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A study on the attitude of Polish psychotherapists towards online therapy – Polish adaptation of the UTAUT-T (Unified Theory of Acceptance and Use of Technology – Therapist version) and verification of the UTAUT-T model

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Summary

Aim. The aim of the study was to verify the psychometric properties of the Polish adaptation of the Unified Theory of Acceptance and Use of Technology – Therapist version (UTAUT-T) and to verify the UTAUT-T model in a group of Polish psychotherapists.

Method. A total of 434 people aged 27-66 (M = 40.78; SD = 7.70), including 337 women and 58 men, took part in an online self-report study, which involved completing three questionnaires: UTAUT-T, the short IPIP-BFM-20 Questionnaire for measuring the Big Five, the Technology Readiness Index (TRI 2.0), as well as answers to questions about the use of digital technologies at work. The following analyses were carried out: confirmatory factor analysis (CFA), reliability analysis using Cronbach's alpha, and theoretical validity analysis – an analysis of the correlation between the subscales of the UTAUT-T instrument and questionnaires enabling the measurement of dimensions which had been indicated in previous research results as related to the acceptance of technology.

Results. The conducted analyses showed that the factor structure of the Polish version of UTAUT-T is the same as of the original tool, and the UTAUT-T model was confirmed in the group of Polish psychotherapists. The Cronbach's alpha reliability coefficient for individual subscales ranged from 0.57 to 0.97. The theoretical validity analysis confirmed the expected correlations between most dimensions of technology acceptance and technology readiness. In addition, there were single very weak correlations observed between technology acceptance and personality traits.

Conclusions. The psychometric properties of the Polish version of UTAUT-T show satisfactory values. The scale can be used to conduct further research. The UTAUT-T model can be utilized to predict the actual use of new technologies by Polish psychotherapists.

Key words: psychotherapy, videoconferencing, self-report

Introduction

In recent decades, new technologies have been adopted as an everyday work tool by many specialists, including psychotherapists [1]. Digital solutions both provide administrative support (e.g., through automated appointment scheduling) and directly participate in the provision of services, e.g., by being a carrier of psychoeducational resources [2]. In addition, video conferencing applications made it possible to conduct therapeutic sessions online, which allows psychotherapists to work with their clients outside the office. Before the COVID-19 pandemic, this form of therapeutic work had been rather a matter of the specialist's preference. However, during the lockdown, it became the only available form of providing services. Research demonstrates that the effectiveness of online therapy shows no significant difference from in-person therapy [3-5]. During the pandemic the therapists could learn this themselves, since nearly all of them had experienced online sessions at that time. However, some specialists remain skeptical about the use of video conferencing tools for meetings with their clients / patients [6]. Research conducted before the COVID-19 pandemic shows that the greatest concerns of psychotherapists related to online therapy include: 1) lower effectiveness [7], 2) negative impact on the therapeutic relationship [8], 3) limited non-verbal communication [9], 4) sense of own technological incompetence [1], and 5) incompatibility of this work method with particular therapeutic orientation [10].

Due to the ongoing digitization of various professional services, including those carried out by public sector entities, it seems important to conduct regular analyses of the attitude of psychotherapists towards technological solutions. Research indicates that the attitude of those who use them is of key importance for the implementation of new technologies in a given area of life [11]. Currently, however, Poland lacks a psychometric tool that would allow to test the attitude of psychotherapists towards online sessions.

This paper focuses on the psychometric properties of the Polish version of the UTAUT-T (Unified Theory of Acceptance and Use of Technology – Therapist version), which was developed by Békés et al. [12]. The UTAUT-T instrument allows one to measure the attitude of psychotherapists towards online therapy. In addition, according to the authors [12], it enables the prediction of the level of actual use of new technologies by this professional group, although the study conducted by them did not collect data that could indicate the level of actual use.

The concept of UTAUT-T is based on the Unified Theory of Acceptance and Use of Technology model [13]. The UTAUT model was originally meant for a business environment. However, it was pretty quickly adapted to other areas of life, such as education [14] or health (e.g., physiotherapy) [15]. According to Venkatesh et al. [13], who formulated the UTAUT model, the theory allows one to estimate the probability of using technology in a specific environment. In addition, it helps one understand the specific factors underlying the acceptance of new solutions or lack thereof.

According to the UTAUT model, the likelihood of using new technology results directly from behavioral intention, which in turn is influenced by four factors: 1) *performance expectancy* – the degree to which an individual believes that using technology will help them to attain gains in performing important tasks; 2) *effort expectancy* – the degree of ease associated with the use of technology; 3) *social influence* – the degree to which an individual perceives that important others (e.g., their mentor) believe he/she should use technology; 4) *facilitating conditions* – an individual's assumption that there is organizational and/or technical infrastructure providing support when using given technology) [13]. Later works by the authors of the model describe two additional factors: 5) *anxiety* about using technology, and 6) *attitude* – an individual's overall affective reaction to using the given technology.

