

Elżbieta Hornowska

Władysław Jacek Paluchowski

*Department of Psychology, Adam Mickiewicz University in Poznań*

## Refinement and Further Validation of the Working Excessively Questionnaire (WEQ)<sup>1</sup>

---

### Abstract

Research on the first version of the *Working Excessively Questionnaire* revealed its potential use for assessing the work overload problem. The aim of the present paper is to present the development and the psychometric properties of the second version of the WEQ.

The development of WEQ occurred in two main steps. In the first phase, an initial list of 229 items was created. Exploratory and confirmatory factor analysis on a sample of 1,746 persons revealed an interpretable 78-item, four-factor solution with good internal consistency. We considered practical experience from the use of our questionnaire, particularly the comments from workplace studies where the questionnaire had been used. In the second phase, a total of 2,658 employees aged 17 - 67 completed a questionnaire and a demographics survey. An exploratory factor analysis was accomplished using maximum likelihood extraction with oblimin rotation. A four-factor structure was retained. The four-factor solution explained 34.58% of the variance and provided a good fit to the data. The final version of the WEQ questionnaire consists of 65 statements. The four factors were Lack Of Control Over Work Scale (LCWS), Perfectionist Working Style Scale (PWSS), General Beliefs About Work Scale (GBWS), and Perceived Oppressiveness Of The Organization Scale (POOS). Each factor contained an adequate number of items and had good internal consistency.

---

<sup>1</sup> This work was supported by the National Science Centre (grant number N N106 346440)

The results of this study suggest that the revised WEQ appears to be a psychometrically sound tool for the assessment of the work overload problem.

---

### **Streszczenie**

Celem tego artykułu jest przedstawienie przebiegu i efektu prac nad Kwestionariuszem Nadmiernego Obciążania się Pracą (KONOP). W pierwszej fazie stworzono kwestionariusz zawierający 229 twierdzeń. Eksploracyjna i konfirmacyjna analiza czynnikowa wyników od 1746 osób dała podstawy do budowy 4-skalowego kwestionariusza zawierającego 78 pozycji. W drugiej fazie prac, po zebraniu dodatkowych danych, analizie czynnikowej poddano wyniki 2658 pracowników w wieku 17-67 lat. Utrzymano 4-czynnikowe rozwiązanie. (wyjaśniało ono 34,58% ogólnej wariancji). Ostateczna wersja kwestionariusza obejmuje 65 twierdzeń. Kwestionariusz składa się z 4 względnie niezależnych skal: Utrata Kontroli nad Pracą (UKP), Perfekcjonistyczny Styl Pracy (PSP), Ogólne Poglądy na Pracę (OPP) i Spostrzegana Opresyjność Organizacji (SOO). Skale posiadają zadawalające parametry psychometryczne.

---

Based on the existing literature analysis, we have decided to investigate the signs and symptoms of work overload problems in four areas: lack of control over work, which leads to negative effects of work overload, work beliefs, working style and organizational factors (see: Hornowska, Paluchowski 2007, Paluchowski, Hornowska 2013).

### **Item pool development**

To create the primary item pool we used the Work Addiction Risk Test (WART; Robinson, 1989) and the scale proposed by Spence and Robbins (1992). We have also used the questionnaire developed by the students of the Institute of Social Clinical Psychology in SWPS in Warsaw, the students of the Psychology Institute of the University of Wrocław in 2001-2005, the works of Alicja Bodoń (2002) and Justyna Słaba (2002), information from the press, popular literature and the Internet, and our own items. Altogether, 229 items were included in the working version of our questionnaire.

Next, we checked to what extent the items are connected with the defined areas. As before, we used a group of competent raters to check which items are consistent with the initially chosen definitions of their categories. The raters obtained the definition of a particular area (of the scale) and the complete list with the questions in alphabetical order. To analyze the results of the competent work of

the raters, we used the content validity index (CVI) calculated by the formula of C. H. Lawshe (Hornowska 2001, p. 89; Lawshe, 1975). Each item was assigned to a suitable scale according the value of the CVI. After assessment of all the items, the group discussed the cases in which an item had been assigned to more than one scale. In such cases, the final decision was made after the discussion.

The scale of encouragement of excessive workload by an organization (a company) was developed differently. Incidental interviews conducted among managers at the low, middle and top level of management in several corporations and small companies (Ferenc, 2005) were the source of the items (along with those described above). We also used the competent raters assessment, however, this time, the items were assessed by two independent groups. The first one included employees from different organizations and assessed only the items related to organizational conditioning of excessive workload. The other group included students (described above) and assessed the same items but mixed with different items from the other scales of the questionnaire. The results presented by both groups were compared with each other. Only the items assessed equally by both groups were taken into further consideration.

In the end, the working version of the questionnaire included: 18 items that were assigned to the scale of social and subjective negative outcomes of workaholism, 46 items related to organizational factors of excessive workload, 39 items belonging to the working style and workaholism-promoting beliefs (including perfectionism) scale, and 23 items of the lack of control over work scale. 94 items were eliminated because the raters assigned them to more than one scale or to no scale at all. The working version of the questionnaire included 126 items. We also decided to add 9 items based on the ICD-10 criteria. Finally, the questionnaire included 135 items.

The grammatical correctness of all these items was checked. Their form was changed to, if possible, get a similar number of diagnostic answers of “yes” and “no” to weaken the influence of one of the confounding variables, the so called stylistic variable (Rorer 1965). The ratio of the diagnostic “yes” to “no” answers was 2.3 to 1.

Next, it was necessary to check to what extent the items are prone to social desirability factor. The items that were sensitive to either simulation or dissimulation instruction have not been included in the final version of the questionnaire.

