

The influence of willpower and implementation of intention on subjective evaluation of the level of achieving personal goals

Wpływ siły woli i implementacji intencji na subiektywną ocenę stopnia realizacji celów osobistych

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Medical Studies/Studia Medyczne 2019; 35 (4): 255–263

DOI: <https://doi.org/10.5114/ms.2019.91241>

Key words: willpower, implementation of intentions, personal goals.

Słowa kluczowe: siła woli, implementacja intencji, cele osobiste.

Abstract

Introduction: An important factor leading to the achievement of planned goals is the power of will and implementation of intentions. This is explained by the concepts of Julius Kuhl and Peter Gollwizer.

Aim of the research: To replicate the experiment of R. Kadzikowska-Wrzosek, referring to the impact of willpower and implementation of intentions on the subjective assessment of the extent to which personal goals have been achieved.

Material and methods: The study included 61 first-year students of the master's degree physiotherapy course of the Jan Kochanowski University in Kielce. First, the respondents completed the Julius Kuhl's Action Control Scale (ACS-90), adapted in Polish by Magdalena Marszał-Wiśniewska. The AOD/SOD and the AOF/SOF subscales were used to divide the subjects into two groups: state orientation and action orientation. Respondents were assigned to one of the two groups: Implementation (where the goal was planned to be pursued) and No Implementation.

Results: It was confirmed that the subjective evaluation of goal implementation progress is explained by willpower and is not significantly explained by the implementation of intention. Moreover, an interacting effect of the implementation of intentions and willpower in decision-making situations (AOD) was obtained, consisting of the fact that in the no-implementation group, willpower was not important for evaluating the achievement of the objective, whereas in the implementation group, higher willpower was conducive to a higher assessment of achieving the objective. These results are not fully consistent with the outcome of R. Kadzikowska-Wrzosek's experiment.

Conclusions: Based on the qualitative analysis of the goals, it can be concluded that with regard to the implementation affecting or not affecting the goal achievement evaluation, the study result was related to the specific nature of the goals, which were highly similar in persons implementing and not implementing those goals.

Streszczenie

Wprowadzenie: Stawianie przez jednostkę celów i zamiarów pociąga za sobą ich realizację. Istotnymi czynnikami, które powodują osiągnięcie planowanych zamierzeń, są siła woli oraz dokonywanie implementacji intencji. Wyjaśniają to koncepcje siły woli Juliusa Kuhla oraz implementacji intencji Petera Gollwizera.

Cel pracy: Replikacja eksperymentu R. Kadzikowskiej-Wrzosek dotyczącego wpływu siły woli i implementacji intencji na subiektywną ocenę stopnia realizacji celów osobistych.

Materiał i metody: Badania przeprowadzono wśród 61 studentów pierwszego roku stacjonarnych studiów magisterskich na kierunku fizjoterapia Uniwersytetu Jana Kochanowskiego w Kielcach. Badani najpierw wypełnili Skalę kontroli działania Juliusa Kuhla (ACS-90) w polskiej adaptacji Magdaleny Marszał-Wiśniewskiej. Do podziału badanych osób na dwie grupy – orientacja na stan vs orientacja na działanie – wykorzystano podskale AOD/SOD oraz podskale AOF/SOF. Badanych podzielono do jednej z dwóch grup: implementacja (planowano realizację celu) i bez implementacji.

Wyniki: Potwierdzono, że subiektywna ocena postępu realizacji celu jest wyjaśniana przez siłę woli oraz nie jest istotnie wyjaśniana przez implementację intencji u osób zorientowanych zarówno na stan, jak i na działanie. Ponadto uzyskano

efekt interakcyjny implementacji intencji i siły woli w sytuacjach decyzyjnych (AOD), polegający na tym, że w grupie nie stosującej implementacji siła woli nie miała znaczenia dla oceny realizacji celu, natomiast w grupie stosującej implementację wyższa siła woli sprzyjała wyższej ocenie realizacji celu. Wyniki te nie w pełni pokrywają się z wynikami eksperymentu R. Kadzikowskiej-Wrzosek.