The authors of UTAUT-T [12] adapted the content of the items in the original UTAUT questionnaire to the context of conducting online sessions by psychotherapists via video conference. When validating the UTAUT-T instrument, its authors tested both the 4-factor and the 6-factor model of technology acceptance proposed by the authors of the original. However, the results of the analyses [12] did not confirm either of them. The exploratory factor analysis (EFA) allowed to identify a 5-factor model that fit the data well. The final version of UTAUT-T consisted of 5 scales: 1) *Therapy Quality Expectancy,* 2) *Pressure from Others*, 3) *Ease of Use*, 4) *Convenience,* and 5) *Professional Support*. When responding to an item in the questionnaire, people respond to the statements using a 5-point Likert scale, where 1 stands for "Strongly disagree", and 5 – "Strongly agree". The higher the score on individual scales, the higher the acceptance level for online therapy. The reliability of the tool measured by the Cronbach's alpha coefficient was: $\alpha = 0.95$.

The *Therapy Quality Expectancy* dimension ($\alpha = 0.73$) consists of 8 items which refer to the perception of online therapy as good for patients and easy to provide (including the possibility of communicating emotions via the Internet or forming a therapeutic alliance). The second factor, *Pressure from Others* ($\alpha = 0.72$), consists of two items and refers to the idea that influential and important people within the professional group think that the therapist should conduct online sessions. Another scale, *Ease of Use* ($\alpha = 0.81$), consists of 4 items regarding the necessary technical knowledge and feeling confident and finding it understandable how to use technol-

ogy. The *Convenience* dimension (α = 0.67) includes two items and addresses the issues of comfort and saving time and money offered by conducting therapeutic sessions on the Internet. The last factor, *Professional Support* (α = 0.73), refers to access to the experienced professional and peer support. The scale consists of two items.

As part of the work on the original version of UTAUT-T, the authors also developed two questions that allowed for the measurement of *Behavioral Intention* (α = 0.94). Their analyses showed that the level of behavioral intention can be predicted based on the results in five dimensions of technology acceptance [12]. However, the formulated model, in which the level of behavioral intention translates into actual use of technology, was not fully verified.

Due to the lack of Polish instruments to study the attitude of members of the therapeutic community towards new technologies, we decided to adapt the tool. In addition, we made the decision to verify the full theoretical UTAUT-T model proposed by Békés et al. [12], which covers the actual use of technology by psychotherapists at work.

Material

The aim of the study was to: 1) examine the reliability, factor structure and theoretical accuracy of the Polish version of UTAUT-T, and 2) verify the UTAUT-T model taking into account the actual use of new technologies by psychotherapists. It was expected that the reliability of the individual scales of the questionnaire, expressed by the Cronbach's alpha coefficient, would be similar to the values obtained in the original version of the questionnaire [12]. In addition, we assumed that the confirmatory factor analysis (CFA) would confirm the 6-factor structure of the instrument, which, according to the UTAUT-T model, additionally enables the prediction of the actual use of new technologies by psychotherapists at work.

Hypotheses about the theoretical accuracy of the instrument were formulated as well. Based on previous research, it was expected that a higher level of technology acceptance would be associated with a higher level of technology readiness, as well as the intensity of specific personality traits.

Technology readiness refers to people's propensity to use technology in life and work [16] and consists of two types of factors: motivators (innovativeness and optimism) and inhibitors (discomfort and insecurity), which express the combination of beliefs and feelings associated with the use of new technologies present in every human being. With regard to the nature of factors contributing to technology readiness, it was expected that motivators would correlate positively with all dimensions of technology acceptance. Inhibitors, on the other hand, would show negative correlation.

Research demonstrates that the acceptance of technology is associated with such features as: extraversion [e.g., 17], emotional stability [e.g., 18], or openness to experience [e.g., 19]. Therefore, we expected a positive correlation between the UTAUT-T dimensions and extraversion and openness to experience, as well as a negative correlation with emotional stability.

Method

Participants and research procedure

The sample consisted of 434 people aged 27-66 (M = 40.78; SD = 7.70), including 401 people aged 27-66 (M = 40.79; SD = 7.70) who took part in the study of theoretical accuracy of the questionnaire. Table 1 shows the demographic characteristics of the study group.

Table 1. **Demographic characteristics of the study group**

		N	%
Gender*	Female	337	77.6
	Male	58	13.4
Place of residence	Village/Small town	1	0.2
	City up to 50,000 residents	33	7.6
	City from 50,000 to 100,000 residents	33	7.6
	City from 100,000 to 500,000 residents	54	12.4
	City above 500,000 residents	239	55.1
	No data	74	17.1
	Total	434	100
Education	Psychology	195	44.9
	Pedagogy	44	10.1
	Medicine	45	10.4
	Sociology	55	12.7
	Other	56	12.9
	No data	39	9.0
	Total	434	100

table continued on the next page

Theoretical orientation	Psychodynamic	79	18.2
	CBT	92	21.2
	Systemic	46	10.6
	Humanistic	63	14.5
	Other	112	25.8
	No data	42	9.7
	Total	434	100
Form of therapy	Individual	357	82.3
	Couple therapy	76	17.5
	Family therapy	51	11.8
	Group therapy	60	13.8
Place of work	Private office	321	74.0
	Hospital ward	43	9.9
	Mental health clinic	73	16.8
	NGO	52	12.0
	Other	53	12.2

* Some of the respondents did not specify their gender; one person described their gender as "other".