In 2004-2007 (KBN grant no. 1 H01F 087 27) new data was gathered and new conceptual and empirical work, related to the questionnaire, was conducted (Hornowska, Paluchowski 2007). The employees and students of the Institute of Psychology of the UAM in Poznań, the Institute of Psychology of the University of Wrocław, as well as the students of the optional and master seminars in the IP

UAM in Poznań, the IP UW in Wrocław and the SWPS in Warsaw took part in the research.

Because of the need to control the carefulness during answering the items, we developed the formal scale “Consistency.” This scale was based on the similarity of the content of some items and was analogous to the *Carelessness Scale* (Greene, 1978). It was important because some of the data was gathered through the Internet. The “Consistency” scale consisted of seven pairs of reversely oriented items.

As a result of our work, this version of the questionnaire contained 78 items classified into four scales, 20 items each (two items belong to more than one scale). Regarding the results of exploratory and confirmatory factor analysis, and consideration for the content of each item, we proposed the following four scales of the Working Excessively Questionnaire: Lack Of Control Over Work Scale (LCWS), Perfectionist Working Style Scale (PWSS), General Beliefs About Work Scale (GBWS); Perceived Oppressiveness Of The Organization Scale (POOS).

### **Final refinement of the questionnaire**

#### *The sample*

To develop the final version of the questionnaire, we used data from the studies conducted within the KBN grant H01F 087 27 in 2004-2007 and results gathered in 2007-2009 (data from the Internet and paper-pencil instruments).

All the questionnaires with any errors or inconsistencies were then eliminated. The target population of the questionnaire is the population of employed people. Therefore, because of little professional experience of young people, the minimum age limit for the people included to the sample was decided to be twenty. Moreover, the data gathered from not-working people (no data regarding duration of their employment or position, no professional experience) was eliminated, as well.

Finally, the sample contained 2658 subjects.

Table 1 presents the demographic characteristics of the sample:

We started our work on the final version of the questionnaire with the exploratory factor analysis. The principal components analysis with oblique rotation of *Oblimin* type was used. The determinant for the analyzed data was 2,11E-12, KMO test – 0.954, with the significant Bartlett’s test of sphericity ( $\chi^2 = 69788.29$ ;  $p < 0.0001$ ). At the stage of developing the first version of the questionnaire, we assumed that we were going to search for the indicators of excessive

**Table 1.** Demographic characteristics of the sample

Demographic Criterion	Sample Construction
data collection	
web	47,78%
paper-pencil	52,22%
gender	
women	40,02%
men	59,98%
no data	0,11%
education	
primary	0,42%
vocational	14,62%
secondary	27,89%
higher	57,06%
no data	2,7%
age	M = 32,94 SD = 9,49
work experience	M = 10,09 SD = 9,03
work experience In current workplace	M = 5,64 SD = 6,65

workload in four areas. Because of that fact, the factor analysis was conducted with a decided number of factors. As a result, the four factors explained in total 34.58% (20.19%; 6.52%; 4.16%; 3.71% respectively).

The factors proved to be relatively independent (see Table 2). The correlations between them are low and do not exceed  $r=0.35$ .

**Table 2.** Correlation matrix of factors in KONOP questionnaire

Scale	LCWS	PWSS	GBWS	POOS
LCWS	1,000			
PWSS	-0,148	1,000		
GBWS	-0,347	0,216	1,000	
POOS	-0,085	-0,017	0,149	1,000

Method of extracting factors – Principal Component Analysis (Oblimin rotation)  
Legend: LCWS = Lack of Control Over Work Scale; PWSS = Perfectionist Working Style Scale; GBWS = General Opinion About Work Scale; POOS = Perceived Oppressiveness of the Organization Scale;

Considering the results of the factor analysis and the content of each item, the earlier proposed four scales of the questionnaire were maintained:

- 1) *Lack Of Control Over Work Scale (LCWS)*
- 2) *Perfectionist Working Style Scale (PWSS)*
- 3) *General Beliefs About Work Scale (GBWS)*
- 4) *Perceived Oppressiveness Of The Organization Scale (POOS)*

### Scale statistics

Below, we present the means and standard deviations for each scale of the questionnaire in groups that were based of the basic demographic statistics (gender, education, age): see Table 3. Two groups were distinguished in the age category - individuals in early adulthood (to 34 years of age) and in the middle and late adulthood (older than 35 years of age). From the perspective of their professional objectives realization, the greatest difference exists between these two groups. In the younger group, the orientation to the development of one's professional career and to acquire professional competences is dominant, whereas people in the older group are concentrated more on managing their own career (Brzezińska, 2000, p. 237). The table also presents the values of the *t* test for the significant difference between the means in the distinguished groups.

**Table 3.** Mean, standard deviations and test statistical significance between means in each scale for groups chosen on the basis of sex education and age.

