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Factors Influencing Acceptance and Use of Online Counseling Technology among Thai Psychologists and Mental Health Counsellors

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Abstract

The rapid growth of online counseling (OC) services for mental health during the COVID-19 pandemic prompted concerns regarding its effectiveness compared to in-person counseling. Psychologists have expressed uncertainties about OC's efficacy and doubts about their competence in using it. As a result, psychologists have been hesitant to embrace OC methods and supporting technologies. Therefore, it has become crucial to study the factors that influence the acceptance and use of OC technology, enabling psychologists to develop the necessary skills and confidence to utilize inpatient treatment effectively. This study used quantitative research with survey research to study factors influencing 406 Thai counselors' use and acceptance of technology in online counseling, and the model was analyzed using structural equation modeling. Results showed that IOC are positively influenced by SI (β= .413, p<.001, t = 9.95) ATOC (β= .398, p<.001, t = 7.09), and PE (β= .114, p<.05, t = 2.01). While IOC is negatively influenced by FC (β= -.117, p<.05, t = -2.08). Furthermore, UOC was positively influenced by IOC (β= .511, p<.001, t = 9.64). On the contrary ATOC negatively affected UOC (β= -.215, p<.001, t = -3.77), indicating that it exerts a partial mediation effect on the relationship between PE, SI, FC, ATOC and UOC. The study represents a pioneering study on UTAUT use in determining technologies' influence on online mental health counseling in Southeast Asia. The findings could offer valuable perspectives on how to increase the uptake of online counseling among psychologists by elevating the perceived advantages of the service, assisting in the creation of more efficient, organizations or authorities that foster positive attitudes toward the use of online counseling among psychologists, and fostering increased acceptance and usage of online counseling going forward.

INTRODUCTION

The COVID-19 pandemic contributed to a dramatic demand for flexible mental health service delivery methods, resulting in the growth of technology-based psychological interventions, particularly online and telephone counseling (Yurayat & Tuklang, 2023). In this study, online counseling (OC) is defined as "any delivery of mental and behavioral health services, by a licensed practitioner to a client in a non-face-to-face setting through distance communication technologies such as the telephone, asynchronous e-mail, synchronous chat, and videoconferencing" (Mallen et al., 2005). Clients are using videoconferencing,

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synchronous chat, and asynchronous e-mail with professional psychologists in place of or in addition to face-to-face (FtF) counseling (Mallen et al., 2005).

Due to the global COVID-19 pandemic, many psychotherapists were compelled to halt their face-to-face sessions abruptly and transition to online psychotherapy. Individuals worldwide were encouraged to practice social isolation and work from home to slow the spread of the COVID-19 virus. Consequently, many psychotherapists quickly shifted to providing online psychotherapy, often without prior notice or planning, even if they had reservations about doing so in the past (Ahlström et al., 2022; Békés et al., 2022).

During COVID, there has been a survey of Thai people's mental health problems. Thai people's mental health issues have been surveyed during the COVID-19 pandemic. An assessment of mental health taken through the Ministry of Public Health's Mental Health Check-In system revealed alarming statistics as of October 1, 2023. Out of the 3,580,186 respondents, it was found that 257,534 individuals (7.19%) experienced high levels of anxiety, 305,587 individuals (8.54%) were at risk of depression, 168,461 individuals (4.71%) were at risk of suicide, and 33,823 individuals (4.25%) experienced burnout (Mental Health Check-In, 2022). Telemental health has a wide range of applications and supporting data, particularly when it comes to treating PTSD, anxiety, and depression. Delivery of mental health services has been demonstrated to benefit from the use of text messaging, email, online forums, smartphone apps, videoconferencing, and text messaging (Chen et al., 2023).

With people experiencing stress, depression, suicidal tendencies, and burnout and unable to access counseling services as usual from mental health and psychiatric facilities, the severity of mental health issues escalated. Consequently, telehealth, telepsychology, or OC has been implemented by relevant agencies to provide services to the general population. Counseling using technology has been proven effective in continuous treatment, emergency response, and managing global epidemics. As a result, online counseling has become increasingly popular during the COVID-19 pandemic (Genc & Kara, 2021). Moreover, there are advantages as well as disadvantages to using internet therapy. Its accessibility from anywhere at any time makes it advantageous and enables real-time user sessions. It saves time and money as well. The users' need for consistent internet access is the main vulnerability (Mulawarman et al., 2023).

In general, Southeast Asian countries do not offer general telepsychiatry services (Narvaez, 2022). However, following the global COVID-19 outbreak, Southeast Asian countries are adopting eHealth services at a growing pace. In addition, the acceptance of eHealth satisfies the growing needs of clients for improved healthcare services (Lwin et al., 2023). Positive results from telehealth have also been observed, particularly during the pandemic in Singapore. As to Daruwalla et al. (2014), medical professionals who have utilized the MyDoc® mobile messaging platform have unanimously agreed that it should take the place of the existing peer-to-peer communication technologies in an orthopedic clinic. Over time, the Philippines has seen a boom in telehealth due to improved access to information and communication technologies. Owing to the pandemic, teleconsultations are now possible via COVID-19 hotlines, websites, and mobile apps that have been established by numerous organizations and companies.

Although online counseling has proven highly beneficial, and studies have shown that online counseling meets the public's needs during the COVID-19 pandemic, many psychologists and psychiatrists still resist assimilation and expansion into this form of therapy (Kaphzan et al., 2022). Their reluctance is due to concerns about the perceived lower efficacy of online counseling compared to face-to-face therapy (Brooks et al., 2013) and various limitations associated with providing online counseling services. These limitations include negative impacts on therapeutic relationships, difficulties in understanding nonverbal cues and emotional communication, licensing regulations, risks to patient confidentiality, patient safety, interoperability, emergency preparedness, internet connectivity issues, patient identification,

and the knowledge and abilities of counselors (Connolly et al., 2020; Kaphzan et al., 2022). Therefore, it is crucial to examine the factors influencing the acceptance and use of technology for online counseling (OC) to alleviate psychologists' anxieties and promote their acceptance and utilization of OC.