The research was conducted online, using the Qualtrics platform. The respondents completed three questionnaires consecutively: IPIP-BFM-20 [20], UTAUT-T [12], TRI 2.0 [22], as well as a demographic survey which included questions to measure the actual use of new technologies by psychotherapists at work.

Research tools

UTAUT-T was translated using the back-translation method. Any differences between the translations were discussed by a group of competent judges: three psychologists fluent in English. In addition to the UTAUT-T instruments, the study used two other questionnaires:

1) *The short IPIP-BFM-20 Questionnaire for measuring the Big Five* (IPIP-BFM-20), which is used to measure personality traits according to the Big Five personality traits taxonomy [23, 20]. The questionnaire consists of 20 items. The respondent gives answers on a 5-point scale, where 1 stands for "Very untrue of me", and 5 – "Very true of me". The individual scales of the

Polish version of the instrument [20] are characterized by a satisfactory level of reliability: *Extraversion* – α = 0.78-0.82, *Agreeableness* – α = 0.69-0.71, *Conscientiousness* – α = 0.72-0.75, *Emotional stability* – α = 0.70-0.73, *Intellect* – α = 0.61-0.65.

2) *The Technology Readiness Index* (TRI 2.0) [21, 22] to measure people's propensity to embrace and use new technologies to achieve goals in work and life. The scale covers technology-related beliefs and feelings. It consists of 16 items forming four subscales, which are characterized by satisfactory reliability in the Polish version [22]: *Optimism* (α = 0.66-0.71), *Innovativeness* (α = 0.68-0.82), *Insecurity* (α = 0.63-0.68), and *Discomfort* (α = 0.56-0.76). The respondents give their answers on a 5-point Likert scale, where 1 stands for "Strongly disagree", and 5 – "Strongly agree".

The actual use of new technologies by psychotherapists in their work was measured on the basis of six questions developed for the study. The questions concerned the use of online connection in professional life, in the following areas: 1) professional communication (e.g., Gmail, Outlook, Thunderbird, other types of electronic mail), 2) professional communication – direct (online platforms), 3) supervision (online platforms), 4) training and conferences (online platforms), 5) psychotherapy sessions (online platforms), 6) applications recommended to patients (e.g., as homework, a form of self-help, additional support between sessions). The answers were given on a 5-point Likert scale (1 – Never, 2 – Rarely, 3 – Sometimes, 4 – Often, 5 – Very often). The reliability of the developed index was: α = 0.78.

Results

The factor structure of the UTAUT-T questionnaire

The factor structure of the questionnaire was verified using confirmatory factor analysis based on the maximum likelihood method. The model consisted of six dimensions, which were correlated with each other. The verified factor structure of the questionnaire is shown in Figure 1.

The verified model was optimally fitted to the analyzed data. The fit indices were, respectively, CFI = 0.92, RMSEA = 0.07, GFI = 0.88, SRMR = 0.06. As the threshold values indicating a good fit, we adopted 0.90 for CFI [24], 0.08 for RMSEA [25], 0.80 for GFI [26], and 0.08 for SRMR [27].

Reliability analysis

Table 4 shows values of the reliability coefficients calculated using the Cronbach's α method for the analyzed scales of the questionnaire.