Group	Scale			
	LCWS	PWSS	GBWS	POOS
Women	<i>M</i> =45,06; <i>SD</i> =13,49	<i>M</i> =69,76; <i>SD</i> =10,10	<i>M</i> =50,75; <i>SD</i> =14,18	<i>M</i> =34,37; <i>SD</i> =7,44
Men	<i>M</i> =46,41; <i>SD</i> =13,54	<i>M</i> =68,08; <i>SD</i> =9,84	<i>M</i> =51,98; <i>SD</i> =14,45	<i>M</i> =33,33; <i>SD</i> =7,31
Test T value	t = -2,46*	t = 4,23**	t = -2,18*	t = 3,54**
Vocational education	<i>M</i> =50,91; <i>SD</i> =14,00	<i>M</i> =70,37; <i>SD</i> =11,47	<i>M</i> =57,72; <i>SD</i> =15,96	<i>M</i> =34,36; <i>SD</i> =7,76
Secondary education	<i>M</i> =41,64; <i>SD</i> =12,27	<i>M</i> =68,12; <i>SD</i> =9,69	<i>M</i> =49,42; <i>SD</i> =12,71	<i>M</i> =33,66; <i>SD</i> =7,21
Higher education	<i>M</i> =46,23; <i>SD</i> =13,62	<i>M</i> =69,22; <i>SD</i> =9,85	<i>M</i> =50,42; <i>SD</i> =14,17	<i>M</i> =33,96; <i>SD</i> =7,51
F statistic	F=62,94**	F=6,15**	F=48,73**	F=1,10
under 34 years	<i>M</i> =46,11; <i>SD</i> =14,00	<i>M</i> =46,11; <i>SD</i> =14,00	<i>M</i> =51,43; <i>SD</i> =14,65	<i>M</i> =33,73; <i>SD</i> =7,49
35 years and more	<i>M</i> =44,74; <i>SD</i> =12,84	<i>M</i> =44,74; <i>SD</i> =12,84	<i>M</i> =50,79; <i>SD</i> =13,64	<i>M</i> =34,37; <i>SD</i> =7,40
Test T value	t = 2,40*	t = -0,42	t = 1,06	t = -2,04*

Legend: LCWS = Lack of Control Over Work Scale;PWSS = Perfectionist Working Style Scale; GBWS= General Opinion About Work Scale; POOS = Perceived Oppressiveness of the Organization Scale;

\*\* significance level below 0.01 (two-way).

\* significance level below 0.05 (two-way).

### Scale reliabilities and intercorrelations

First, we conducted the analysis of item discriminative power in the proposed scales. We left the items with the greatest discriminative power.

**Table 4.** Discrimination power for each scale

Questionnaire scale	number of items	minimal value	maximal value
LCWS	16	0,43	0,67
PWSS	18	0,21	0,56
GBWS	19	0,34	0,69
POOS	12	0.23	0,50

Legend: LCWS = Lack of Control Over Work Scale; PWSS = Perfectionist Working Style Scale; GBWS= General Opinion About Work Scale; POOS = Perceived Oppressiveness of the Organization Scale;

As a result, a questionnaire with 65 statements was developed.

Next, we analyzed the homogeneity of the scales distinguished through this method (see Table 5). The purpose of the analysis was to determine the final reliability of the scales.

The homogeneity of the scales is satisfactory, and the scales are not redundant.

**Table 5.** Cronbach's alpha reliability coefficients and standard error of measurement (SEM) for each scale

Questionnaire scale	number of items	alfa	SEM
LCWS	16	0,889	4,50
PWSS	18	0,834	4,09
GBWS	19	0,902	4,47
POOS	12	0,707	4,01

Legend: LCWS = Lack of Control Over Work Scale; PWSS = Perfectionist Working Style Scale; GBWS= General Opinion About Work Scale; POOS = Perceived Oppressiveness of the Organization Scale;

### Criterion analysis

No disorders classification (*Diagnostic and Statistical Manual of Mental Disorders – DSM – or International Statistical Classification of Diseases and Related Health Problems ICD*) has added addiction to work to its categories of addictions. Workaholism is treated as a symptom of an obsessive-compulsive personality disorder. Woronowicz's proposal (2009), used here as a criterion, is an analogy to the nine symptoms of alcoholism, described in ICD-10.



By looking at workaholism as a dimension that ranges from the lack of interest in work, commitment and dependence, to addiction, we can see the intensity of the workaholism. However, a question still remains: for how long can we be talking about normality and when should we start talking about pathology?

The concept of a norm (standard, model, value criterion) or of normality (degree of criterion realization) is ambiguous (Paluchowski 2007, p. 177). In the case of the clinical norm (or the social-clinical norm, considering the social-cultural context), we talk about the norm when a symptom (or a value of a particular criterion parameter) does not appear in the state of health (with given probability), but at the same time, it appears in the state of illness (with given probability), so it has its sensitivity and specificity. This applies to the proposition of Woronowicz (2009) “if, during the last year, at least three forms of those nine symptoms occurred, then we can approach it as workaholism.”

Our criterion consisted of nine questions added to the questionnaire (rated from 1 to 5) related to the original proposal of Woronowicz (2009). These created the criterion scale. The parameters of quantitative assessment are presented in the Table 6.

We started the analysis of the criterion with checking what the distributions were for the qualitative assessment (3 symptoms and more) and of the quantitative assessment (the total result for answers to all questions from the criterion scale). The results are shown in the table below.

**Table 6.** Descriptive statistics of quantitative criterion

mean	24,31
standard deviation	9,14
median	23
minimum	9
maximum	45
lower quartile	18
upper quartile	31
interval	13

