

Exploring individual differences in online and face-to-face help-seeking intentions in case of impending mental health problems: The role of adult attachment, perceived social support, psychological distress and self-stigma

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Abstract

Background: Even though common mental health problems such as depression are a global burden calling for efficient prevention strategies, still many distressed individuals face hurdles to access public mental healthcare. Thus, computerized Internet-based psychological services have been suggested as viable approach to overcome barriers, such as self-stigma, and to inform the access to professional support on a large scale. However, little research has targeted predictors of online and face-to-face help-seeking intentions.

Objective: This study aimed at determining whether associations between attachment insecurity and the willingness to seek online versus face-to-face counselling in case of impending emotional problems are mediated by both perceived social support and psychological distress and moderated by self-stigma.

Methods: Data was collected from 301 adults from the German-speaking general population (age: $M = 34.42$, $SD = 11.23$; range: 18 - 65 years; 72.1% female) through an anonymous online survey. Determinants of seeking help were assessed with the self-report measures Experiences in Close Relationship-Scale, Perceived Stress Questionnaire, ENRICH-Social Support Inventory and an adapted version of the General Help Seeking Questionnaire (i.e. case vignette). Mediation analyses were performed with the SPSS-macro PROCESS by Hayes.

Results: About half of the sample indicated being not aware of online counselling. As expected, insecure attachment was associated with less perceived social support and increased psychological distress. Mediation analyses revealed negative relationships between both attachment avoidance and self-stigma with face-to-face help-seeking intentions. Moreover, the relationship between attachment anxiety and the willingness to seek face-to-face counselling was mediated by social support. In contrast, none of the predictors of online counselling was statistically significant.

Conclusions: Overall, this study identified negative associations between both attachment avoidance and self-stigma with face-to-face help-seeking intentions, whereas determinants of seeking online counselling remained largely unclear. Further research is required to identify the role of e-awareness and e-mental health literacy in terms of online counselling uptake.

KEY WORDS: mental health; health care seeking behavior; community mental health services; telemedicine.

Riassunto

Introduzione: Anche se i disturbi mentali comuni come la depressione hanno un carico globale che richiede efficaci strategie di prevenzione, molti individui affetti da distress psicologico affrontano ancora ostacoli nell'accedere ai servizi pubblici di assistenza psichiatrica. Così i servizi psicologici basati sull'uso di Internet sono stati proposti come una strada percorribile per superare le barriere come l'autostigma e per dare informazioni riguardanti l'accesso al counselling professionale su larga scala. Tuttavia, è stata effettuata poca ricerca sui predittori della ricerca di aiuto "on line" e "faccia a faccia".

Obiettivo: Questo studio ha l'obiettivo di stabilire se l'associazione tra l'attaccamento "insicuro" e l'inclinazione a cercare un consulto psicologico "online" rispetto a quello "faccia a faccia" in caso di soggetti affetti da disturbi emotivi, sia mediata dal supporto sociale percepito e dal distress psicologico e sia moderato dall'autostigma.

Metodi: I dati furono raccolti da 301 individui adulti provenienti dalla popolazione generale di lingua tedesca (età: $M = 34.42$, $SD = 11.23$; range: 18 - 65 anni; 72.1% di sesso femminile) attraverso un questionario anonimo somministrato online. I determinanti della ricerca di aiuto psicologico sono stati valutati con misure auto riportate attraverso i seguenti questionari: "Experiences in Close Relationship-Scale", "Perceived Stress Questionnaire", "ENRICH-D-Social Support Inventory" ed una versione adattata del "General Help Seeking Questionnaire- Vignette version". Le analisi statistiche del modello di mediazione sono state effettuate con il "Process Macro" di Hayes per SPSS.

Risultati: Circa metà del campione ha riferito di non conoscere il counseling on line. Come atteso, l'attaccamento "insicuro" era associato ad un minore supporto sociale percepito ed un aumentato distress psicologico. Le analisi di mediazione hanno rivelato una relazione negativa tra l'intenzione di cercare aiuto "faccia a faccia" e lo stile di attaccamento "evitante" così come con l'autostigma. Inoltre, la relazione tra lo stile di attaccamento "ansioso" e la disponibilità a cercare il counselling "faccia a faccia" era mediato dal supporto sociale. In contrasto, nessuno dei predittori di counselling online è risultato statisticamente significativo.