A widely recognized theoretical framework for investigating the use and acceptance of advanced technologies is the UTAUT (Unified Theory of Acceptance and Use of Technology) framework, which aims to understand the concepts of '*actual use'* and '*behavioral intention to use*.' It predicts technology adoption behavior (Venkatesh et al., 2003). UTAUT has been developed to assess the likelihood of users accepting new information technology, explain the factors influencing the acceptance of new technology, and set proactive goals and training for psychologists to increase their acceptance of new technologies. The four factors of UTAUT included performance expectations (PE), effort expectations (EE), facilitating conditions (FC), and social influence (SI) (Venkatesh et al., 2003). After the pandemic, Békés et al. (2021) created the UTAUT-T, a modified version of the UTAUT intended for therapists in the modern era. The five factors included therapy quality expectancy, pressure from others, ease of use, convenience, and professional support; these factors were all successful in predicting therapists' intention to use OC in the future. UTAUT-T has limitations even with its contribution. For instance, three of its five factors included just two items. Due to the factor structure's opposition to the development of a stable scale, this has proven to be the UTAUT-T's greatest limitation. Furthermore, UTAUT-T only looked at therapists' intention to accept OC (Chen et al., 2023).

Furthermore, individuals' intentions to use telemedicine are influenced by attitudes toward using technology, perceived usefulness, and ease of use (Anderson et al., 2022; Andriani & Berlianto, 2022). Additionally, one element influencing Israeli psychiatrists' acceptance and utilization of telepsychiatry technology is perceived risk. Perceived risk and behavioral intention are negatively correlated. Essentially, this indicates that Israeli psychiatrists use telepsychiatry less frequently if they perceive it to be high risk for patients (Kaphzan et al., 2022). Additionally, in particular circumstance, it is crucial to the first perceived risks of that licensed clinicians perceive in order to guide future efforts toward increasing confidence and intention to use telemedicine with patients who are at high risk of suicide (Gilmore & Ward-Ciesielski, 2019). In this study, the UTAUT model (Venkatesh et al., 2003) was modified by adding factors related to *perceived risk* (Kaphzan et al., 2022) and *attitude toward online counseling* use (Anderson et al., 2022; Andriani & Berlianto, 2022). PR provides a problem for patients as well since people who consider about performing online counseling may view certain risks as part of the treatment delivery process, which could affect their perceptions and intentions around implementing and using technology for mental health support (Egea & González, 2011). Furthermore, attitude toward online counseling use, according to research by Kaphzan et al. (2022), Israeli psychiatrists' behavioral intention to use telepsychiatry is significantly influenced by their attitudes toward telepsychiatry.

Thus, this study investigates the factors influencing psychologists' intention and use of technology in online counseling and provides data for policy-making and planning to increase the use of technology in online counseling. Furthermore, it aims to identify the obstacles preventing psychologists from intention and using technology in online counseling.

Literature Review

The authors identified four primary UTAUT factors and two additional factors hypothesized as influencing a psychologist's *intention to use online counseling* (IOC) and *usage of online counseling* (UOC). Specifically, the authors identified the four main UTAUT factors as *performance expectations* (PE), *effort expectations* (EE), supportive environment/*facilitating conditions* (FC), and *social influence* (SI). Moreover, two additional factors were identified

from the literature as potentially supporting IOC and UOC. These were *perceived risk* (PR) and the mental health specialist's *attitudes towards online counseling* (ATOC).

Unified Theory of Acceptance and Use of Technology (UTAUT)

Remarkably, the COVID-19 outbreak at the end of 2019 coincided with an upward trend in OC, as psychological trauma and the need for mental health services increased as the post-pandemic environment became the new normal (Serafini et al., 2020). However, individuals need to use and accept these solutions to be effective. Previous research has demonstrated that UTAUT can account for a significant portion of individuals' behavioral intentions variability, with a reported explanatory power of up to 70% (Venkatesh et al., 2003). Additionally, UTAUT has been found to explain approximately 50% of the variance in technology use (Venkatesh et al., 2012). What sets UTAUT apart from other acceptance models is its incorporation of crucial moderators, such as age, gender, experience, and voluntariness, contributing to its robust predictive capabilities (Dwivedi et al., 2017). The primary conclusions show that the most popular models for illustrating the variables influencing telemedicine adoption among healthcare providers and patients across various nations and telemedicine contexts are the Technology Acceptance Model (TAM), the Unified Theory of Acceptance, and the Use of Technology (UTAUT) model (Rouidi et al., 2022). Two technology acceptance models are TAM and UTAUT. It's hardly unexpected that both share many parallels given that TAM served as the foundation for the development of UTAUT, among other things (Ammenwerth, 2019).

In order to investigate the factors influencing the intention and use of technology among psychologists performing online counseling (OC), the authors of this study applied the UTAUT (Venkatesh et al., 2003). They also added factors related to perceived risk (Kaphzan et al., 2022) and attitude toward the use of online counselling (Anderson et al., 2022; Andriani & Berlianto, 2022).

Online Counseling (OC)

Online Counseling (OC) The application of technology to support and provide mental health therapy began in the 1960s with psychiatric treatment, with closed-circuit television used as an experimental tool for group psychotherapy (Norman, 2006). In the realm of e-counseling, the 1960s saw the development of the first system known as *ELIZA.* ELIZA was a computer software designed to simulate a counseling session where clients interacted with a computer instead of a counselor (Weizenbaum, 1966). ELIZA was later succeeded by *PLATO* (*Programmed Logic for Automatic Teaching Operations*). Computer technology, in the early stages of online counseling, chatrooms and email messages were the main forms of communication. Moreover, videoconferencing usage grew with time (Kraus et al., 2010). At the height of COVID-19 in 2022, 80% of Taiwanese licensed therapists offered OC services (Chen et al., 2023).

Despite previous research indicating no significant difference in effectiveness between face-to-face and online counseling (Barak et al., 2009), many researchers view telemedicine and online counseling as highly beneficial. These benefits include increased convenience and accessibility to services, anonymity, reduced social stigma, cost and time savings, privacy, and a sense of safety in a comfortable environment (Yurayat & Seechaliao, 2022). However, the acceptance and adoption of technology by psychiatrists, therapists, or psychologists have been slower than anticipated due to concerns related to licensing regulations, patient confidentiality, reimbursement issues, patient safety, interoperability, technological errors, and internet connectivity issues, as well as difficulties in perceiving nonverbal cues and body language (Davis, 1989; Kaphzan et al., 2022).