**Table 7.** Distribution of qualitative and quantitative evaluation according to the criterion

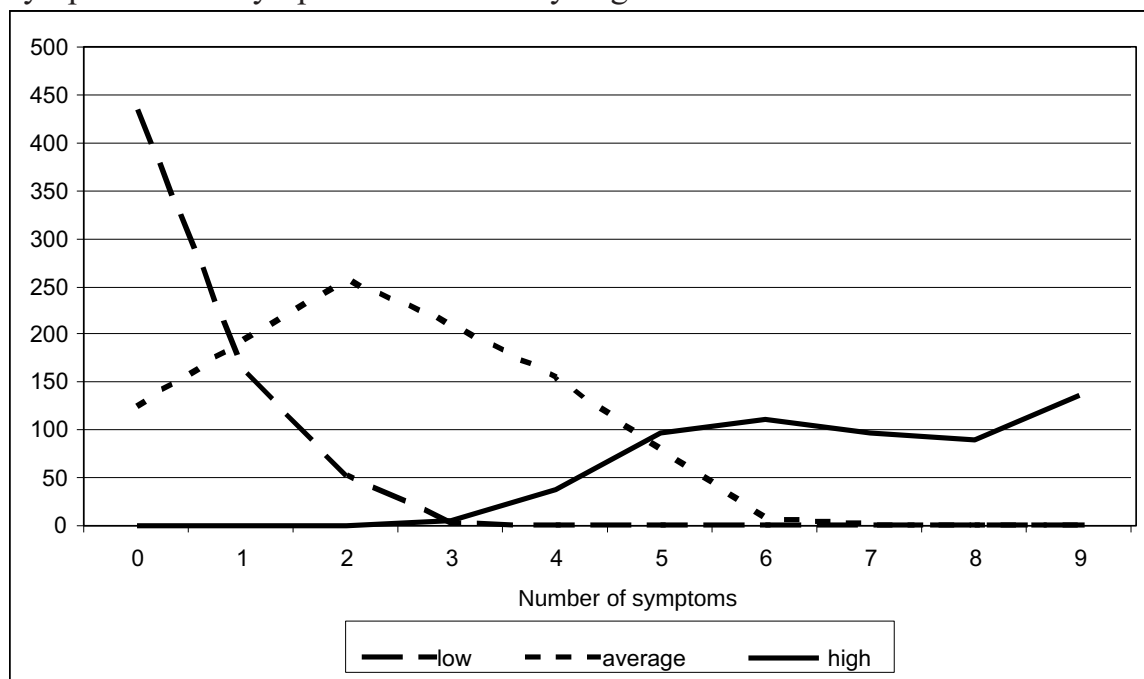
summary results	number of symptoms *										total
	0	1	2	3	4	5	6	7	8	9	
low**	434	165	52	2	0	0	0	0	0	0	653
average	123	192	256	210	155	78	8	0	0	0	1022
high**	0	0	0	5	37	97	111	96	89	137	572
total	557	357	308	217	192	175	119	96	89	137	2247

\*4 and more on a five-step scale

\*\*low results – results under first quartile ( $\leq 18$ ), high results – results above third quartile ( $\geq 31$ )

Clearly, the qualitative criterion assessment (the number of symptoms) practically covers the quantitative assessment within the range of high and low results on the criterion scale. Thus, we can say that the dimensional and categorical concept of normality can be treated interchangeably. In other words, in the case of this questionnaire we may accept the continuity of the dimension from the lack of interest in work to addiction to work. It may suggest that there were not more than 6% of persons addicted to work in the analyzed group.

However, considering the average results, it is noticeable that the area of person's decision refrainment because of the criterion health/illness ranges from 3 symptoms to 4 symptoms. After analyzing the differences between individuals



**Fig. 1.** Distribution of criterion results

Source: own survey.

with low and high results within the criterion, the results less than or equal to two symptoms were considered low and the results greater than or equal to five symptoms were considered high.

We also compared basic descriptive statistics of the quantitative criterion in groups with high (higher than or equal to 5 symptoms) and low results (smaller than or equal to 2 symptoms). The data is shown in the table below.

**Table 8.** Descriptive statistics of quantitative criterion in two groups

item content	abbreviation	low results		high results	
		mean	standard deviation	mean	standard deviation
I often feel that I should work harder.	ICD1	2,250	1,066	4,043	1,073
I have difficulty in refraining from work.	ICD2	1,807	0,837	4,474	0,781
I have difficulty controlling the amount of time spent at work.	ICD3	2,017	0,950	4,463	0,673
I feel anxiety, irritability or I have general feeling of being unwell in the case of work interruption or reduction.	ICD4	1,861	0,887	4,471	0,829
When I start work anxiety, irritability and general feeling of being unwell disappears.	ICD5	2,138	0,987	4,477	1,050
I spend more and more time at work because it helps me to reduce anxiety.	ICD6	1,669	0,731	4,462	1,068
More often I neglect my interests and other sources of pleasure for the discharge of professional duties.	ICD7	2,106	1,100	4,438	0,748

item content	abbreviation	low results		high results	
		mean	standard deviation	mean	standard deviation
I spend more and more time at work in order to achieve satisfaction and well-being, which were previously obtained during normal working hours.	ICD8	1,629	0,751	4,522	1,117
I perform professional activities in spite of adverse consequences (physical, psychological, social) that are known to be connected with spending a lot of time at work.	ICD9	2,212	1,174	4,461	0,785

In both groups, the standard deviation is similar and ranges from 0,67 to 1,17 (see table 8). In the group of individuals with a low number of symptoms of workaholism, the coefficient of variation is definitely higher (about 48% in average) than in the other group (about 22% in average), which is obvious, considering the differences between the average answers to the particular items related to this criterion (see the table).

One of the methods to check the dimension continuity or discontinuity (from the lack of interest in work to addiction to work) may be comparing the groups with low and high results in the questionnaire. In this case, we used the analysis of the difference of general factor obtained by the hierarchical factor analysis (HFA). We found out that the factor loadings were relatively low and generally did not go beyond 0.46. The hierarchical factor analysis in both groups showed similar general secondary factors for content but with some distinctive differences (see Table 9 and Table 10).