Conclusioni: Nel complesso questo studio ha identificato delle associazioni significative tra l'intenzione di cercare aiuto "faccia a faccia" e lo stile di attaccamento "evitante" così come con l'autostigma, laddove i determinanti sulla ricerca del counselling psicologico on line sono rimasti per la maggior parte poco chiari. Ulteriore ricerca è necessaria per identificare il ruolo della conoscenza di internet e della letteratura sulla salute psicologica in internet in termini di utilizzo del counselling online.

TAKE-HOME MESSAGE

Study findings confirmed both attachment avoidance and self-stigma as psychological barriers to seek face-to-face counselling in case of impending emotional problems. To provide clear evidence for determinants underlying online and face-to-face help-seeking intentions, though, further research scoping on the role of individual and public preferences towards self-help services is required.

Competing interests - none declared.

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INTRODUCTION

Considering the rising lifetime prevalence of mental health disorders, amounting up to one-third of populations worldwide [1], common health problems such as depression require efficient large-scale prevention strategies [2]. However, many individuals with emotional problems fail to receive professional help in traditional face-to-face mental healthcare settings [3–5]. Reasons for the discrepancy between the demand and utilization of mental health services are complex and associated with both obstacles on the side of healthcare and individuals; though, this paper will focus on psychological aspects to understand individual facilitators and barriers of seeking help in case of emotional problems. For instance, psychological factors such as attitudes, outcome expectancies [6], self-stigma [7–10] and adult attachment style [11] have been investigated as determinants of (face-to-face) help-seeking intentions. Regarding obstacles linked to face-to-face contexts, such as stigmatization of mental illness, modern technologies could extend seeking help options.

Given the public acceptance of the Internet as everyday information source for mental health purposes, Internet-based computerized, respectively electronic mental health (e-mental health) services have been proposed as accessible and effective self-help options to overcome barriers to access mental healthcare [12–14]. E-mental health uses new media and modern technology to provide of digital psychological services in healthcare areas such as health promotion, prevention, counseling and therapy [12, 15]. With respect to the global burden of mental disorders [16] and treatment gaps in mental healthcare [17], the dissemination of e-mental health has been suggested as chance to improve the general access to healthcare [18]. While stages of implementation of web-based treatments (e.g. behavioral therapy) into primary care vary internationally, online counselling is publicly available in many countries, usually provided free of charge, without waiting time and anonymously accessible [19]. However, despite the steadily growing evidence base on

the effectiveness of e-mental health services for common mental health problems, little is known about factors influencing public preferences and the individual willingness to use online counselling in case of emotional distress [9, 20].

Within the face-to-face help-seeking contexts, personality facets such as attachment style have been identified as relevant predictors. Attachment theory [21–23] provides insights into role of key motivational mechanisms involved in socioemotional development and regulation of proximity in close relationships affecting interpersonal functioning, emotion regulation, stress coping and mental health over the life span [23, 24]. Starting at early infant-caregiver interactions, the scope of attachment theory has been extended to diverse interpersonal settings and attachment figures in adulthood, including help seeking and utilization of healthcare in times of distress [25, 26]. Accordingly, the attachment behavioral system is activated by psychological distress (i.e. significant others' function as 'safe haven'), while the exploration behavioral system enables learning processes when individuals feel safe and comfortable (i.e. significant others' function as 'secure base'). Over the life course, individuals are assumed to subsequently develop relative stable 'internal working models (IWMs)'. Defined as implicit cognitive schemata (attachment representations), IWMs include a 'model of the self' (e.g. self-efficacy) and a 'model of others' (e.g. perceived reliance of others), which build the basis for interpersonal expectations, attitudes and behavioral strategies (social information processing) [22, 27–31]. Overall, IWMs can vary from positive (i.e. resiliency of the self, relying in the responsiveness of others) to negative expectations (i.e. vulnerable or incompetent 'self-model', perceiving others as unreliable [32]). Since positive IWMs reflect attachment security, negative IWMs signify attachment insecurity, which can be described along a continuum of two dimensions: attachment anxiety (negative model of the self, positive model of others) and attachment avoidance (positive 'model of self' and