Performance Expectations (PE)

According to Venkatesh et al. (2003), PE is "the degree to which an individual believes that using the system will help him or her to attain gains in job performance." PE describes an individual's belief in using technology to improve job performance (Venkatesh et al., 2003). Factors influencing PE include perceived usefulness, job fit, extrinsic motivation, relative advantage, and outcome expectation (Venkatesh et al., 2003). In order to better serve therapists in the modern era, Békés et al. created the UTAU-T, a modified version of the UTAUT that included five factors: therapy quality expectancy, pressure from others, ease of use, convenience, and professional support. These factors together accurately predicted therapists' intention to use OC in the future (Békés et al., 2021). According to the UTAUT, concurrent intents to use telepsychology services (video services) of mental health clinicians were favorably predicted by performance expectancy (Zentner et al., 2022).

Effort Expectations (EE)

The definition of EE is "the degree of ease associated with the use of the system" Venkatesh et al. (2003). EE refers to an individual's perception of how easy or difficult it is to use a particular technology. The EE construct encompasses several factors, including perceived ease of use, complexity, and ease of use (Venkatesh et al., 2003). Numerous studies have demonstrated that EE significantly impacts individuals' behavioral intention to accept and utilize digital technologies (Sair & Danish, 2018).

Facilitating Conditions (FC)

According to Venkatesh et al. (2003), "the degree to which an individual believes that an organization's and technical infrastructure exists to support the use of the system" is the definition of FC. FC encompasses an individual's belief in the supportive organizational and technical infrastructure for technology use. Within the FC construct, factors such as perceived behavioral control, facilitating conditions, and compatibility (Venkatesh et al., 2003).

Social Influence (SI)

According to Venkatesh et al. (2003), SI is "the degree to which an individual perceives that important others believe he or she should use the new system." SI reflects the significance individuals attribute to the beliefs and opinions of others regarding adopting new technology. SI consists of factors such as subjective norms, social factors, and images, that shape individuals' decision-making processes (Venkatesh et al., 2003).

Perceived Risk (PR)

PR is the perception that technology related to online counseling may pose a risk or harm to the counselor's diagnosis and treatment or assistance (Dwivedi et al., 2017). PR is the perception that technology related to online counseling may pose a risk or harm to the counselor's diagnosis and treatment or assistance (Dwivedi et al., 2017). PR is also an issue on the patient side as individuals who consider engaging in online counseling may perceive certain risks associated with this mode of therapy delivery, influencing their attitudes and intentions towards accepting and using technology for mental health support (Egea & González, 2011). Often mentioned concerns are the confidentiality and privacy of sensitive information shared during counseling sessions (Yurayat & Seechaliao, 2022). According to Szlamka et al. (2021), therapists should be prepared to handle for high-risk clients because of the physical inaccessibility of OC. This preparation should include crisis evaluations, crisis intervention plans, and reinforcing the connections between various resources.

Another dimension of perceived risk is the quality and effectiveness of OC compared to traditional in-person therapy. The absence of nonverbal cues, physical presence, and the

limitations of technology-mediated communication may contribute to doubts and skepticism regarding the outcomes of online counseling.

Furthermore, technical issues and disruptions during OC sessions can be perceived as risks. Concerns about poor internet connectivity, dropped calls, or other technical glitches may undermine the smooth flow of the therapeutic process and hinder effective communication between the client and the counselor.

Attitudes Towards Online Counseling (ATOC)

ATOCs are psychologists' psychological predispositions expressed by assessing their level of liking or disliking technology for providing counseling, which in online counseling (Ajzen, 1991; Connolly et al., 2020; Davis et al., 1992). Past research has shown that the attitude of counseling psychologists toward OCs can affect the perceptions and expectations of those involved (Goldschmidt et al., 2021; Pierce et al., 2020), affect the acceptance and use intentions of telepsychiatry or OC (Kaphzan et al., 2022), and affect the efficacy of the treatment (Tonn et al., 2017). Furthermore, in a revised version of UTAUT, Dwivedi et al. (2019) observed that attitude construct was incorporated as a partial mediator of the effects of exogenous constructs on behavioral intentions.

Objectives

This study aimed to 1) investigate the influence of the factors *performance expectations* (PE), *effort expectations* (EE), *facilitating conditions* (FC), *social influence* (SI), *perceived risk* (PR), and *attitude towards online counseling* (ATOC) on *intention to use online counseling* (IOC), 2) investigate the influence of ATOC and IOC on *usage of online counseling* (UOC) among psychologists, and 3) examine that the IOC mediates the relationship between PE, EE, FC, SI, PR, ATOC and UOC.

Hypotheses

Therefore, from the overview of the literature review, the authors propose the following fourteen hypotheses (Figure 1):

H1: Performance Expectations (PE) directly influence the Intention to use Online Counseling Services (IOC).

H2: Effort Expectations (EE) directly influence the Intention to use Online Counseling Services (IOC).

H3: Facilitating Conditions (FC) directly influences the Intention to use Online Counseling Services (IOC).

H4: Social Influence (SI) directly influences the Intention to use Online Counseling Services (IOC).

H5: Perceived Risk (PR) directly influences the Intention to use Online Counseling Services (IOC).

H6: Attitude Towards Online Counseling (ATOC) directly influences Intention to use Online Counseling Services (IOC).

