were more likely to have greater confidence in their ability to follow their doctor’s treatment recommendations for diet, exercise, medication, and glucose monitoring and individuals with a greater internal locus of control were more likely to believe that performing said behaviours will result in better-controlled diabetes and better health outcomes. This positive effect of internal locus of control to performing recommended behaviour was also reported in patients with low self-efficacy. These results support the utility of assessing diabetes-related self-efficacy and health locus of control to understand which patients are more likely to progress in achieving goals and recommendations. In terms of goal and recommendation progress, it is also necessary to add that patients should regularly monitor their progress. This is particularly the case for diabetes patients. Masaryková (2017) has clarified that patients could experience increased daily stress due to the constant daily dietary glucose control. This can lead to the experience of several diabetic crises (Masaryková, 2017) which professionals and doctors should be aware of.

Of course, the results of this study should be interpreted with caution. The relatively small sample size and prevalence of women participants are the most significant limitation of the study. Another limitation is related to relying on short versions of the scales. However, it is worth noting that the present study was not only limited regarding space constraints and the will of participants to answer the questionnaires but also by the availability of published adaptations of the scales in the local cultural-linguistic context.

Based on the presented findings, health professionals should encourage the want-to motivation of patients and patients’ effort invested into health-related self-care. Professionals could set a friendly and open dialogue between them and the patient, ask the patient about their self-chosen goals in treatment, what their expected or perceived obstacles in treatment are as well as asking the patient about the plan on how to achieve the treatment goals and recommendations.

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## **Zdravstveni ciljevi i preporuke za liječenje bolesnika s dijabetesom: Utjecaj motivacije, samoeфикаsnosti, napora i izazova**

### Sažetak

Smjernice za poboljšanje skrbi o oboljelima od dijabetesa tipa 2 (*diabetes mellitus*) preporučaju liječnicima informiranje pacijenata o nužnosti postizanja zdravstvenih ciljeva povezanih s dijabetesom. Ostvarivanje zdravstvenih ciljeva i pridržavanje liječničkih preporuka može unaprijediti zdravlje i smanjiti razvoj komplikacija povezanih s tom bolešću. Cilj je ovoga istraživanja bio provjeriti vezu odabranih karakteristika cilja/preporuke (motivacija, samoeфикаsnost, napor i izazov) i napretka u zdravstvenim ciljevima i preporukama. U istraživanju je sudjelovalo 120 pacijenata s dijagnozom dijabetesa tipa 2 iz Centra za liječenje dijabetesa Sveučilišne bolnice *L. Pasteur* u Košicama u Slovačkoj. Sudionici su o zdravstvenim ciljevima, preporukama za liječenje i preprekama izvješćivali na temelju pitanja kojima se procjenjuju motivacija, trud, izazovi, samoeфикаsnost i napredak. Dobiveni rezultati ukazuju na to da će pacijenti s dijabetesom vjerojatnije uspješno napredovati kad su zdravstveni ciljevi autonomni, a preporuke autonomne ili kontrolirane. Dobiven je značajan učinak napora i djelotvornosti na napredak u postizanju ciljeva i preporuka. Autonomna motivacija preporuka i ciljeva značajno se smanjila s duljinom bolovanja od dijabetesa, a napor se preporuka povećao. Ciljevi i izazov preporuka nisu bili značajni prediktori napretka. Dobiveni rezultati sugeriraju da bi se intervencije trebale usmjeriti na poticanje motivacije, samoeфикаsnosti i profesionalne procjene napora pacijenata.

*Ključne riječi:* dijabetes, zdravstveni ciljevi, preporuke za liječenje, samoregulacija, motivacija, samoeфикаsnost

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