negative 'model of others') [33–35]. These dimensions have been applied to integrate both IWMs and attachment style taxonomy, which includes four attachment styles in adulthood, mostly termed as secure, dismissive-avoidant, anxious-preoccupied and fearful-avoidant [30, 31, 35]. In contrast to developmental and clinical psychology, research in the field of health and social psychology mostly measures adult attachment via self-report instruments scoping on close/romantic relationships [33]. On the one hand, securely attached individuals tend to feel comfortable with closeness and seeking support, are capable of acknowledging distress [33, 36] and more likely to develop self-esteem (positive 'model of the self') and interpersonal trust (positive 'model of others') [35]. On the other hand, research evidence suggests that attachment insecurity is linked to mental health risks due to '*increased susceptibility to stress, increased use of external regulators of affect, and altered help-seeking behavior*' ([32], p. 556). Typically, attachment anxiety is reflected by hyper-activating strategies that include hypervigilance towards subjective threats for well-being and increased utilization of healthcare services [37, 38]. In contrast, avoidant individuals tend to express lower self-disclosure and discomfort with seeking help [36, 39]. While avoidant attachment has been confirmed as negative predictor of help-seeking behavior [40], attachment anxiety appears to result in an increased willingness to seek professional support in times of distress [37, 38]. Vogel and Wei [25] have confirmed the hypothesis that the relationship between attachment and help-seeking intentions was mediated by both psychological distress and perceived social support. As expected, both attachment avoidance and anxiety were associated with lower perceived social support and increased distress in a students' population. While attachment anxiety was linked with acknowledging distress and informed help-seeking intentions, attachment avoidance with denying distress and reluctance to seek help from counselling [25]. Compared to secure attachment, both higher attachment avoidance and/or anxiety

(i.e. insecure attachment) were found being associated with less perceived social support and increased psychological distress [25]. Considering that social support can act as a 'buffer' against negative health effects of stress [41], attachment style can predict variations in distress [25, 42] and the willingness to seek help [43].

However, currently it remains unclear whether predictors of help-seeking intentions regarding face-to-face counselling are transferable to online counselling, too. For example, self-stigma, which is given when an individual views oneself being fragile and inferior requiring psychological help [44–46], could be less influential psychological barrier on the Internet, since online help services can be accessed anonymously [9]. Accordingly, an Australian online survey using a community sample [9] revealed higher self-stigma among 'e-preferers' (persons with preference to online over face-to-face help services) in comparison to the majority of 'non e-preferers' (about three thirds of the sample). Hence, Klein and Cook [9] concluded that e-mental health has the potential to hamper negative effects of self-stigma among 'e-preferers'. Taken together, research evidence indicates a need for identifying predictors of seeking psychosocial counselling in order to derive strategies to inform help-seeking behavior in public mental health promotion.

Objective

The aim of the present pilot survey was to examine perceived social support and psychological distress as mediators and self-stigma as moderator in the relationship between attachment quality and both face-to-face and online help-seeking intentions (in terms of the likelihood of seeking counselling in case of mental health problems) among healthy adults.

Main Hypothesis (1): The relationship between attachment quality and help-seeking intentions are mediated by both perceived social support and psychological distress.

Consequently, we hypothesized mediating effects of perceived social support and psychological distress on the positive association between attachment anxiety and both online help-seeking intentions (Hypothesis 1a) and face-to-face help-seeking intentions (Hypothesis 1b). Additionally, we hypothesized mediating effects of perceived social support and psychological distress on the negative association between attachment avoidance and both online help-seeking intentions (Hypothesis 1c) and face-to-face help-seeking intentions (Hypothesis 1d).

Secondary Hypothesis (2): Self-stigma moderates the relationship between attachment quality and help-seeking intentions.

Accordingly, we assumed moderating effects of self-stigma on the positive relationship between attachment anxiety and face-to-face help-seeking intentions (Hypothesis 2a). Finally, we assumed moderating effects of self-stigma on the negative relationship between attachment avoidance and online help-seeking intentions (Hypothesis 2b).

METHODS

The present cross-sectional survey on help-seeking intentions in the general population employed a quasi-experimental study design. Data was based on self-report measures and collected through an open access online survey between May and June 2016 at the Department of Health Psychology at the University of Hagen ('FernUniversität in Hagen'), which is both the largest and only state-maintained distance teaching university in Germany.

Sample recruitment and data collection

Adults from the general population, including university students, were recruited through social media websites (e.g. Facebook, LinkedIn), Moodle 2.0 (virtual education platform), e-mail, flyer and personal networks (e.g. community, workplaces), using snowballing techniques. The exploratory research strategy for this pilot study involved nonprobability sampling recruiting persons from pu-

blic with access to the Internet. We did not employ strategies to select participants from the targeted population, such as randomization. The survey was anonymously available for respondents. The study advertisement included a link to access the online survey platform that included the study information. Inclusion criteria for participation were a) self-reported age of 18 years or older, b) provided informed consent and c) relatively good health state (subjective assessment). Persons were asked to participate in the survey only if there were no indications for acute or chronic mental health problems. However, we relied on self-reports of persons who accessed the online survey interface. Exclusion criteria contained: a) lacking informed consent statement; b) incomplete data or dropout; and c) implausible response patterns. Undergraduate psychology students enrolled at the University of Hagen could obtain 0.25 credits for participation via the 'virtual lab'. No financial compensation was offered. Ethical approval was not required for this survey. This survey was conducted in accordance to applicable German legal regulations (e.g. data security) and ethical principles of the Helsinki Declaration (64th WMA assembly, 2013, Fortaleza, Brazil), respectively the German Psychological Association.