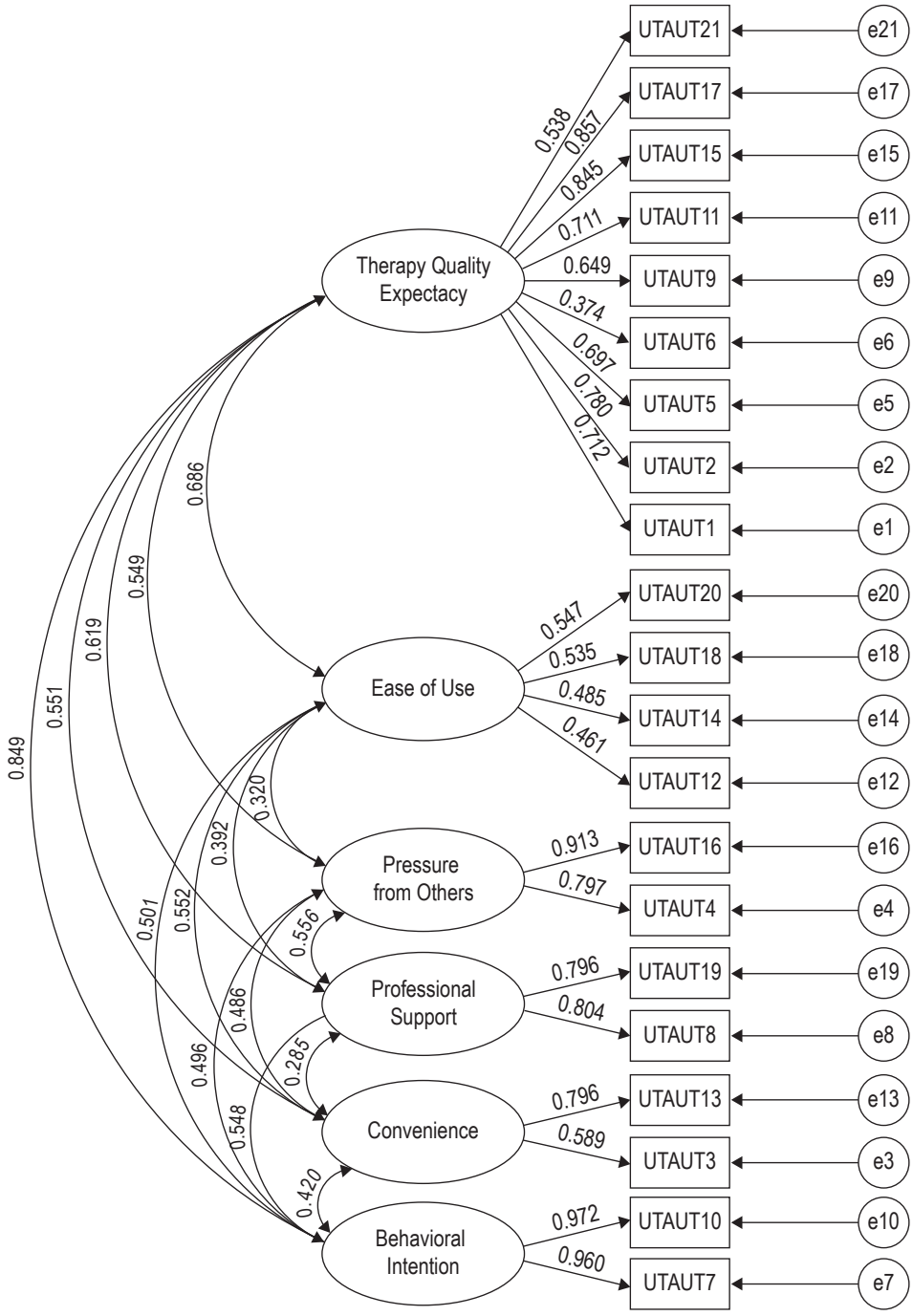

Figure 1. **Verified factor structure of the questionnaire**

Table 2. **Values of the reliability coefficient scales of the Polish version of UTAUT-T**

Scale	Value of the Cronbach's alpha reliability coefficient
Therapy Quality Expectancy (TQE)	0.89
Ease of Use (EOU)	0.57
Pressure from Others (PFO)	0.84
Professional Support (PS)	0.78
Convenience (C)	0.62
Behavioral Intention (BI)	0.97

Values of the Cronbach's alpha coefficients for the scales: *Therapy Quality Expectancy*, *Pressure from Others*, *Convenience*, *Professional Support*, and *Behavioral Intention* were higher than in the original version of the instrument. However, the *Ease of Use* scale was less reliable than in the original version of UTAUT-T.

Descriptive statistics

Table 3 presents descriptive statistics for the results obtained on the individual scales of the UTAUT-T questionnaire, i.e., mean values, standard deviations, minimum and maximum results obtained in the sample, as well as the values of skewness and kurtosis measures.

Table 3. **Descriptive statistics for the results obtained on the individual scales of the UTAUT-T questionnaire**

Scale	M	SD	min.	max.	S	K
Therapy Quality Expectancy	28.82	7.28	11	45	0.07	-0.64
Easy of Use	15.17	2.62	6	20	-0.36	0.35
Pressure from Others	5.81	2.03	2	10	-0.02	-0.64
Professional Support	7.06	1.75	2	10	-0.74	0.40
Convenience	6.98	1.86	2	10	-0.33	-0.49
Behavioral Intention	7.19	2.32	1	10	-0.84	-0.18

M – mean value; *SD* – standard deviation; min. – minimum value; max. – maximum value; *S* – skewness measure; *K* – kurtosis measure

The values of the skewness and kurtosis measures ranged from – 1 to 1, which means that there were no deviations from the normal distribution both in terms of symmetry and in terms of dispersion of results around the mean value. As a consequence, parametric statistical methods were used in subsequent analyses, and the path analysis was based on the maximum likelihood method.

Theoretical accuracy analysis

Pearson correlation coefficient (*r*) analysis partially confirmed the hypotheses about the theoretical accuracy of UTAUT-T. Nearly all UTAUT-T scales showed a positive, weak correlation (Pearson's *r* values ranged from 0.130 to 0.373) with motivators and a negative, weak correlation with inhibitors (Pearson's *r* values from – 0.385 to – 0.126) indicated under the technology readiness construct.

The analysis of the relationship between the UTAUT-T subscales and personality dimensions showed only very weak relationships between *Extraversion* and *Therapy Quality Expectancy* ($r = 0.151$) and *Ease of Use* ($r = 0.101$), as well as *Emotional Stability* and *Therapy Quality Expectancy* ($r = 0.150$) and *Ease of Use* ($r = 0.136$). The *Intellect* trait (corresponding to the *Openness to experience*) had a very weak positive correlation with almost all UTAUT-T scales (Pearson's *r* values from 0.103 to 0.191), except for *Convenience,* where no significant correlation was observed.