Wnioski: Wynik badań w zakresie braku wpływu implementacji na ocenę realizacji celów był związany ze specyfiką celów stawianych przez badanych, które były wysoce podobne u osób dokonujących i niedokonujących implementacji.

Introduction

Depending on the adopted theory, the concepts such as goal, intention, plan, intent, or standard are often used interchangeably. An example is the theory of personality [1], which indicates specific features of a goal: *reality* in the scope of achievements, *activating the individual* and causing his or her *emotional involvement*, and also the *value and ability to achieve* in given circumstances. Goals may adopt hierarchical constructions; the hierarchy of goals defines the importance of both of them [2, 3]. The goals are considered valuable trigger actions of the individual in order to achieve them [4]. Assigning a specific *value* to a goal is subjective, which is linked with satisfying the needs of the individual and the community.

Just initiating an activity does not guarantee the expected result; it is also noted that a certain set of components can be attributed to the factors determining the initiation and a different one to the continuation of an activity [5]. Goals with the attributes of precision, defined as being expressed directly and leading to positive results, are more conducive to effectiveness than the objectives defined as abstract and leading to the avoidance of negative results [6].

Difficulties or even inability to achieve a goal also result from a variety of constructed goals and emerging conflicts between them [7]. If there are discrepancies (conflicts) between the goals formulated by a person and the direction of actions in order to achieve them, corrective actions may be introduced, which better match the action to the goal. This is explained by the concept of Charles S. Carver and Michael S. Scheier [8]. It assigns a prominent role to emotions, which significantly influences the path leading to a goal [9], and also affects the feeling of satisfaction with achieving the goal. Roy F. Baumeister additionally emphasises the importance of the subject's competence in action planning, adapting the action to the goal, and possibly correcting the action in relation to the specified goal [10]. Gollwitzer, on the other hand, points out that action planning helps to achieve the goal effectively. He defines the monitoring of compliance with the goal and the introduction of appropriate corrections as the implementation of intentions [11].

Gollwitzer's research aim has determined the choice of the intention implementation concept, according to which all human activities can be described by means of plans, including complete (or incomplete), simple (or complex), specific (also unspecific), and unchangeable (or flexible) plans [11]. Following

Gollwitzer *et al.*, we conclude that the action implementation is accompanied by both motivational and volitional elements. Those authors also stated that the process of undertaking the action is carried out in four phases, two of which are motivational and two are volitional. These are: the *preoperational phase* (choice between different desires), the *pre-action phase* (concentration on the implementation intention), *action phase* (implementation of the plan), and the *post-action phase* (evaluation of the result in relation to the previous intention). Distinguished phases are attributed to specific states of mind: deliberative (includes phases one and four) and implementational (assigned to phases two and three). A deliberative state of mind (as open, impartial) includes the evaluation of various possibilities and the analysis of all arguments. On the other hand, the implementational state (as cognitively narrowed, selective) defines the timescale and sequences of a given action, but at the same time, because of the implementational state of the mind, the individual is able to recognise more easily the emerging critical situations and also to include specific corrective actions. Implementation intentions maintain the activity of the individual by blocking external and internal factors obstructing the achievement of a goal, and by stopping the predicted unwanted reactions in the case of disturbances [12] such as succumbing to various temptations, the emergence of an alternative, competitive goals, improper self-regulatory competence, discouragement, or anxiety that one feels. Implementation of the intention, i.e. developing a plan, is essential for achieving the goal [11].

Implementing the intentions allows one to overcome disruptions arising from current situations, and compensates for the adverse effects of certain personality factors. It works effectively both in situations related to the motivational sphere, as well as to the efficiency of internal action control mechanisms. A so-called "delegation of control to the situation" makes it possible to counter the unfavourable impact of those mechanisms on the goal achievement. If the action plan is carefully designed, the probability of achieving the goal is higher than would otherwise be the case, regardless of currently unfavourable personality dispositions [13]. The research confirms that people who implement the intentions obtain higher evaluation rates of goal achievement than those who fail to strengthen the action with the implementation of intention [12, 14–16].