Participants of the survey

The sample consisted of 301 respondents. The average age amounted to 34 years ($M = 34.42$, $SD = 11.23$; range: 18 to 65 years; 6% missing). Most respondents indicated female as gender (72.1%, $n = 217$), while 27.2% ($n = 82$) reported being male (missing: 0.7%, $n = 2$). In total, 43.5% of 301 participants indicated being a current or past psychology student. More than half of the respondents (54.5%) stated being married or living in a close relationship. Further 38.5% indicated being single or unmarried, 5.0% divorced/living separated and 0.7% widowed as marital status. Most participants (41.9%) reported an upper secondary educational level as highest attained qualification (e.g. advanced certificate of education, German 'Abitur'). In addi-

tion, another third of the sample (36.9%) reported higher/tertiary educational level (e.g. university degree, such as Bachelor or Master of Science); taken together, more than three-third of the respondents (78.8%) indicated an upper secondary or tertiary education. Moreover, additional 15.3% of the sample stated as accomplished vocational training (e.g. German dual education system). The proportion of lower than secondary education level amounted to overall 5.9% (e.g. intermediate school-leaving certificate).

Measures and procedure

Initially, participants received general information about the study and the informed consent statement. Subsequently, respondents were asked to complete different self-report measures. The overall completion time of the survey amounted to 15 minutes (\pm 5 minutes) in average. This online survey was performed using Unipark software (Questback, Cologne, Germany).

Descriptive data

Participants were asked to answer socio-demographic questions (i.e. age, gender, relationship/marital status, education and employment). Next, respondents were asked to indicate previous experience with online counselling, face-to-face counseling and with traditional face-to-face psychotherapy (response options: 'yes' or 'not'). We did not ask for experience with online therapies because they are not permitted in Germany [18, 19]. In addition, participants were asked to indicate if they were aware of the existence of both online counselling and Internet-based psychotherapy for mental health problems (i.e. 'e-awareness'; response options: 'yes', 'not' and 'not sure').

Experiences in Close Relationship Scale - Short Form (ECR-S)

We used a German translation of the 12-item measure ECR-S [47] to assess the attachment quality, reflected by the dimensions attachment anxiety and avoidance (six items per dimension). Higher levels of attachment

anxiety can be found in anxious-avoidant and anxious-fearful adults, whereas higher attachment avoidance can be observed in dismissive-avoidant adults. Securely attached persons tend to score lower on both attachment anxiety and avoidance [33-35]. Participants were asked to indicate how they usually feel in close relationships for each of the 12 statements on a 7-point Likert scale, ranging from 1 'strongly disagree' to 7 'strongly agree' (e.g. item 11: 'I usually discuss my problems and concerns with my partner'). Alpha reliability amounted to $\alpha = .63$ (attachment anxiety) and $\alpha = .74$ (attachment avoidance).

ENRICHD Social Support Inventory - Deutsch (ESSI-D)

The 5-item EESI-D [48] is a German ESSI-adaptation that was used to measure perceived social support across different situations on a 5-point Likert scale, ranging from 1 'none of the time' to 5 'all of the time' (e.g. item 2: 'Is there someone available to give you good advice about a problem?'). Alpha reliability amounted to $\alpha = .87$.

Perceived Stress Questionnaire (PSQ-20)

The 20-item German short-version of the PSQ [49] was used to assess the incidence of stressfully perceived events or situations within the past four weeks on a 4-step rating scale, ranging from 1 'almost never' to 4 'usually' (e.g. item 17: 'You feel mentally exhausted'). The PSQ-20 consists of four subscales (i.e. worries, joy, tension and demands) and an overall score, which was used for the mediation analyses. Alpha reliability amounted to $\alpha = .94$.

Self-Stigma of Seeking Help Scale (SSOSH)

A German translation of the 10-item measure SSOSH [50] was used to evaluate perceived self-stigma of help-seeking on a 5-step rating scale, ranging from 1 'strongly disagree' to 5 'strongly agree' (e.g. item 6: 'It would make me feel inferior to ask a therapist for help'). Alpha reliability amounted to $\alpha = .84$.