Table 4. **Correlations between all tested scales**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Therapy Quality Expectancy	1	0.526**	0.463**	0.513**	0.419**	0.770**	0.124*	0.171**	0.046	0.179**	0.195**	0.228**	0.167**	-0.246**	-0.389**	-0.127*
2. Ease of Use	0.526**	1	0.222**	0.268**	0.350**	0.357**	0.098*	0.179**	0.077	0.158**	0.188**	0.238**	0.347**	-0.254**	-0.223**	0.084
3. Pressure from Others	0.463**	0.222**	1	0.462**	0.367**	0.442**	0.056	0.121*	0.018	0.032	0.158**	0.165**	0.099*	-0.078	-0.133**	0.029
4. Professional Support	0.513**	0.268**	0.462**	1	0.206**	0.477**	0.039	0.215**	0.078	-0.010	0.112*	0.118*	0.105*	-0.138**	-0.197**	-0.057
5. Convenience	0.419**	0.350**	0.367**	0.206**	1	0.342**	0.033	-0.028	0.022	0.049	0.040	0.279**	0.157**	-0.061	-0.124*	0.136**
6. Behavioral Intention	0.770**	0.357**	0.442**	0.477**	0.342**	1	0.023	0.145**	0.031	0.115*	0.150**	0.217**	0.103*	-0.176**	-0.302**	-0.089
7. Extraversion	0.124*	0.098*	0.056	0.039	0.033	0.023	1	0.276**	-0.035	0.252**	0.345**	0.044	0.124*	-0.172**	-0.133**	-0.062
8. Agreeableness	0.171**	0.179**	0.121*	0.215**	-0.028	0.145**	0.276**	1	-0.006	0.161**	0.268**	0.067	0.064	-0.113*	-0.030	-0.001
9. Conscientiousness	0.046	0.077	0.018	0.078	0.022	0.031	-0.035	-0.006	1	0.223**	-0.032	-0.006	0.051	0.020	-0.008	0.036
10. Emotional stability	0.179**	0.158**	0.032	-0.010	0.049	0.115*	0.252**	0.161**	0.223**	1	0.255**	0.029	0.132**	-0.200**	-0.213**	-0.124*
11. Intellect	0.195**	0.188**	0.158**	0.112*	0.040	0.150**	0.345**	0.268**	-0.032	0.255**	1	0.128*	0.205**	-0.182**	-0.109*	0.040
12. Optimism	0.228**	0.238**	0.165**	0.118*	0.279**	0.217**	0.044	0.067	-0.006	0.029	0.128*	1	0.402**	-0.211**	-0.301**	0.470**
13. Innovativeness	0.167**	0.347**	0.099*	0.105*	0.157**	0.103*	0.124*	0.064	0.051	0.132**	0.205**	0.402**	1	-0.384**	-0.353**	0.448**
14. Discomfort	-0.246**	-0.254**	-0.078	-0.138**	-0.061	-0.176**	-0.172**	-0.113*	0.020	-0.200**	-0.182**	-0.211**	-0.384**	1	0.493**	0.443**
15. Insecurity	-0.389**	-0.223**	-0.133**	-0.197**	-0.124*	-0.302**	-0.133**	-0.030	-0.008	-0.213**	-0.109*	-0.301**	-0.353**	0.493**	1	0.443**
16. Technology readiness	-0.127*	0.084	0.029	-0.057	0.136**	-0.089	-0.062	-0.001	0.036	-0.124*	0.040	0.470**	0.448**	0.443**	0.443**	1

** Correlation significant at the 0.01 level (2-tailed)

*Correlation significant at the 0.05 level (2-tailed)

UTAUT-T model verification

The UTAUT-T model verification was performed using the path analysis based on the maximum likelihood method. The preliminary model is shown in Figure 2.

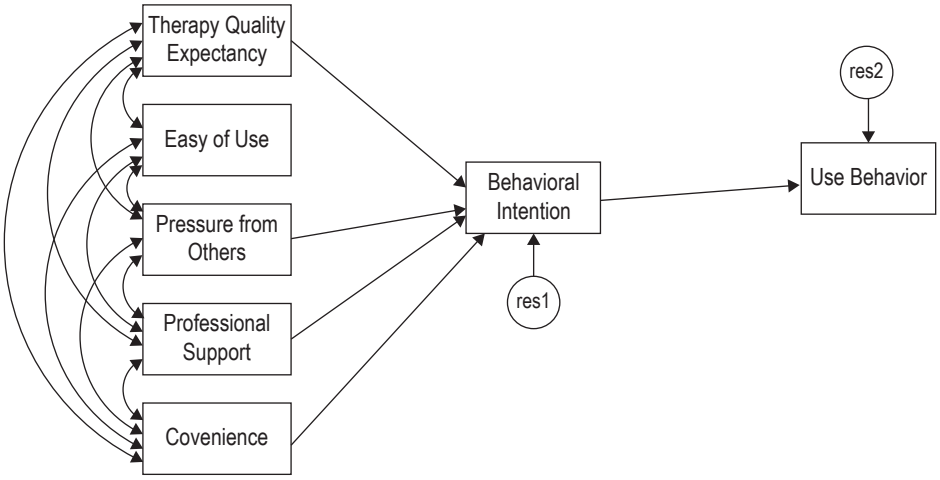

Figure 2. **Preliminary model of the relationships between the analyzed variables**

The values of fit indices for the preliminary model were CFI = 0.96, RMSEA = 0.12, GFI = 0.97, SRMR = 0.05, respectively. When assuming the same thresholds indicating a good fit that we had used for the confirmatory factor analysis, it should be concluded that the value of the RMSEA index was too high. It was also found that the relationships between the scores on the *Convenience* and *Behavioral Intention* scales were statistically insignificant (*beta* = 0.026, $p = 0.487$). The path related to a statistically insignificant dependency was removed. Based on the values of modification indices with a threshold value of 4.0, direct paths were added between *Therapy Quality Expectancy*, *Ease of Use* and *Convenience* and *Use*, thus obtaining the following values of fit indices: CFI = 0.99, RMSEA = 0.02, GFI = 0.99, SRMR = 0.01. Figure 3 shows the final model obtained with the values of the regression coefficients. The presented model explained 57.6% of the *Behavioral Intention* variance and 28.8% of *Use*.