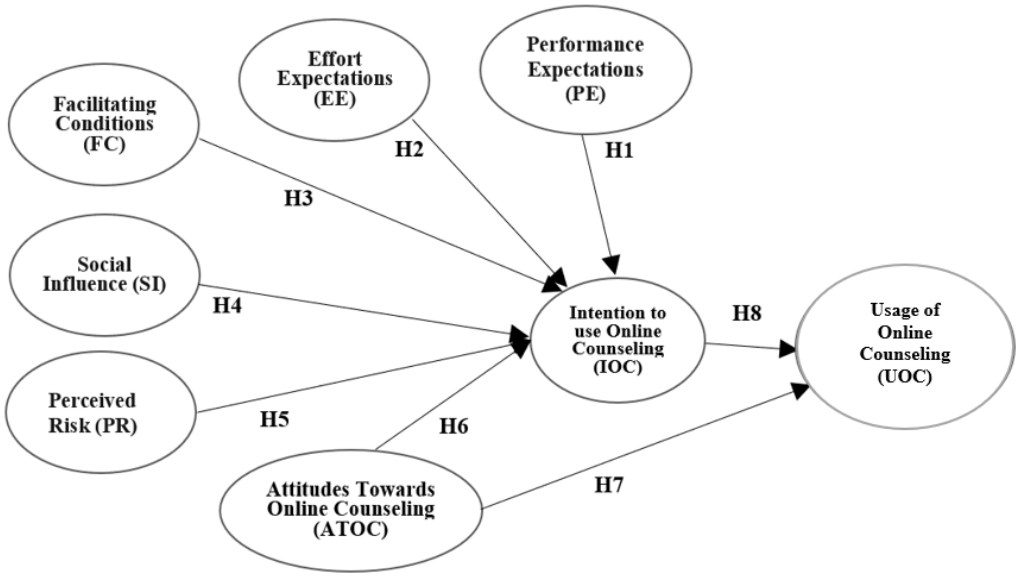
H7: Attitude Towards Online Counseling (ATOC) directly influences Usage of Online Counseling (UOC).

H8: Intention to use Online Counseling Services (IOC) directly influences Usage of Online Counseling (UOC).

H9: Performance Expectations (PE) indirectly influence Usage of Online Counseling (UOC) through Intention to use Online Counseling Services (IOC).

H10: Effort Expectations (EE) indirectly influence Usage of Online Counseling (UOC) through Intention to use Online Counseling Services (IOC).

H11: Facilitating Conditions (FC) indirectly influence Usage of Online Counseling (UOC) through Intention to use Online Counseling Services (IOC). through Intention to use Online Counseling Services (IOC).
H12: Social Influence (SI) indirectly influences Usage of Online Counseling (UOC) through Intention to use Online Counseling Services (IOC).
H13: Perceived Risk (PR) indirectly influences Usage of Online Counseling (UOC) through Intention to use Online Counseling Services (IOC).
H14: Attitude Towards Online Counseling (ATOC) indirectly influences Usage of Online Counseling (UOC) through Intention to use Online Counseling Services (IOC).



Note: H9, H10, H11, H12, H13, and H14 are for indirect effects of predictors on UOC through IOC

Figure 1. The study's conceptual model for the hypotheses

METHODS

Population and Sample

This research used quantitative and survey research to study factors influencing counselors' acceptance and use of technology in online counseling. The participants comprised 406 mental health counselors and psychologists employed by Thailand's Ministry of Public Health, the Ministry of Justice, the Office of the Court of Justice, and the Ministry of Education. The sample size was identified using Krejcie and Morgan (1970) sample size method, with a 5% margin of error and a 95% degree of confidence.

$$n = \frac{x^2 Np(1-p)}{e^2(N-1)+x^2 p(1-p)} \quad (1)$$

Instruments

The instrument used in this research was a questionnaire on factors influencing psychologists' acceptance and use of technology, divided into four parts. These were: Part 1: Questions for demographic classification; Part 2: Questions for experiences and predilection in the use of technology for online counseling; Part 3: Questions on the practicality of using technology for online counseling; and Part 4: Questions on factors influencing psychologists' adoption and use of technology in online counseling. Finally, the number of questionnaire items for each factor is detailed in Table 1.

Validity and Reliability of the Questionnaire

A questionnaire on factors influencing the acceptance and use of technology by psychologists comprised 40 items, with a discrimination power ranging from 0.39 to 0.82. Cronbach's alpha coefficient analysis was as follows: *performance expectations* (PE) = 0.854, *effort expectations* (EE) = 0.853, *facilitating conditions* (FC) = 0.856, *social influence* (SI) = 0.771, *perceived risk* (PR) = 0.740, *attitude toward online counseling* (ATOC) = 0.866, and *intention to use online counseling* (IOC) = 0.896. For the convergent validity, there are three criteria for evaluating it. The first one is that all the CFA items should be higher than .40 (Hair et al., 2006), the second one is that the composite reliability (CR) should be higher than .70 (Hair et al., 2010), and the third one is the average variance extracted (AVE) of constructs should be higher than .50 (Hair et al., 2010). These results are summarized in Table 1.

Table 1. Confidence Values

Influencing Factors	Supporting Literature	Items	α	Loading	CR	AVE
Performance Expectations (PE)	Békés et al. (2021)	10	0.854	.377 - .741	0.859	0.385
Effort Expectations (EE)	Venkatesh et al. (2003)	3	0.853	.765 - .881	0.869	0.689
Facilitating Conditions (FC)	Békés et al. (2021); Kiatkamjorn (2014)	9	0.856	.441 - .746	0.868	0.429
Social Influence (SI)	Venkatesh et al. (2003)	4	0.771	.655 - .879	0.846	0.582
Perceived Risk (PR)	Egea & González (2011)	2	0.740	.781 - .805	0.772	0.629
Attitude Toward Online Counseling (ATOC)	Tonn et al. (2017)	8	0.866	.609 - .800	0.909	0.558
Intention to use Online Counseling (IOC)	Venkatesh et al. (2012); Kolog et al. (2015)	4	0.896	.633 - .961	0.887	0.666
Total		40	0.954			

Data Collection

When the sample size for the study was determined, the researcher promoted it through online social media channels such as Facebook pages and Line groups of the Thai Clinical Psychologists Association, the association under the Ministry of Public Health, and the Ministry of Justice's Office of the Judiciary and the Ministry of Education.

The study's promotion aimed to recruit psychologists affiliated with Thailand's Ministry of Public Health, the Ministry of Justice, and the Ministry of Education. Further selection criteria stated that participants had to be at least 20 years of age and actively engage in online counseling. Afterward, the interested participants were directed to a questionnaire in Google Forms. The researchers provided detailed explanations and instructions about the objectives and importance of the research project and clarified the ethical considerations and research consent for human subjects.

If the participants understood and accepted these conditions, they consented to participate in the project. They proceeded to answer the acceptance and usage questionnaire for online counseling provided by the counselor. Subsequently, the researcher collected the data and validated and selected the measurement instruments from June 2022 to September 2022.