**Table 9.** Common factor loadings in group with few symptoms of workaholism

0,456	I stay long at work, because only this guarantees me a promotion.
0,449	If I do not show how I care - for example, working overtime - I will surely lose my job.
0,456	When I work more than others, I feel that I am considered to be more valuable employee and my superiors treat me more seriously.
0,439	When I work more, I feel that my bosses are happier with me.
0,404	I have to work as much as possible to earn in case of job loss.
0,396	Working in my company is a true „rat race”.
0,445	Going out from work on time, I expose myself to the fact that others may get promoted, not me.
0,419	Staying longer at work and working on weekends I show that I am a better employee than others.

**Table 10.** Common factor loadings in group with many symptoms of workaholism

0,394	I want others to know that I work more than them.
0,402	The pursuit of perfection characterizes everything I do.
0,451	I stay long at work, because only this guarantees me a promotion.
0,424	When I work more than others, I feel that I am considered to be more valuable employee and my superiors treat me more seriously.
0,426	Who works the longest, works the hardest..
0,427	I prefer to do the work myself, because then I am sure that everything is well done.
0,427	Staying longer at work and working on weekends I show that I am a better employee than others.
0,400	Staying longer at work expresses commitment and loyalty to the organization.

For individuals who showed a small number of symptoms of workaholism, the content of the items of the general secondary factor pertains to stereotypical beliefs about work. Generally, they apply to working hours, which serve as a way to attract the attention of the superiors and to increase the number of working hours due to the fear of losing a job. In contrast, the content of the general secondary factor for persons with many symptoms of workaholism did not only include working time as a mean to direct the superiors' attention to oneself, but also as a way to demonstrate one's devotion and perfectionism. We can say that there are qualitative differences between persons with a small and big number of symptoms of workaholism, although they are not significant and they match our expectations.

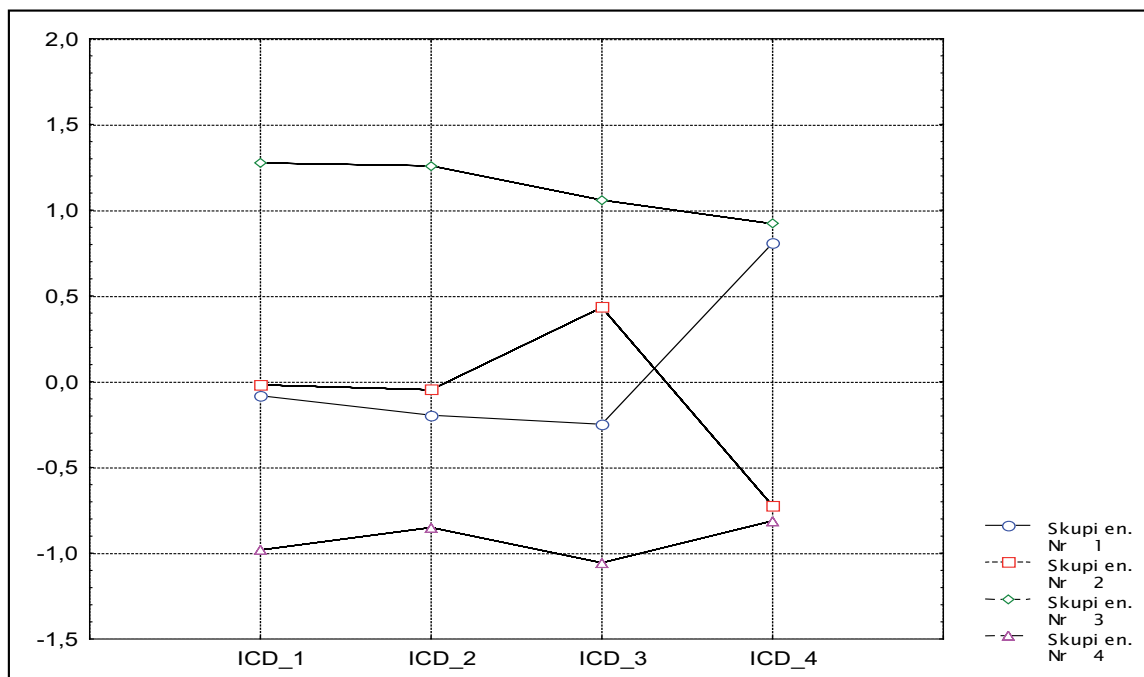
An analysis of the content of the criterion items was carried out, as well. We used hierarchical tree clustering with the unweighted pair-group method using arithmetic averages with the Euclidean distance between the variables (declared symptoms). The following four groups of symptoms (variables) were distinguished:

1. the awareness (the feeling) of the lack of control over work (ICD2, ICD3, ICD4)
2. decreasing the feeling of discomfort through work (ICD5, ICD6, ICD8)
3. the awareness (the feeling) of harmful consequences (ICD7, ISD9)
4. the feeling of compulsion to work (ICD1)

Referring to the diagnostic criteria described by Kamila Wojdyło (2010, pp. 21-23), we can say that symptoms from the first, second and the fourth group are the symptoms of work addiction, but the third group consists of symptoms of excessive workload.

Using *k*-means clustering (for the variables described above) we distinguished 4 groups of persons with similar profiles. These groups, except for the obvious differences within their configuration and profile average, were different from each other regarding the age and the duration of employment (there was no difference regarding gender and education).

Two groups with an almost equal profile are persons with low (525 persons) or high results (644 persons). In the group with low results, the average age was 31.6 and the total duration of employment was 8.97 years while they have been working in their present job for 4.9 years, on average. In the group of persons with high results, the average age was 34.2 and the total duration of employment was 11.5 years while they have been working in their present job for 6.6 years, on average. It can be said that longer duration of employment increases the probability of occurrence of the symptoms of workaholism.