The Action Control concept by Kuhl (colloquially known as the concept of willpower) refers to the processes associated with the control of action, i.e. the processes that mediate between the goal and its implementation. Therefore, it refers to situations in which a person wishes to continue pursuing a goal (despite distractors and competitive goals) or decides to abandon the objective (due to external constraints) [17]. Difficulties in the implementation of the intention and the effectiveness of self-regulatory processes (attention effectiveness, control of information coding, control of emotions and motivation, the environment, and information processing) determine the quality of action control. When a specific intention appears, a certain effort should be made to achieve it. Therefore, the author of the intention should take into account both the number and the intensity of action tendencies that he or she generates. Kuhl emphasises the validity of the type of control activated in a given action and distinguishes between the *catastatic* and *metastatic* type of control. Furthermore, he assigns a specific activation factor to each type of control. Thus, the activation of the metastatic control type is the orientation towards the action, whereas the catastatic control type is activated by the orientation towards the state [18].

The concepts mentioned (state orientation and action orientation) are the essence of Kuhl's concept. Action orientation contains many elements that focus attention on the present, the future, the discrepancies between the present and the future, and at least one possibility to eliminate the discrepancy that has arisen. However, if even one of the above conditions is not met, then there is a state orientation. The realisation of the intention is facilitated by action orientation because it integrates both personality and emotional factors. On the other hand, the orientation on the state hinders the intention implementation [19].

Kadzikowska-Wrzošek observes that the types of orientation distinguished by Kuhl differ in the ability to regulate the affect. Hence, people with the action orientation have the ability to induce a positive affect when they pursue goals that require a lot of effort (e.g. unattractive or dull), as well as to neutralise a negative affect when an unpleasant and adverse situation arises. Being assigned to this orientation enables a better interpretation of one's own needs and preferences, which definitely facilitates decisions about taking action. Such people know what they want to achieve, why they want to do it, and how. This is not the case with the state orientation. Individuals with such a kind of orientation do not have the ability to regulate the affect, and they require the condition of coercion and pressure to take action. As they implement their intentions, they consume more life energy and thus experience exhaustion more quickly. They are not persevering and effective in action, which is caused by a lack of ability to construct an action plan

and make an insight into their own needs and preferences. They know what they want to achieve but find it difficult to pinpoint the reason for their intention and to become sufficiently determined to achieve it [20]. Kuhl's assumption about the relationship between efficiency and personality dispositions distinguishes this concept from Gollwitzer's hypothesis, which in turn does not associate the probability of achieving the goal with current personality dispositions.

Numerous studies using Kuhl's concept of Action Control confirm that establishing the conditions of pressure and coercion enhances effective and persistent action, especially when it refers to people with poor self-regulatory mechanisms [13, 20–23]. Based on the research carried out, the author of the concept confirmed that state-oriented persons show less consistency between intention and behaviour than action-oriented ones. Therefore, state-oriented individuals require both the conditions of pressure and the implementation of intentions in order to achieve effective action. This is because such people demonstrate poor internal mechanisms of self-regulation. On the other hand, persistence and action effectiveness of the action-oriented people do not require differentiated influences of the situational context. Among numerous studies by Kadzikowska-Wrzošek, the ones having particular significance for this work are the studies concerning the influence of the implementation of intention and the power of will on the subjective evaluation of the progress in achieving personal goals. On the basis of Gollwitzer's and Kuhl's concepts, the author assumed that people who are characterised by state orientation achieve their goals only when they act under pressure and implement their intentions due to their low efficiency of action control [13]. The above-mentioned assumptions were used as a basis for our own research, the aim of which was to determine the influence of willpower and intention implementation on the subjective evaluation of the progress in achieving personal goals, as expressed by physiotherapy students at the Jan Kochanowski University in Kielce.