Data Analysis

The variables and criteria for rating the opinions of factors influencing the acceptance and use of technology by psychologists in online counseling were measured using Likert's Scale, which consisted of 5 levels of scores: 1 'Strongly Disagreed' to 5 'Strongly Agreed', except for the variable of actual usage behavior, which was measured on an ordinal scale of 1-4 (1 = 'Never Used,' 2 = '1-2 times per month,' 3 = '3-4 times per month,' and 4 = 'More than four times per month').

The interpretation of average questionnaire scores related to the opinions influencing the acceptance and use of technology in online counseling by psychologists, using a Likert scale with five levels, was as follows: Average score 4.21 - 5.00: 'Strongly Agreed' Average score

3.41 - 4.20: 'Agreed' Average score 2.61 - 3.40: 'Neutral' Average score 1.81 - 2.60: 'Disagreed' Average score 1.00 - 1.80: 'Strongly Disagreed.'

The interpretation of average questionnaire scores related to the actual usage behavior of psychologists in online counseling, measured on an ordinal scale with four levels, was as follows: Average score 3.26 - 4.00: 'High Usage' Average score 2.51 - 3.25: 'Moderate Usage' Average score 1.76 - 2.50: 'Low Usage' Average score 1.00 - 1.75: 'Very Low Usage.'

SPSS for Windows software was used to perform the data analysis, which included descriptive statistics measures such as frequency, percentage, mean, standard deviation (SD), Pearson's correlation coefficient (Ditsuwan & Sukkamart, 2022), and hypotheses testing using the structural equation model with Mplus program version 7.4. Analyze the direct and indirect influence of variables related to Behavioral Intention to use Technology.

RESULTS AND DISCUSSION

Results

Demographic Data (n =406)

The respondents in the research survey were predominantly female, accounting for 74.6%. Males and LGBTQ+ individuals accounted for 24.6% and 0.7%, respectively. Regarding educational attainment, 73.2% held a bachelor's degree, 24.9% had a master's degree, and 2% held a doctoral degree.

Most respondents identified themselves as psychologists, 53.2% being clinical psychologists and 46.8% as counseling psychologists. Among the psychologists, 50.5% possessed professional licenses in clinical psychology, while 49.5% did not hold professional licenses. Regarding organizational affiliation, the majority (57.6%) were affiliated with the Ministry of Public Health, followed by the Ministry of Education, Ministry of Justice, and Office of the Court of Justice, accounting for 18.2%, 13.1%, and 11.1%, respectively.

The primary theoretical approach utilized in providing online counseling was Cognitive Behavior Therapy (CBT), accounting for 21.1%. Behavior Therapy accounted for 14.9%, Integrated Therapy represented 14.7%, and Person-Centered Therapy accounted for 10.5%.

Regarding acceptance and utilization of technology for online counseling, most psychologists (70.4%) expressed willingness to adopt and use technology. Conversely, 7.4% of respondents were not interested. Additionally, the average experience providing online counseling was 1.29 years, with a maximum experience of 20 years. The average age of the respondents was 34.21 years, with the youngest respondent being 23 years old and the oldest being 66 years old, as shown in Table 2.

Factors Influencing the Counselor Adoption and Use of Technology

Table 3 details the descriptive statistics analysis of the mean and standard deviation (SD) for the nine latent variables proposed for the study. In it, we note the strong support and agreement for the importance of several items. First and foremost was the participant's strong agreement (SA) with the importance of their *expectation of ease of use* (mean = 4.464, SD = .546). Next, the participants had a SA with the importance of *social influence* (SI) (mean = 4.338, SD = .471) and *perceived risk* (PR) (mean = 4.324, SD = .637). However, the *usage of online counseling* (UOC) (mean = 1.847, SD =.949) was judged to be of very little usage.

Pearson Product-Moment Correlation (PPMC) (r) analysis

Table 4 provides the PPMC correlation coefficient relationship results and their *r*-value construct validity (CV). Results revealed that all the model's coefficients were in the same direction and correlated. Moreover, the common interpretation of the values for PPMC analysis suggests that 0.10-0.29 is weak, 0.30-0.49 is moderate, and 0.50-1.00 is strong. The authors also carried out regression analysis to test the objectives. The acceptance and use of technology

in OC were used as the dependent variable, while the factors variables were the independent variables. Based on the analyses, all regression coefficients (weights) are significant at the significance level of 0.05 ($p < 0.05$) (Table 4).

Table 2. Participant Demographic Profile (*n = 406*)

Variables	Category	No.	%
Gender	Male	100	24.6
	Female	303	74.6
	LGBTQ+	3	0.7
Highest level of education	Bachelor's Degree	297	73.2
	Master's Degree	101	24.9
	Ph.D.	8	2.0
Position	Psychologist	216	53.2
	Clinical Psychologist	190	46.8
Professional license?	Yes	205	50.5
	No	201	49.5
Department	Ministry of Public Health	234	57.6
	Office of the Court of Justice	45	11.1
	Ministry of Education	74	18.2
	Ministry of Justice	53	13.1
Voluntary / Assigned	Voluntarily	376	92.6
	Assigned	30	7.4
Key theoretical concepts used in psychological counseling (more than one answer is possible)	Cognitive Behavior Therapy (CBT)	288	21.1
	Behavior Therapy	203	14.9
	Combination Therapy	201	14.7
	Person-Centered Therapy	144	10.5
	The Satir Model Therapy	108	7.9
	Mindfulness-Based Therapy and Counseling	89	6.5
	Humanistic Therapy	86	6.3
	Rational Emotive Behavior Therapy (REBT)	76	5.6
	Gestalt Therapy	64	4.7
	Psychoanalytic Therapy	62	4.5
	Solution-Focused Brief Therapy (SFBT)	28	2.0
	Other Ideas	18	1.3
	Mean	SD	Minimum	Maximum
Online counseling experience (years)	1.293	2.011	0.00	20.00
Age (years)	34.209	8.632	23.00	66.00