**Fig. 2.** Groups with different structure of symptoms

Source: own survey

The two following groups are groups of persons with average results but with one significant difference: one of them had a relatively high result in the awareness of harmful consequences and low result in the feeling of compulsion to work (552 persons). In this group, the average age was 33.9 and the total duration of employment was 10.9 years while they have been working in their present job for 6 years, on average. However, the second group had an opposite configuration: a relatively low result in the awareness of harmful consequences and at the same time, a high result in the feeling of compulsion to work (526 persons). In this group, the average age was 31.9, the total duration of employment was 9.6 years and the time of work in their present job was 5.3 years, on average. It can be assumed that they form a group of high risk for work addiction.

### Correlations with self-reported symptoms of work addiction

The analysis of the correlation between the four questionnaire scales and the criterion variable delivered the first data regarding the construct validity of the working excessively questionnaire. The criterion variable was constructed according to the ICD-10 criteria (see above). The correlations are presented in the Table 11.

**Table 11.** Correlation coefficients between criterion variable (criteria for addiction according to ICD-10) and four scales of Working Excessively Questionnaire.

	LCWS	PWSS	GBWS	POOS
Criteria for addiction according to ICD-10	0.821**	0,434**	0,627**	0,247**

Legend: LCWS = Lack of Control Over Work Scale; PWSS = Perfectionist Working Style Scale; GBWS= General Opinion About Work Scale; POOS = Perceived Oppressiveness of the Organization Scale;

\*\* significance level below 0.01 (two-way).

In accordance to our expectations, the highest correlation was noted in the case of the *Lack Of Control Over Work* scale. This scale is directly related to the symptoms of work addiction. The remaining correlations, although lower, matched our expectations, as well.

Next, we checked the validity of the scales using the confirmatory factor analysis. Each scale was analyzed by the confirmatory factor analysis and in each case we checked to what extent the data matched a single-factor solution. The results of the analysis are shown in Table 12.

**Table 12.** Results of confirmatory factor analysis for four scales of the Working Excessively Questionnaire

Scale	GFI	AGFI	RMSEA
Lack of Control Over Work Scale (LCWS)	0,91	0,89	0,08
Perfectionist Working Style Scale (PWSS)	0,89	0,85	0,08
General Opinion About Work Scale (GBWS)	0,93	0,91	0,06
Perceived Oppressiveness of the Organization Scale (POOS)	0,90	0,88	0,08

Source: Own elaboration

It can be noticed that the data confirms that the four analyzed scales and the empirical data match satisfactorily (the GFI and the AGFI are not far from 0.9 used as a fitting measure of the model to the data)<sup>2</sup>.

<sup>2</sup> While analysing the degree of the data matching to the model, we did not include the value of  $\chi^2$  since it is always significant for big samples. This index should be used for groups smaller than 200.



## **Content sub-scales analysis**

Regarding the content, the first scale (LCWS) contains the items related to the symptoms and negative effects of the lack of control over work in different areas, such as family, social life, activities during a personal time off, etc. The second scale (PWSS) contains beliefs, attitudes and values (including perfectionism) which favor excessive workload. The third scale (GBWS) enables us to establish to what extent the analyzed person identifies oneself with normative beliefs about work, especially with those saying that the value of a person comes through their work. The last scale (POOS) allows us to describe the attitude towards an institution in which an individual is employed. This scale enables us to distinguish between the work as a duty, given by an organization or some external conditions, and the content of the work.

The content of the items of each scale was also analyzed. Again, we used hierarchical tree clustering with the unweighted pair-group method using arithmetic averages with the Euclidean distance between the variables (the reported symptoms).

In the Lack Of Control Over Work Scale (LCWS), we distinguished three groups of items based of their content:

1. LCWS\_1: external indices for excessive workload
2. LCWS\_2: work/family conflict
3. LCWS\_3: lack of work–leisure conflict<sup>3</sup>.

Therefore, we can state that the lack of control over work means repeating discomfort behaviors, neglecting other areas than work, and being unable to detach oneself from work (“abstinence”).

In the Perfectionist Working Style Scale (PWSS), we distinguished three groups of items based on their content:

1. PWSS\_1: non-delegation of tasks
2. PWSS\_2: strive for excellence
3. PWSS\_3: work and work place planning.

They well convey the meaning of this scale. Persons with self-oriented perfectionism have high results on this scale, they set high standards for their own performance, strive for excellence or even perfection and associate a great value to order and organization. With the use of the content of the sub-scales, it is difficult to assess if it is adaptive or maladaptive perfectionism. Undoubtedly, it not

---

<sup>3</sup> In the LCWS scale, these items are reverse-scored.

only is a style of working but also a style of thinking about oneself and the world. It is worth noticing that during the development of the scale the items related to parental perfectionism, both regarding parental expectations and parental criticism, were eliminated from the initial version of the scale.

The General Beliefs about Work Scale (GBWS) contains two groups of beliefs:

1. GBWS\_1: diligence as a measure of a man
2. GBWS\_2: work time as a measure of a man

As it can be seen, during the development of the scale, the items related to the beliefs on the sense of mission were excluded.

In the Perceived Oppressiveness of the Organization Scale, we distinguished the following groups of items based of their content:

1. POOS\_1: perception of fairness in the organization<sup>4</sup>
2. POOS\_2: interpersonal injustice and workplace deviance

The persons with high results in the POOS Scale believe that the relations in an organization are not based on trust and fair rules, they also negatively assess their organizational climate.