Aim of the research

In view of the above considerations, the following hypotheses were formulated for the study:

1. The power of will influences positively the subjective assessment of the degree to which personal goals are achieved.
2. The implementation of intentions has a positive impact on the subjective assessment of the degree of achieving personal goals.
3. The implementation of intentions in state-oriented individuals affects the subjective evaluation of the degree of achieving personal goals more than in action-oriented people.

Material and methods

The study employed the experimental method developed by R. Kadzikowska-Wrzosek. The basic research was carried out in two stages. During the first stage, all persons completed the Polish adaptation [24] of Kuhl's questionnaire (ACS-90) and identified one goal that, at that time, was important to them (a "personal project" they would like to implement). Then, following random assignment to one of the groups (with or without implementation of intentions), the respondents either did or did not implement their intentions. The completed questionnaires were coded (initials of mother's name her maiden surname and her date of birth) and deposited in envelopes. After 1 month, i.e. in the second stage of the study, all respondents assessed the progress in achieving their goals, as per the instructions provided.

The group of respondents taking part in the analysis consisted of 61 persons, with 42 women and 19 men (after excluding one person due to not meeting the condition of data completeness – no data related to filling in the Kuhl's questionnaire was found). The study participants were the first-year, second-degree, full-time students of physiotherapy at the Jan Kochanowski University in Kielce. The research was conducted in 2016 (pilot studies) and in 2017 (proper studies).

Operationalisation of the independent variable: state orientation versus action orientation consisted of filling in Kuhl's Action Control Scale (ACS-90) in the Polish adaptation of Marszał-Wiśniewska. On this basis, state-oriented and action-oriented persons were identified. The scale consists of 36 items, 12 items for each of the three subscales, which correspond to the types of orientation identified by Kuhl: AOF/SOF (*failure-related action versus state orientation*), AOD/SOD (*decision-related action versus state orientation*), AOP/VOP (*performance-related action versus volatility*).

The AOD/SOD scale corresponds with regulation of the positive affect required for intention implementation, and it has a substantial meaning for persistence in pursuing a goal (Baumann and Kuhl, 2005). The particular items in the AOD/SOD subscale of Kuhl's questionnaire describe situations of moderate daily stress related to the challenge of conflicting, difficult, or monotonous goals. According to Kuhl, the author of the scale, a score above 6 on a 12-point AOD/SOD scale indicates action orientation.

The tests were monitored using the AOF/SOF subscale. This scale is generally well correlated positively with the AOD/SOD scale. Therefore, it can be predicted that the test results obtained for the AOF/SOF scale should be similar to those that would be received with the AOD/SOD scale. However, the AOP/VOP scale, measuring the orientation to action vs. variability in action execution situations, often fails to correlate with the other two subscales, as can be seen in Kuhl's own research and the Polish adaptation of his scale [24].

Operationalisation of the independent variable: no implementation of intentions versus implementation of intentions involved random division of the surveyed students into two groups: one in which the respondents implemented intentions, and the other, in which the intentions were not implemented. The respondents formulated independently one goal (such as passing a semester exam session, gaining new competencies or qualifications, particular leisure time arrangement, etc.) that they wanted to achieve in a short period. In the implementation group, students had been instructed on how to plan their goals following Gollwitzer's concept [11] and the procedure employed by Koestner *et al.* [13]. In the non-implementation group, the students received no such information. Providing implementation-related guidance had been preceded by manipulation, which was to create a sense of commitment to the implementation. In principle, implementation of the intention is to compensate for the weakness of internal regulatory mechanisms because there appears a sense of pressure and obligation. In order to establish such a sense, the procedure of Koestner *et al.* was used. The procedure had been applied in research on the implementation effectiveness of New Year's resolutions.

Measurement of the dependent variable. The following 0–9 scale was used to measure the subjective evaluation of the extent to which personal objectives had been achieved, with 0 representing the 0–9% [etc.] range, and 9 representing the 90–100% range. The progress indicator was the assessment of the goal achievement level, as indicated by the study participants 1 month after the goal had been constructed.