Table 3. Factors Influencing Technology Adoption and Use

Constructs	Items	Mean	SD	Level
Performance Expectations (PE)	10	4.095	.504	Agree
Effort Expectations (EE)	3	4.464	.546	SA
Facilitating Conditions (FC)	9	3.892	.716	Agree
Social Influence (SI)	4	4.338	.471	SA
Perceived Risk (PR)	2	4.324	.637	SA
Attitudes Toward Online Counseling (ATOC)	8	4.217	.540	SA
Intention to use Online Counseling (IOC)	4	3.796	.792	Agree
Usage of Online Counseling (UOC)	1	1.847	.949	Low

Note: PE, EE, FC, SI, PR, ATOC and IOC: 4.21 - 5.00: Strongly Agree, 3.41 - 4.20: Agree, 2.61 - 3.40: Neutral, 1.81 - 2.60: Disagree, 1.00 - 1.80: Strongly Disagree, UOC: 3.26 - 4.00: High Usage, 2.51 - 3.25: Moderate Usage, 1.76 - 2.50: Low Usage, 1.00 - 1.75: Very Low Usage

Table 4. Main Variable Correlations (*r*)

Variables	PE	EE	SI	FC	PR	ATOC	IOC	UOC
PE	1							
EE	.529**	1						
SI	.581**	.353**	1					
FC	.668**	.654**	.444**	1				
PR	.099*	.258**	.151**	.307**	1			
ATOC	.732**	.594**	.547**	.696**	.173**	1		
IOC	.564**	.359**	.641**	.413**	0.091	.622**	1	
UOC	.198**	0.054	.299**	.121*	-0.022	.103*	.378**	1

Note: * $p < .05$ level, ** $p < .01$; values arrived at using Pearson's *r*.

Table 5. Testing the Direct and Indirect Relationships

Hypothesis	Relationship	Estimate	S.E.	Result
H1	PE → IOC	.114*	.056	Supported
H2	EE → IOC	-.003	.047	Not Supported
H3	FC → IOC	-.117*	.056	Supported
H4	SI → IOC	.413**	.041	Supported
H5	PR → IOC	-.015	.037	Not Supported
H6	ATOC → IOC	.398**	.056	Supported
H7	ATOC → UOC	-.215**	.057	Supported
H8	IOC → UOC	.511**	.053	Supported
H9	PE → IOC→ UOC	.058*	.029	Supported
H10	EE → IOC→ UOC	-.001	.024	Not Supported
H11	FC → IOC→ UOC	-.060*	.029	Supported
H12	SI → IOC→ UOC	.211**	.031	Supported
H13	PR → IOC→ UOC	-.008	.019	Not Supported
H14	ATOC → IOC→ UOC	.204**	.036	Supported

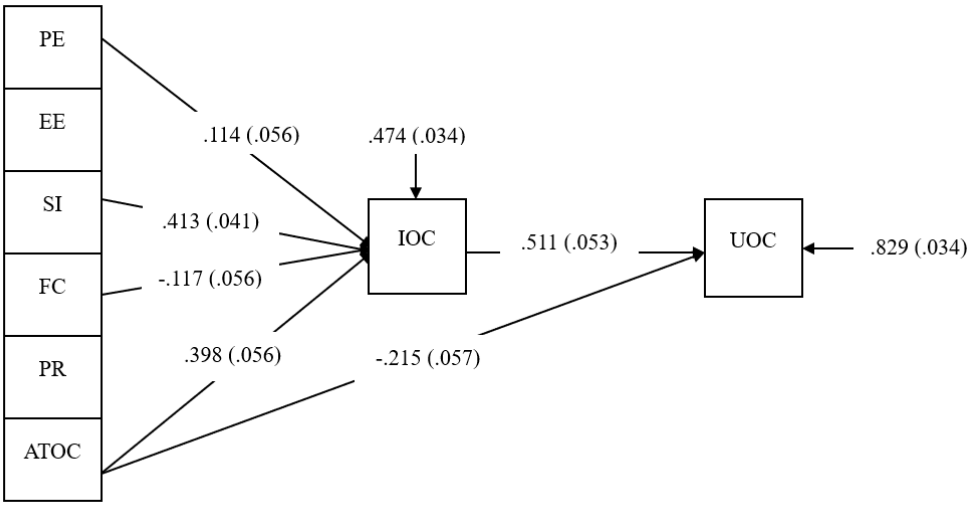


Figure 2. Final Mplus 7.4 SEM of Variables Influencing Psychologists' Usage of Online Counseling.

Hypotheses Testing Results

In addition, model applicability tests were conducted to determine whether the proposed model was optimal. A multifactor validation model was also executed. Chi-square/degrees of freedom ($\chi 2$/df) comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean residual (SRMR) were used. Multiple measurement parameters were implemented to test the goodness of fit of the model.

The results of the model analysis showed that the model had the best fit with $\chi^2/df = 2.614 < 3$, CFI = .97 > 0.9, TLI = .94 > 0.9, RMSEA = .06 < .08, and SRMR = .02 < .08, which met the criteria (McDonald & Ho, 2002).

Upon analyzing the results, it was found that H1, H3, H4, H6, H7, and H8 were supported, indicating that the following factors have a statistically significant impact on IOC at a significance level of $p < 0.05$. These factors include PE (β = .114, t = 2.017, p = 0.044*), FC (β = -.117, t = -2.084, p = 0.037*), SI (β = .413, t = 9.953, p = 0.001**), and ATOC (β = .398, t = 7.093, p = 0.001**). Furthermore, ATOC significant effect to UOC (β = -.215, t = -3.776, p = 0.001**), and IOC significant effect to UOC (β = .511, t = 9.643, p = 0.001**). However, the results revealed that EE and PR did not exhibit statistical significance about IOC, rendering H2 and H5 unsupported (Table 5 and Figure 2).

In addition to that, variables that have an indirect influence on UOC through IOC are as follows: PE (β = .058, t = 1.973, p = 0.049*), FC (β = -.060, t = -2.037, p = 0.042*), SI (β = .211, t = 6.841, p = 0.001**), and ATOC (β = .204, t = 5.606, p = 0.001**). Likewise, IOC does not mediate the relationships of EE and PR (Table 5).

Discussion

The study focused on performance expectations, facilitating conditions, social influence, and attitude towards online counseling as factors influencing therapists' behavioral intentions to use technology for OC. The researchers also explored the direct impact of attitude towards online counseling and behavioral intention on therapists' acceptance and use of technology for OC. Additionally, the researchers examined the role of intention to use technology as a mediate variable between performance expectations, facilitating conditions, social influence, attitude towards online counseling and usage of OC among psychologists.