Therapy Quality Expectancy, *Pressure from Others,* and *Professional Support* were correlated positively with the level of *Behavioral Intention*, while *Behavioral Intention* was correlated positively with *Use Behavior*. Statistically significant positive relationships were also found between *Therapy Quality Expectancy*, *Ease of Use* and *Convenience* and *Use Behavior*. *Therapy Quality Expectancy, Ease of Use, Pressure from Others, Professional Support* and *Convenience* were correlated with each other positively.

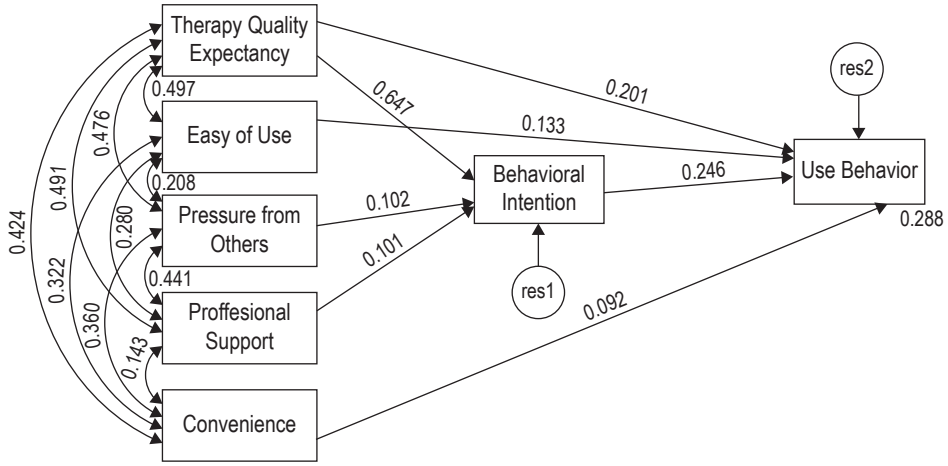

Figure 3. **Final model of the relationships between the analyzed variables**

Discussion

The analysis of the psychometric properties of the Polish adaptation of UTAUT-T showed that the factor structure of the questionnaire is the same as that of the original version of the instrument. The reliability of individual scales, expressed by the Cronbach's alpha coefficient, adopted the properties enabling the use of the Polish version of UTAUT-T in further studies. In addition, the theoretical model of technology acceptance by psychotherapists was confirmed, which can be used to predict the level of the actual use of new technologies at work by this professional group. However, this model differs from the original.

In our analyses of the technology acceptance model, we additionally included the dimension of the actual use of technological solutions by psychotherapists in their work (the *Use Behavior* scale*).* The original UTAUT-T model assumed that stronger behavioral intention enables direct prediction of the level of actual use of new technologies. However, there was no data collected that could prove the use of technological solutions by psychotherapists. The introduction of additional data to the analyzed model, related to actual use, might have caused differences in the relationship between the model's individual dimensions. The observed differences consist in the model showing a direct relationship between *Ease of Use*, *Convenience* and *Use Behavior*, as well as the presence of partial mediation between *Therapy Quality Expectancy* and *Use Behavior*. The obtained results are consistent with other studies [28], which indicate that behavioral intention is not the only direct factor explaining the actual use of technology. The authors show that some of the beliefs influencing the use of technology at work, which are related to the perception of situational conditions, do not affect the

behavioral intention itself, but directly the actual use. For example, according to Ajzen, the founder of the Theory of Planned Behavior [29], intention is the main, but not the only, predictor of behavior. Another important factor is perceived behavioral control, which refers to how people judge the degree of difficulty of a particular action. Both past and anticipated experiences are important, and if the perceived control reflects the actual influence of an individual on the situation, it can be treated as a direct predictor of behavior [29, 30].

When examining the theoretical validity of UTAUT-T in its Polish language version, we expected positive correlations of the UTAUT-T subscales with the dimensions of technology readiness related to motivators (optimism and innovation) and negative correlations with inhibitors (discomfort and uncertainty). The results of the analyses confirmed the existence of such a relationship; however, the relationships demonstrated were weaker than assumed. The obtained results may indicate a distinct nature of the concepts of technology acceptance and technology readiness. John Mowen's 3M (Meta-Theoretic Model of Motivation and Personality) may serve as the basis for explaining the obtained results [31]. The 3M model is usually used to explain consumer behavior. However, Rudnicka [22] notes that contact with technology can be seen as consumption, which allows us to use the model to explain human attitudes towards using technology. The 3M model identifies four types of personality traits that explain behavior: elemental traits (basic predispositions arising from genetic endowment and early learning), compound traits (predispositions arising from the individual's interaction with their environment throughout their life), situational traits (the effect of interaction of elemental and compound traits with conditions of human functioning), and surface traits (behavior in a specific context). Each level is associated with a different psychological construct. The 3M model views technology readiness as referring to individual personality traits that are related to specific circumstances – the possibility of using technology in one's personal and professional life. On the other hand, the acceptance of online therapeutic sessions relates to a specific situation, so it should be treated as behavior in a specific context, i.e., surface traits.