Results

Preliminary analyses

Descriptive statistics of the independent variable: willpower

The usefulness of the tool was evaluated by means of pilot research as well as standard evaluation methods such as reliability testing. The AOD/SOD scale in the sample was found to be of satisfactory reliability, with a Cronbach's α of 0.70. AOF reliability was 0.74. The AOP scale had the lowest reliability in the sample compared to AOF and AOD, at 0.60, which is probably due to its different nature from the other two scales of the questionnaire.

In the investigated sample, the statistics characterising the distributions of results for Kuhl's questionnaire subscales indicate the irregularity of distributions. Selected detailed statistics are presented in Table 1. It is noted that the range of results for all the subscales covers almost the entire theoretical scale (0 to 12 points). The distribution of AOF/SOF results is a right-angled one. The results on the AOP/VOP scale correspond to the left angled distribution. The most

flattened distribution of results was obtained in the AOD/SOD subscale; it demonstrates the features of a rectangular distribution.

To assess the accuracy of the tool, the results of the AOF/SOF and AOP/VOP subscales were observed and independently linked to the AOD/SOD subscale. To examine the links between the subscales, the Spearman correlation method was applied due to the characteristics of the distribution of results in each Kuhl scale (these are not normal distributions). The results obtained on the AOD scale demonstrate a positive, significant, and moderate correlation with the results on the AOF scale, ($r_s = 0.447$; $p < 0.01$), and they correlate significantly with the results on the AOP scale ($r_s = 0.281$; $p < 0.05$). However, the AOF scale does not correlate significantly with the AOP subscale; therefore, the results are consistent with the predictions (as regards positive correlation of the AOD and AOF subscale as well as frequent lack of correlation of AOD and AOF subscales with the AOP subscale).

Based on the sum of the AOD/SOD scores, action-oriented and state-oriented individuals were distinguished against the median ($Mdn = 6$), assuming that those who scored above the median were the action-oriented ones. In the study, $N = 28$ such individuals were registered. Other participants, $N = 33$ who scored below or equal to the median, were classified as state oriented.

Similarly, based on the sum of the AOF/SOF scale results, action-oriented versus state-oriented persons were distinguished against the median ($Mdn = 3$), assuming that people who scored above the median are action oriented. In the study, $N = 25$ such individuals were registered. The remaining participants, $N = 36$ who scored below or equal to the median, were classified as state oriented.

Descriptive statistics of the independent variable: intention implementation

The respondents were randomly assigned to one of the two groups. The group that implemented the intentions included 31 people (group: Implementation), with 17 women and 14 men. The remaining respondents were assigned to a group in which the intentions were not implemented, and only the goal was formulated ($N = 30$; group: no implementation). This group consisted of 25 women and five men. In the group without implementation, women significantly dominated: $\chi^2(1, N = 61) = 4.520$; $p < 0.05$.

It was also stated that there are no statistically significant differences between the people implementing and not implementing intentions in terms of their assignment to either the state- or action-oriented group. The proportions of such people in both groups are almost identical. In the intention-implementing group, there were 17 state-oriented and 14 action-oriented persons (54.8–45.2%, respectively); whereas in

Table 1. Statistics of Kuhl's questionnaire subscale distribution in the studied sample ($N = 61$)

Statistics	AOF (failure)	AOD (decision)	AOP (performance)
Average	3.61	5.90	8.41
Median	3.00	6.00	8.00
Standard deviation	2.67	2.79	2.30
Angle	0.606	-0.130	-0.784
Kurtosis	0.306	-1.010	1.195
Min	0	1	1
Max	10	11	12

Theoretical scale span 0–12 points.

the group not implementing the intention, there were 16 state-oriented and 14 action-oriented participants (53.3–46.7%).

Descriptive statistics of the dependent variable: evaluating goal achievement extent

In our own research, the dependent variable value ranged between 0 and 9 points, with 9 indicating the respondents' assessment of having achieved their goal in almost 100% (90–100%). There were five such individuals, of whom three were classified as action oriented and two as state oriented. At the other end of the scale, there were people who claimed not to have carried out their plan at all or to have only achieved it in 0–9%; there were three such people, and each of them was recognised as state oriented in view of the AOD subscale of Kuhl's questionnaire.