According to the UTAUT framework, performance expectancy, effort expectancy, facilitating conditions, and social influence are reported as determinants of intention to use new technology (Venkatesh et al., 2003). In the context of therapists' acceptance and use of technology for OC, factors such as performance expectations, facilitating conditions, social influence, and attitude towards online counseling positively influence behavioral intentions. This aligns with the findings of Akinnuwesi et al. (2022), who highlighted the significant impact of performance expectancy, facilitating conditions, and social influence on individuals' intention to accept and use COVID-19 digital tackling technologies (CDTT).

Performance Expectations (PE)-Supported

The SEM analysis determined that H1's relationship between PE and IOC was weakly supported (β = .114, t = 2.017, p = 0.044*). This finding agrees that when psychologists perceive or expect that using OC technology is beneficial to their work, it can increase their consulting efficiency. It also adds a channel for providing advice, which can be convenient, fast, and easy to use, saving time and money. This is consistent with studies by Barak et al. (2009) and Kaphzan et al. (2022) that performance expectancy is strongly correlated with behavioral intention to use telepsychiatry. This is supported by Zentner et al. (2022) that performance expectancy positively predicted concurrent intentions to use video telepsychology.

Effort Expectations (EE)-Not Supported

The SEM analysis indicated that H2, which examined the relationship between EE and IOC, did not demonstrate statistical significance and was therefore not supported. However, it is worth noting that EE, as defined in the UTAUT framework, is considered a determinant of intention to use new technology (Venkatesh et al., 2003). EE refers to the user's perception of the effort or level of difficulty (including mental, physical, and time-related aspects) associated with using a specific technology. Although H2 was not supported in this analysis, it is essential

to recognize the potential impact of effort expectations on users' acceptance and use of online counseling platforms. In particular, recent meta-analytic results reveal very weak effects of perceived ease of use on usage intentions (King & He, 2006).

Facilitating Conditions (FC)-Supported

The SEM analysis determined that H3's relationship between FC and IOC found weakly support (β = -.117, t = -2.084, p = 0.037*). Environmental factors that support technology's use (Facilitating Conditions) are the perception or expectation of psychologists that they will be comfortable with the use of technology. Related to online counseling, factors include ease of use promotion which includes access to a user's manual, demonstration videos, expert advice, and training in the technology's use, all of which are external factors that can facilitate or hinder the use of a particular technology or system.

Psychologists like Rad et al. (2014) found that environmental factors favoring use were one of the factors affecting the intention to use technology. Venkatesh et al. (2012) added a direct relationship between facilitating conditions and behavioral intention in the UTAUT2, primarily developed to address a consumer's technology adoption. Facilitating conditions can also proxy for actual behavioral control and influence behavior directly (Ajzen, 1991). This is supported by Kaphzan et al. (2022) the facilitating conditions that that influence the utilization of telepsychiatry when it is first implemented and come to the conclusion that it is essential to foster a sense of success in the early going.

UTAUT FC, as it relates to OC, includes access to technology, technical support, privacy, and security measures, institutional or organizational support (Akinnuwesi et al., 2022). Akinnuwesi et al. (2022) have added that PE, FC, and SI are the best predictors of patients' behavioral intention to accept COVID-19 digital tackling technologies. Also, organizational influence and benefits and government expectancy and benefits affect patient behavioral intention.

Social Influence (SI)-Supported

The SEM analysis determined that H_4's relationship between SI and IOC found moderate support (β = .413, t = 9.953, p = 0.001**). SI plays a role in influencing psychologists' behavioral intentions to use technology for online counseling (OC). SI also refers to how psychologists perceive the influence of individuals or groups vital to them, such as professional organizations, supervisors, family members, and colleagues, on their thoughts, beliefs, or feelings about using information technology for OC. Psychologists may consider accepting and using technology for OC as client-centered, considering the potential risks it may pose to clients during treatment (Daengneam et al., 2023). Also, the research conducted by Guo et al. (2015) suggests that society significantly impacts technology adoption.

Perceived Risk (PR)-Not Supported

Based on the analysis using SEM, it was found that H5, which examined the relationship between PR and IOC, did not demonstrate statistical significance and thus was not supported. Psychologists who opted not to utilize telepsychology expressed concerns about potential reductions in treatment effectiveness and increased risks to their clients. These concerns encompassed several aspects, including inadequate training in telepsychology, ensuring client safety and support for remote clients in crises, maintaining client privacy, ethical considerations associated with telepsychology, and uncertainties regarding the effectiveness of non-face-to-face treatment.

In line with the findings of Pierce et al. (2020), perceptions of others' attitudes towards telepsychology were linked with the perceived ease of use and usefulness of telepsychology. These findings align with the research conducted by Kaphzan et al. (2022), where perceived

risk negatively correlated with behavioral intention, and no significant correlation was found between perceived risk and telepsychiatry. However, Egea and González (2011) found that PR plays a critical role in the intention to use health information technology.

Attitude Towards Online Counseling (ATOC)-Supported

The SEM analysis determined that H6's relationship between ATOC and IOC found moderate support ATOC (β = .398, t = 7.093, p = 0.001**). This was also true for H7's relationship between ATOC and UOC (β = -.215, t = -3.776, p = 0.001**).

Furthermore, attitude towards online counseling was identified as an additional factor influencing psychologists' behavioral intentions to use technology for OC. Psychologists' perceptions or expectations of the benefits of using OC technology, such as increased efficiency, additional channels for providing advice, convenience, speed, ease of use, and time and cost savings, were consistent with the concept of performance expectancy (Kaphzan et al., 2022). However, it was also noted that while psychologists recognize the benefits of telecounseling, they may face challenges adapting to unfamiliar platforms and investing time in learning new technology (Pimdee et al., 2023).