The 3M model can also prove helpful when explaining the observed relationships between personality dimensions and technology acceptance. The presence of single very weak relationships between the dimensions of personality and technology acceptance is consistent with the results of previous studies based on this model. Research [31] conducted, e.g., in the context of sports activity or compulsive shopping, indicates that elemental traits, such as personality, very rarely show a direct relationship with surface traits. If such a correlation is observed, it is very weak.

The structure of the research group, with 77.6% of the respondents being women, may seem to be a limitation of the study. However, research indicates that the gender ratio in the psychotherapeutic environment in Poland and other countries ranges from

4:1 to 6:1. This means that there is one male psychotherapist per every four, five or six female ones. In Poland, women accounted for 85.1% of all psychotherapists in 2021 [32]. Thus, in terms of gender, the structure of the study group has proportions similar to the structure of the psychotherapeutic community in Poland.

It is also worth recalling that the UTAUT-T questionnaire is about online psychotherapy. However, the indicator of actual use of new technologies at work, built for the purpose of the study, includes not only questions about online therapy, but also about the application of new technologies to other professional activities (e.g., using e-mail for professional purposes). The reason for such construction of the indicator was a desire to create more than one question about actual use. In order not to repeat the same content, we decided to extend the thematic scope of the items to other professional activities that are performed to provide online therapeutic services.

Further use of the UTAUT-T questionnaire requires one to bear in mind that the content of the *Behavioral Intention* subscale of the UTAUT-T questionnaire was developed in relation to specific conditions. The statements within this dimension (*After the pandemic ends, I intend to continue using online therapy* and *I plan to continue using online therapy after the pandemic ends*) relate to the intention to conduct post-pandemic online therapy sessions. As a result, after the pandemic ends, these items should be excluded from the questionnaire or reformulated to reflect more general circumstances of online therapy use.

Conclusions

The psychometric properties of the Polish version of the UTAUT-T questionnaire show satisfactory values. The scale can be used to conduct research on the attitude of psychotherapists towards conducting online therapy. Further development of the Polish version of UTAUT-T should extend the analysis of theoretical validity, e.g., by comparing the results of psychotherapists who use online therapy on a daily basis with specialists who mostly work in an office. Due to the emergence of various digital solutions that support the work of therapists, there is also a need to create versions of the UTAUT-T instrument that allow us to measure attitudes towards other technological solutions, e.g., mobile applications offering online psychological intervention.

Another direction for research on the attitude of psychotherapists towards new technologies is to extend the UTAUT-T model to other factors that may contribute to a better explanation of behavioral intentions and the actual use of new technologies in this professional group. It is also advisable to create new indicators of the actual use of new technologies by therapists, which involve, for example, the measurement of time spent on online therapy, taking into account the activity register in electronic devices.

References

1. Van Daele T, Karekla M, Kassianos A, Compare A, Haddouk LS et al. *Recommendations for policy and practice of telepsychotherapy and e-mental health in Europe and beyond.* J. Psychother. Integr. 2020; 30(2):160–173. doi:10.1037/int0000218.
2. Pionke-Ubych R, Kruk D, Kozłowska A. *Czy nowe technologie mogą pomóc w rozpoznawaniu i leczeniu zaburzeń psychicznych?* In: Gawęda Ł, ed. *Kryzys psychiczny w nowoczesnym świecie.* Warszawa: PWN; 2021, pp. 213–240.
3. Egede LE, Acierno R, Knapp RG, Lejuez C, Hernandez-Tejada M, Payne EH et al. *Psychotherapy for depression in older veterans via telemedicine: a randomised, open-label, non-inferiority trial.* Lancet Psychiatry 2015; (2): 693–701. doi:10.1016/S2215-0366(15)00122-4.
4. Lal S, Adair CE. *E-mental health: A rapid review of literature*. Psychiatric Services 2014; 65(1): 24–32.
5. Lindsay JA, Hudson S, Martin L, Hogan JB, Nessim M, Graves L i wsp. *Implementing Video to Home to increase access to evidence-based psychotherapy for rural veterans.* J. Technol. Behav. Sci. 2017; (2): 140–148. doi.org/10.1007/s41347-017-0032-4.
6. Békés V, Aafjes-van Doorn K, Luo X, Prout TA, Hoffman L. *Psychotherapists' challenges with online therapy during COVID-19: Concerns about connectedness predict therapists' negative view of online therapy and its perceived efficacy over time.* Front. Psychol. 2021; (12): 705699. doi:10.3389/fpsyg.2021.705699.
7. Brooks E, Turvey C, Augusterfer EF. *Provider barriers to telemental health: Obstacles overcome, obstacles remaining.* Telemed. J. E-health 2013; 19(6): 433–437. doi.org/10.1089/tmj.2013.0068
8. Roesler C. *Tele-analysis: The use of media technology in psychotherapy and its impact on the therapeutic relationship.* J. Anal. Psychol. 2017; 62(3): 372–394.
9. Simms DC, Gibson K, O'Donnell S. *To use or not to use: Clinicians' perceptions of telemental health.* Can. Psychol. 2011; 52(1): 41–51. doi.org/10.1037/a0022275.
10. Perle JG, Langsam LC, Randel A, Lutchman S, Levine AB, Odland AP et al. *Attitudes toward psychological telehealth: Current and future clinical psychologists' opinions of internet-based interventions.* J. Clin. Psychol. 2012; (69): 1–14. doi: 10.1002/jclp.21912.
11. Rogers H, Madathil K C, Agnisarman S, Narasimha S, Ashok A, Nair A et al. *A systematic review of the implementation challenges of telemedicine systems in ambulances.* Telemed. J. E. Health 2017; (23): 707–717. doi: 10.1089/tmj.2016.0248.
12. Békés V, Aafjes van DK, McCollum J, Prout TR, Hoffman L. *The development of a self-report scale to assess therapists' acceptance of telepsychotherapy.* J. Clin. Psychol. 2022; 78(6): 1240–1260.
13. Venkatesh V, Morris MG, Davis GB, Davis FD. *User acceptance of information technology: Toward a unified view.* Manage. Inf. Syst. Q.2003; 27(3): 425–478. doi.org/10.2307/30036540.
14. Oye ND, Iahad NA. *The history of the UTAUT model and its impact on ICT acceptance and usage by academicians.* Educ. Inf. Technol. 2014; 19(1): 251–270.