The distribution position measures are almost identical ($M = 4.41$; $Mdn = 4$; similarly, the mode takes the value of 4). However, the distribution of scores is highly differentiated. The spread extends over the entire range of the theoretical scale, and the standard deviation represents more than 50% of the arithmetic mean ($SD = 2.44$; therefore, the coefficient of variation is large and equals 55.3%); the angle determined by the distribution asymmetry measure is distinct and equals 0.188.

The influence of willpower and implementation of intentions on the subjective evaluation of goal achievement

Because the AOD subscale (action orientation vs. state orientation) is in correlation with the other two subscales in Kuhl's questionnaire, three hierarchical regression analyses with the interacting component were performed to verify the study hypotheses. In each of these analyses, the dependent variable was the

Table 2. Results of the hierarchical regression analysis with the interacting component for the dependent variable of the goal achievement assessment and the independent variables: intention implementation and AOD

Model	df	F	R ²	ΔF	β
Model 1	2	3.03*	0.10		
Implementation of intentions					0.05
AOD					0.31**
Model 2	3	3.64**	0.16	4.49**	
Implementation of intentions					0.05
AOD					0.29**
Implementation of intentions × AOD					0.26**

* $P \leq 0.1$ (statistical trend); ** $p < 0.05$.

Table 3. Results of regression analysis for the dependent variable of goal achievement assessment in the subgroups: intention implementation and no implementation, including the AOD subscale

Group	df	F	R ²	β
No implementation	1	0.03	0.00	
AOD				0.04
Implementation	1	11.93*	0.29	
AOD				0.54**

* $P \leq 0.01$.

Table 4. Results of hierarchical regression analysis with the interacting component for the dependent variable: goal achievement assessment, and the independent variables: intention implementation and AOF

Model	df	F	R ²	ΔF	β
Model 1	2	3.15*	0.10		
Implementation of intentions					-0.03
AOF					0.32*
Model 2	3	3.03*	0.14	2.62	
Implementation of intentions					-0.03
AOF					0.30*
Implementation of intentions × AOF					0.20

* $P \leq 0.05$.

subjective assessment of the goal achievement, one of the independent variables was the implementation of intentions (yes vs. no), and the other was of the subscale of the Action Control Scale.

The independent variables have been centred. Output values of the independent variable were recorded: (-1) for no implementation and (1) for implementation. For the subscales of the Action Control Scale (AOD, AOF, AOP), a centring method based on the standardisation of variable results was selected. The interacting component was created by multiplying the transformed independent variables: intention implementation multiplied by a given subscale of the Action Control Scale. Finally, hierarchical regression analyses were performed, introducing independent variables in the first block and the interacting component in the second block.

Assessment of goal achievement, and the implementation of intentions and action orientation vs. state orientation in the decision-making situation (AOD)

The first hierarchical regression analysis with the interacting component was conducted taking into account the AOD subscale, i.e. action orientation vs. state orientation in a decision-making situation; thus, the interacting component was established by multiplying the variables: intention implementation × AOD. The results of this analysis are presented in Table 2.

As shown in Table 2, Model 2 including interaction is significantly better matched to the data than Model 1 (increase in R^2 from 0.10 to 0.16). In addition, in the second model, both the action orientation vs. state orientation in a decision-making situation (AOD) and the interacting component have a significant (positive) relationship with the assessment of the goal achievement. Further analyses were carried out, the results of which are presented in Table 3.

As shown by the results contained in Table 3, in the no intention implementation group, the action orientation vs. state orientation in the decision-making situation was not significant for the assessment of the goal implementation, whereas in the implementation group, the respondents who were more action-oriented than state-oriented assessed the goal implementation higher and in a statistically significant manner.