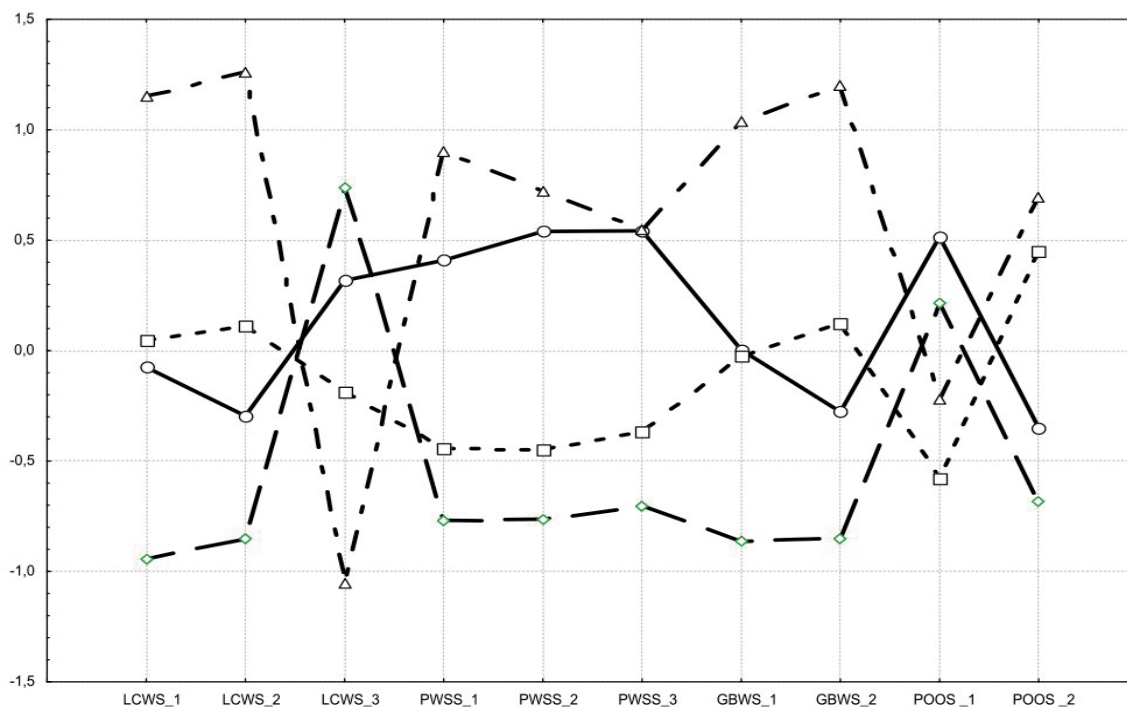
The results in the content scales are shown in the Table 13.

**Table 13.** Results in content subscales

content subscale	mean	standard deviation
LCWS_1	19,46	6,07
LCWS_2	14,79	5,76
LCWS_3	12,61	3,67
PWSS_1	44,51	6,50
PWSS_2	14,31	2,91
PWSS_3	10,28	2,45
GBWS_1	15,95	3,76
GBWS_2	34,76	11,59
POOS_1	15,41	3,78
POOS_2	19,36	5,19

<sup>4</sup> In the POOS Scale, these items were reverse-scored.

After analyzing the results, we used *k*-means clustering to classify the persons described above, we based on the standardized results obtained on the content scales of the questionnaire. Their profiles are presented in the Figure 3.



**Fig. 3.** Groups with different structure of content subscales  
Source: own survey

We obtained four groups of people; those groups differ significantly from one another in all dimensions - the first group with average results ( $N=744$ ), the second one ( $N=697$ ), the third one with relatively low results ( $N=630$ ) and the fourth group with significantly increased results ( $N=553$ ).

**Table 14.** Euclidean distance of cluster centers

Number of cluster	Nr 1	Nr 2	Nr 3	Nr 4
Nr 1	0,000	0,497	0,716	1,100
Nr 2	0,705	0,000	0,666	0,981
Nr 3	0,846	0,816	0,000	2,859
Nr 4	1,049	0,990	1,691	0,000

Legend: distances below the diagonal, squares of distances above diagonal

The Euclidean distances of the centroids are as follows (see Table 14):

The persons in the first cluster do not feel preoccupied by work in their free time, do not believe that working hours serve as a measure of a man, perceive their organization as interpersonally and procedurally fair (average profile in this group demonstrates low results in LCWS\_2, GBWS\_2 and POOS\_2; and high results in POOS\_1) and display a perfectionist attitude (high PWSS\_2 and PWSS\_3). When it comes to profile configuration, this group is the least similar to the second one. Relatively speaking, these are the oldest people (34.2 years old) with the longest duration of employment (11.5 years total, 6.5 years in the present job). Their results in the criterion scale are average (22.4 points). The persons in this group can be described as model, conscientious and ambitious employees without addiction.

The persons in the second cluster do not treat themselves as model employees at work, do not set high standards for themselves, perceive their organization as procedurally unfair (low PWSS\_1, PWSS\_2, POOS\_1), are preoccupied with work in their free time, and think that working time is a measure of a man as an employee (high LCWS\_2, GBWS\_2). The configuration of their profile is similar to the configuration of the profile of the fourth group. Their age is slightly higher than the average in the sample (33.4 years of age), and the duration of employment is similar to the one of the first group (10.3 years total, 5.6 years in the present job). The result in the criterion scale is slightly higher but below the average for the whole sample (23.9 points). The persons in this group can be described as employees with low aspirations, with no sense of having any influence on working conditions, however, with a sense of having an excessive workload.