15. Liu L, Cruz MA, Rincon AR, Buttar V, Ranson Q, Goertzen D. *What factors determine therapists' acceptance of new technologies for rehabilitation – a study using the Unified Theory of Acceptance and Use of Technology (UTAUT).* Disabil. Rehabil. 2015; 37(5): 447–455. doi.org/10.3109/09638288.2014.923529.

16. Parasuraman A. *Technology Readiness Index (Tri): A multiple-item scale to measure readiness to embrace new technologies.* J. Serv. Res. 2000; 2(4): 307–320. doi.org/10.1177/109467050024001.

17. Sindermann C, Riedl R, Montag C. *Investigating the relationship between personality and technology acceptance with a focus on the smartphone from a gender perspective: Results of an exploratory survey study.* Future Internet 2020; 12: 110. doi:10.3390/fi12070110.

18. Barnett T, Pearson AW, Pearson R, Kellermanns FW. *Five-factor model personality traits as predictors of perceived and actual usage of technology.* Eur. J. Inf. Syst. 2015; (24): 374–390.

19. Maican C, Cazan A-M, Lixandroiu R, Dovleac L. *A study on academic staff personality and technology acceptance: The case of communication and collaboration applications.* Comput. Educ. 2019; (128): 113–131. doi.org/10.1016/j.compedu.2018.09.010.

20. Topolewska E, Skimina E, Strus W, Cieciuch J, Rowiński T. *Krótki kwestionariusz do pomiaru Wielkiej Piątki.* Roczniki Psychologiczne 2014; XVII(2): 367–384.

21. Parasuraman A, Colby CL. *An Updated and Streamlined Technology Readiness Index: TRI 2.0.* J. Serv. Res. 2014; 18(1): 59–74.

22. Rudnicka P. *Gotowość wobec technologii. Konteksty, definicja i pomiar.* Katowice: Wyd. Uniwersytetu Śląskiego; 2021.

23. Costa PT, McCrae RR. *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual.* Odessa, FL: Psychological Assessment Resources; 1992.

24. Bentler PM. *Comparative Fit Indexes in Structural Models.* Psych. Bull. 1990; 107(2): 238–246.

25. Browne MW, Cudeck R. *Alternative ways of assessing model fit.* In: Bollen KA, Long JS, eds. *Testing structural equation models.* Newbury Park, CA: Sage, 1993; pp. 136–162.

26. Baumgartner H, Homburg C. *Applications of structural equation modeling in marketing and consumer research: A review.* Inter. J. Res. Market 1996; 13(2): 139–161.

27. Hu LT, Bentler PM. *Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives.* Structural Equation Modeling 1999; 6(1): 1–55.

28. Agudo-Peregrina AF, Hernández-García A, Pascual-Miguel FJ. *Behavioral intention, use behavior and the acceptance of electronic learning systems: differences between higher education and lifelong learning.* Comput. Hum. Behav. 2014; (34): 301–314. doi.org/10.1016/j.chb.2013.10.035.

29. Ajzen I. *The theory of planned behavior.* Organ Behav. Hum. Decis. Process, 1991; 50(2): 179–211.

30. Ajzen I, Driver ML. *Prediction of leisure participation from behavioral, normative, and control beliefs: An application of the theory of planned behavior.* J. Leisure Sci. 1991; (13): 185–204.

31. Mowen JC. *The 3M Model of motivation and personality: Theory and empirical applications to consumer behavior.* Kluwer Academic Press; 2000.

32. Hermanowski M. *Psychoterapeuci i psychoterapeutki w Polsce. Analiza cech populacji.* Poznań: Wyd. Nauk Społecznych i Humanistycznych UAM; 2021.

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