Goal achievement assessment as well as the implementation of intentions and action orientation vs. state orientation in the situation of failure (AOF)

Another analysis was conducted for the AOF subscale, i.e. the action orientation vs. state orientation in a failure situation; thus, the interactive component was created by multiplying the variables: intention implementation × AOF. The results of this analysis are presented in Table 4.

As shown in Table 4, Model 2 including interaction is only slightly better, but in a statistically irrelevant manner, matched to the data (increase in R^2 from 0.10 to 0.14). Moreover, both in the first and the

second model, only the action orientation vs. the state orientation in the situation of failure (AOF) enters into a significant (positive) relationship with the goal achievement assessment, i.e. the more action-oriented the respondent is in the situation of failure, the higher they assesses the achievement of their objective.

Assessment of the goal achievement, and the implementation of intentions and action orientation vs. variability in the situation of performing activities (AOP)

The next hierarchical regression analysis with the interactive component was conducted taking into account the AOP subscale, i.e. the action orientation vs. variability during the performance of the activity; thus, the interactive component was created by multiplying the variables: intention implementation × AOP. The results of this analysis are presented in Table 5.

As shown in Table 5, Model 2 including interaction is significantly better matched to the data than Model 1 (R^2 increase from 0.00 to 0.07), although neither Model 1 nor Model 2 are statistically significantly matched to the data. In these circumstances, no further analysis was carried out.

Summary

Summarising the results obtained, it can be concluded that:

- 1) the main effect was obtained for the action vs. state in decision-making (AOD) and failure (AOF) situations; however, the main effect for action vs. changeability in performance situation (AOP) was not demonstrated; these results indicate that the higher the power of will in decision-making and failure situations, the higher the assessment of goal achievement;
- 2) the main effect of intention implementation was not proven; thus, the goal achievement assessment by the respondents did not depend on whether they had planned how they would accomplish their goal;
- 3) an interacting effect of the intention implementation and action orientation vs. the state orientation in decision-making situations (AOD) was achieved, consisting of the fact that in the no-implementation group, the action orientation vs. the state orientation was not important for the assessment of goal achievement, whereas in the implementation group a higher action orientation was conducive to a higher assessment of the goal achievement.

Qualitative analysis of goals

Given the above results, a qualitative analysis of the goals was drawn up. The form and the content of the goals were analysed. It was found that all respondents who did not plan or did not implement the goal ($N = 30$) formulated their goals very briefly, most

Table 5. Results of hierarchical regression analysis with the interacting component for the dependent variable: goal achievement assessment and the independent variables: intention implementation and AOP

Model	df	F	R ²	ΔF	β
Model 1	2	0.02	0.00		
Implementation of intentions					0.02
AOP					-0.02
Model 2	3	1.39	0.07	4.13*	
Implementation of intentions					0.02
AOP					0.03
Implementation of intentions × AOP					-0.26*

* $P \leq 0.05$.

often by means of one or several sentences. On the other hand, in the intention implementation group, 15 short characteristics were found, while the rest presented their objectives using a detailed description. In addition, the contents of the respondents' goals were analysed, assuming that this might be the reason for no impact of the implementation upon the goal achievement level assessment, particularly in the state-oriented participants. Four empirical types of goals were identified (in order of their intensity): related to lifestyle, own addictions, educational goals, and specific, utilitarian (practical) goals.

A noteworthy fact is the similarity of the goals established by the surveyed students. Four categories of goals can be distinguished. More than a half of the respondents, both in the implementation and no implementation groups, adopted as their goals the elements related to lifestyle, including the health-oriented ones. The implementation group declared goals aimed at giving up addictions. On the other hand, the respondents who made no implementation were more inclined towards educational goals, including ones related to functioning as a student.

Discussion

The measurement of willpower in the research following Kuhl's questionnaire is accurate and credible, as shown by the reliability coefficients (calculated according to the statistical rigour) for each subscale (between 0.6 and 0.7) and the correlation coefficients between the subscales. Moreover, there were no statistical differences between those respondents who implemented their intentions and those who did not, with regard to a division into status- and action-oriented groups. Therefore, it should be stated that the question about the achievement of goals was not in-

terfered by the unevenness of proportions in the possible divisions: power of will versus implementation of intentions. The only factor not analysed in our own research, which could have been related to the results, was the gender of the respondents (in the no implementation group, women constituted a significant majority).