The third cluster consists of the group with the lowest results. The persons in this group do not perceive their workload as excessive (low LCWS\_1), can easily detach themselves from work and perceive their work place as one with clear and moderate requirements (high LCWS\_3, POOS\_1). This sample consists of individuals of average age (32.2 years of age), whose total duration of employment is relatively short (8.8 years), and duration of present employment is average (5.1 years). Their results in the criterion scale are the lowest (16 points). We can say that the persons in this group treat their work only as a source of income and do not engage in it.

The people in the fourth cluster obtained relatively lowest results; they cannot detach themselves from work, experience procedural injustice at work (low LCWS\_3, POOS\_1) and external indices of excessive workload. They are preoccupied with work in their free time and believe that working time is a measure of an employee (high results in: LCWS\_1, LCWS\_2, GBWS\_2). The configuration of the profile of this group differs from the configuration of the profiles of the first and the third group. The persons here are relatively the youngest (31.6 years old), their total duration of employment equals 9.4 years, they have spent 5.1

years in their present job. Their results in the criterion scale are relatively high (34.7 points). This group contains people who suffer from excessive workload.

## Summary

The tool that we have developed, the Working Excessively Questionnaire, consists of four scales that correspond to four theoretically constructed aspects. The scales: *Perfectionist Working Style Scale* (PWSS), *General Beliefs About Work Scale* (GBWS) and *Perceived Oppressiveness Of The Organization Scale* (POOS) reflect three groups of potential causes of excessive workload. The *Lack Of Control Over Work Scale* (LCWS) shows the current degree of pathology in attitude to work. It distinguishes the persons who are already addicted to work from those who are only at risk. It allowed us to distinguish (screening function) individuals who need help or preventive measures. Summing up the results, we can state that high results in the *Lack Of Control Over Work Scale* (LCWS) apply to subjective assessment of a lack of control and to a real lack of control, whose negative effects manifest, among others in interactions with other people and in a person's battle with compulsion which this person experiences. *The Perfectionist Working Style* (PWSS) is a way of behaving (independent from the task's type) which is characterized by excessive predilection for order and excessive strive for excellence in performing given tasks. The results in the *General Beliefs About Work Scale* (GBWS) show to what extent a person shares normative reasons justifying hard work. The results in the *Perceived Oppressiveness Of The Organization Scale* (POOS) show to what extent excessive workload can be caused by the economic duress, the fear of losing a job, or by the willingness to "show off" in front of superiors, and acting following a particular organizational culture.

The results confirm that working excessively is a complex multi-aspect phenomenon and that people work excessively for many different reasons. Perhaps, there are numerous different types of excessive workload and each has its own causes and consequences. This inclines us to treat this phenomenon as a syndrome describing the variety of symptoms that regularly coexist. When it comes to diagnosing excessive workload, approaching it rather as a behavioral tendency than as a trait creates many difficulties. The diagnosis should include many areas, defined subjectively and objectively. Since it may distort the image of the analyzed phenomenon, an analysis of person's functioning in the organization always should precede a diagnosis. We should remember that potential symptoms of excessive workload can indicate many different psychological problems.

As with any conception and any psychometric tool, the research described in this article does not exclude further verification of reliability and validity of the

conclusions drawn from the results obtained through the WEQ. Such research should be continued, especially in the areas which go beyond the standard usage of the questionnaire. Gathering new data will unquestionably contribute to the extension of our knowledge about the conception of this method, its applicability, and its operationalization in the psychological diagnosis.

## **References**

- Bodoń, A. (2002). Wpływ cech temperamentalnych na powstawanie zjawiska pracoholizmu. Poznań: niepublikowana praca magisterska.
- Brzezińska, A. (2000). Społeczna psychologia rozwoju. Warszawa: Wydawnictwo Naukowe Scholar.
- Ferenc, M. (2005). Nadmierne obciążanie się pracą a organizacja. Poznań: unpublished MA thesis.
- Greene, R.L. (1978). An Empirically Derived MMPI Carelessness Scale. *Journal of Clinical Psychology*, 34, 407-410.
- Hornowska, E. (2001). Testy psychologiczne. Teoria i praktyka. Warszawa: Wydawnictwo Naukowe Scholar.
- Hornowska, E., Paluchowski, W.J. (2007). Praca – skrywana obsesja. Wyniki badań nad zjawiskiem pracoholizmu. Poznań: Bogucki Wydawnictwo Naukowe
- Lawshe, C.H. (1975). A quantitative approach to content validity. *Personnel Psychology*, 28, 563–575.
- Paluchowski, W.J. (1983) Źródła zakłóceń w kwestionariuszowym badaniu osobowości i ich kontrola. W: Paluchowski W. J. (red.), *Z zagadnień diagnostyki osobowości* (249-271) Wrocław: Ossolineum.
- Paluchowski, W.J., Hornowska, E. (2013). The Working Excessively Questionnaire (WEQ) – theoretical background. *Polish Journal of Applied Psychology*. *Polish Journal of Applied Psychology* 2013, 11(3), 7-30
- Robinson, B.E. (1989). *Work addiction*. Deerfield Beach: Health Communications.
- Rorer, L. (1965) The great response style myth. *Psychological Bulletin*, 63, 129-156.
- Słaba, J. (2002). Psychologiczne czynniki ryzyka uzależnienia od pracy jako przejawu autodestruktywności pośredniej. Poznań: unpublished MA thesis.
- Spence, J.T., Robbins, A. S. (1992). Workaholism: Definition, measurement, and preliminary results. *Journal of Personality Assessment*, 1, 160-178.
- Wojdyło, K. (2010). *Pracoholizm. Perspektywa poznawcza*. Warszawa: Wydawnictwo Difin
- Woronowicz B.T. (2009). *Uzależnienia - Geneza, terapia, powrót do zdrowia*. Poznań: Media Rodzina.