Attitude towards online counseling factors negatively correlated with psychologists' usage of technology for online counseling (UOC). Previous studies have shown that therapists generally hold a positive attitude toward online counseling (Békés et al., 2021). However, psychologists' express concerns regarding various issues associated with OC, including anxiety related to risk and challenges in conveying empathy within the online therapeutic relationship due to technological barriers (Seet et al., 2020). These concerns include regulatory licensing regulations, patient confidentiality risks, reimbursement concerns, patient safety, and interoperability (Hubley et al., 2016). Despite therapists' positive attitudes towards OC, their actual engagement in OC remains relatively low. Many counselors need more knowledge about online counseling and integrating online counseling courses into counselor education (Bastemur & Bastemur, 2015). Healthcare professionals may be more likely to employ telepsychiatry when the opportunity to study and practice it is presented (Kaphzan et al., 2022).

Furthermore, IOC provides a mediating variable between ATOC and UOC, indicating that psychologists who want to use OC and have a positive attitude are more likely to also use OC. Thus, in order to encourage the use of OC, pertinent organizations need to foster a positive perception of psychologists. Psychologists consider the OC as contributing to the promotion of services that are generally advantageous by developing an effective system. Psychologists offer training or step-by-step instructions to help them become more confident when utilizing the OC. Establishing the precedent that using online counseling services in addition to or instead of in-person counseling sessions is commonplace. For the reasons listed above, internet therapy will likely be used more frequently by psychologists in the future when it integrates with their own ordinary services. For psychologists who are now using or want to employ online counseling interventions, the findings may help influence the establishment of training, raising awareness, and skill-enhanced interventions (Smith & Gillon, 2021).

Intention to use Online Counseling Services (IOC)-Supported

The SEM analysis determined that H8's relationship between IOC and UOC found strong support (β = .511, t = 9.643, p = 0.001**). In the proposed revised version of the UTAUT framework, the construct of IOC is perceived as an essential factor in understanding individuals' readiness and intention to adopt and utilize online counseling. It reflects individuals' subjective probability and willingness to engage in the specific behavior of using online counseling services. The usage intentions mediate the effects of other potential antecedents of usage behavior (Venkatesh et al., 2003).

Possible aspects to include under IOC in a revised UTAUT framework are perceived usefulness, perceived ease of use, personal attitudes, subjective norms, OC self-efficacy, and trust and confidentiality. Addressing these factors can help promote acceptance, adoption, and engagement with online counseling, ultimately enhancing individuals' access to mental health support.

Usage of Online Counseling (UOC)

According to Kolog et al. (2015), counseling implementation in schools in Ghana somewhat depends on students' behavioral intention toward using counseling technologies. Using the UTAUT model and MLR, the authors analyzed the responses from 250 students, from which they determined that PE and SI were the strongest influencing factors on UOC and their behavioral intention to adopt and use e-counseling. Surprisingly, FC and EE had no significant effect on UOC in Ghana.

In another study that used mobile phones to deliver insomnia therapy, the authors investigated which factors played a role in UOC (Fitrianie et al., 2021). They also added that mobile apps are powerful tools in providing individualized support for patient cognitive behavioral therapy (CBT) and facilitating therapy adherence. In a similar study, the authors used the extended version of the UTAUT2 model to explain the variation between patients' UOC for insomnia app use and their use behavior. The results found that PE, EE, SI, self-efficacy, trust, and FC explained part of the variation in UOC.

Implications

The study's implications for research underscore the need for methodological diversification, encouraging the exploration of observational measures and cross-cultural investigations to enhance the generalizability of findings. Longitudinal studies and investigations into moderating factors, such as technological proficiency, offer avenues for a better understanding of psychologists' evolving perceptions of online counseling adoption. Moreover, delving into contextual and organizational influences can uncover systemic considerations impacting technology integration.

In the realm of practice, the study suggests tailored professional development programs to address identified needs, fostering positive attitudes towards technology. Acknowledging the impact of cultural factors, mental health organizations can prioritize diversity and inclusion, ensuring technology-related support is culturally sensitive. Organizational support, collaboration within professional networks, and clear ethical guidelines are pivotal for creating an environment conducive to technology adoption. These practical considerations emphasize the role of mental health organizations in facilitating a seamless and ethical integration of technology into psychological practices, ensuring responsible and effective use.

Limitations and Suggestions for Furhter Research

The research study, while providing valuable insights into the factors influencing psychologists' perceptions and intentions regarding the adoption of online counseling services and technology, is not without its limitations. Firstly, the study relies on self-reported data from psychologists, which introduces the potential for response bias and social desirability bias. Participants may provide responses that align with perceived societal expectations rather than reflecting their genuine attitudes and intentions. Future research could benefit from a more diverse set of data collection methods, such as observational measures or interviews, to complement self-reported data and enhance the validity of the findings.

Secondly, the generalizability of the study's findings may be limited due to the specific demographic characteristics of the sample. The study focused on psychologists, potentially overlooking variations in perceptions and intentions among professionals from other mental

health disciplines. Additionally, the study predominantly included participants from specific geographic regions or cultural backgrounds, limiting the generalizability of findings to a broader and more diverse population of psychologists.

CONCLUSIONS

In conclusion, this study delved into the factors shaping psychologists' and mental health care counselors' perceptions and intentions regarding online counseling adoption. The analysis involving 406 professionals revealed noteworthy insights into the dynamics of performance expectations, facilitating conditions, social influence, and attitudes toward online counseling. The empirical evidence, established through the application of the Structural Equation Model analysis, affirmed the support for ten out of the fourteen hypothesized relationships. Moreover, IOC were determined to mediate the relationship between PE, FC, SI, ATOC and UOC.

As the field of online counseling continues to evolve, this study serves as a valuable resource for practitioners, researchers, and mental health organizations. The identified factors and their interrelationships underscore the need for tailored strategies, both in terms of professional development and organizational support, to facilitate a seamless and effective integration of technology into psychological practices. By highlighting the benefits of the service, facilitating the establishment of more effective organizations or authorities that support favorable attitudes toward the use of online counseling by psychologists, and encouraging greater acceptance and usage of online counseling in the future, the findings may provide valuable insights on how to improve the adoption of online counseling among psychologists.

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AUTHOR CONTRIBUTION STATEMENT

PY led the research from the early stage to the end of the research and was responsible for designing and writing the overall manuscript. PS, PY, and PN focused on the development of thoughts, research objectives, literature review, data collection, data management, data analysis, data results, findings, and review of the final manuscript.

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