The results of the research obtained by Kadzikowska-Wrzosek and the query in question provided the basis for three hypotheses.

The first one assumed that the *power of will would influence the subjective assessment of the degree to which personal goals were achieved*. This hypothesis proved to be partially true: higher action orientation in decision-making situations (AOD) and failure situations (AOF) implies a higher evaluation of goal achievement. It is only the higher action orientation in action situations (AOF) that has no relation with the goal achievement assessment. Such a result is not surprising in view of many other studies in which the AOF subscale “behaves” differently than the other two subscales.

Hypothesis 2, assuming that the implementation of intentions will have a positive impact on the subjective assessment of the degree of achieving personal goals, was not confirmed. Neither was Hypothesis 3: postulating that the implementation of intentions in state-oriented individuals will affect the subjective evaluation of the degree of achieving personal goals more than in the action-oriented people. Here, the results of our own research are fundamentally different from those in Kadzikowska-Wrzosek’s study: in the no implementation group, the willpower in decision-making situations (AOD) had no influence upon the assessment of goal achievement, whereas in the group that implemented intentions, people with a higher action orientation in decision-making situations (AOD) rated the achievement of their goal higher than people with a higher state orientation. Thus, contrary to the results obtained by R. Kadzikowska-Wrzosek, no observations were made that the state-oriented individuals (i.e. those with weaker willpower) would obtain improvement in achieving their goal as a result of planning. In order to explain the obtained result, one should refer to the query presented in the introduction to the paper. It shows that the achievement of goals is related to time perspective [1], needs and value systems, hierarchy of goals, social conditions [2, 18, 25–27], life experiences [4], configuration of goals [5], diversity [6, 7], corrective actions, willpower [10, 28, 29], implementation of intentions [11], and other factors.

Qualitative data analysis

The obtained results of our own research demonstrate the advantages and the limitations revealing the relationship only between the willpower, imple-

mentation, and the assessment of the level to which the goals have been achieved in the experiment, where the randomisation II principle was applied. Contemporary psychology suggests that goal setting and implementation can be considered as one of the main manifestations of human subjectivity, including the establishment of beginnings. Therefore, as previously indicated, the analysis of the content and form of the goals set by the respondents was carried out. Based on the literature, the goals may to a large extent be classified theoretically as distal, external, general and, on a smaller scale, as point objectives [29]. The goals less frequently concern immediate intentions (thus are not proximal objectives), they do not manage directly human behaviour (as do distal objectives). More often, the goals correspond to an inclination to act because of their effects (external objectives) rather than for the sake of self-realisation or one’s benefit (as internal objectives). Sporadically, the goals concern a specific final outcome (point objectives). Such characteristics of goals apply to all respondents, regardless of whether they implemented their intentions or not (more than a half of the respondents in each group declared similar general goals). Formulated goals (more often high-low range and vague) are a likely explanation of why the implementation of intentions did not work in our own research, because the implementation of intentions does not work well if the intention to achieve the goal is weak, as stated by Orbell *et al.* [16].

Conclusions

In view of the results, our own research can be regarded as a contribution to the subject-matter study on willpower and mechanism reinforcement in the process of achieving goals by young people; a community that, according to the literature, is especially vulnerable to change. Young age offers particular opportunities to deviate from previous decisions (goals), and there is also a frequent modification of goals or even a complete transition to other goals. Modification of goals is also facilitated by changeable socio-cultural conditions. In view of the above, but also considering the study results, questions about the determinants of decision-making are essential for the construction of young generations’ psychophysical condition. They form important grounds for conducting further related research, the scope of which increases with the number of the examined variables (such as additional control, autonomy as in Kadzikowska-Wrzosek’s study, or other features of importance in the studies on psychological determinants of decision making).

Conflict of interest

The authors declare no conflict of interest.

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