Case Vignette (Help-Seeking Intentions)

Based on the General Help-Seeking Questionnaire – Vignette Version (GHSQ-V) [51], a case vignette was developed to determine the willingness to future use both online and face-to-face counselling in case of mental health problems. To ensure comparability of results, a common (not requiring treatment) mental health problem was described. For this purpose, participants received a brief description of common unspecific complaints of depressive mood, such as loss of energy and drive, poor sleep quality, poor attention/concentration and appetite. By these means, it was intended that healthy participants can better empathize a fictional situation for help-seeking in the absence of suffering from mental health problems. However, the adaption was not applied to screen for mental illness, but for the identification of counselling provision mode preferences. To determine help-seeking intentions, participants were provided with brief information about two fictional counselling services delivered online or face-to-face. To ensure the comparability of basic service features in terms decision-making conditions both services were described as free of charge, accessible without appointment, providing material about mental health problems and, if desired, offering contact information about psychotherapeutic service providers, such as regionally located qualified psychologists. Participants were asked to indicate, how likely it is that would seek help from (1) tailored chat-based online counselling and (2) face-to-face counselling at a public socio-psychiatric setting on a 7-point rating scale, ranging from 1 ‘extremely unlikely’ to 7 ‘extremely likely’.

Statistical analyses

Statistical analyses were performed using SPSS, version 23 (IBM, Illinois, USA). Due to the questionable multivariate normal distribution of the investigated variables, we preferred non-parametric tests if applicable. Bivariate associations were analyzed using Spearman’s rank correlation (r_s), whereas both mediation and moderation effects were

analyzed using multiple regression analyses. The PROCESS macro for SPSS by Hayes [52] was used to determine direct, indirect, and conditional effects within the multiple mediation model. Statistical significance of estimated, respectively indirect effects was determined using the bootstrapping technique ($n = 5\,000$ samples). Effects were interpreted as significant if the 95 % confidence intervals (95 % CI) did not contain the number zero. The significance level for all statistical tests was $\alpha = .05$. Classification of effect sizes referred to Cohen’s criteria [53].

RESULTS

Descriptive analyses

Mental health service usage and awareness

Nearly half (46.5%) of the 301 participants reported previous experience with face-to-face counselling, while more than one-fourth (26.9%) indicated having attended psychotherapy. Moreover, about half of the respondents (48.2%) indicated being aware of the existence of online counselling (not aware: 37.9%; not sure: 12.6%), whereas one-fourth (25.2%) reported being aware of the existence of online therapy, respectively Internet-based psychotherapy (not aware: 62.8%; not sure: 10.6%).

Preliminary and correlation analyses

As PROCESS uses ordinary least squares (OLS) regression to estimate effects, we checked if data complied with requirements of OLS prior to mediation analyses. Since the precondition of homoscedasticity was likely violated for each of the investigated variables, we applied a specific PROCESS command calculating heteroscedasticity-robust standard errors (SE). Means (M), standard deviations (SD) and results of Spearman rank correlations are presented in Table 1.

Table 1. Means, Standard Deviations and Spearman's Rank Correlation Coefficients.

Variables	M	SD	1	2	3	4	5	6	7
1. Attachment anxiety	3.49	0.96		.14*	-.24**	.34**	.15**	.08	-.08
2. Attachment avoidance	2.53	1.00			-.48**	.23**	.15**	-.08	-.21**
3. Perceived social support	20.91	3.59				-.27**	-.25**	-.01	.20**
4. Psychological distress	41.01	19.91					.15**	-.02	-.13*
5. Self-stigma	22.40	7.03						.05	-.38**
6. Online help-seeking intentions	3.95	1.85							.02
7. Face-to-face help-seeking intentions	4.36	1.77							

Note. $N = 301$. * $p < .05$ ** $p < .01$

Data analyses showed that respondents indicated being more likely to attend face-to-face counselling ($M = 4.36$; $SD = 0.77$) than online counselling ($M = 3.95$; $SD = 1.85$) in case of future depressive mood. In addition, bivariate correlation analyses revealed significant negative associations between age and online help-seeking intentions ($r_s [301] = -.13$, $P < .05$), while the correlation between age and face-to-face help-seeking intentions was found being insignificant ($r_s [301] = -.014$, $P = .80$, NS). Correlation analyses further indicated a significant negative relationship between attachment avoidance and face-to-face help-seeking intentions ($r_s [301] = -.21$, $P < .01$), signifying that persons reporting avoidant attachment patterns tended to be less willing to seek face-to-face counselling for mental health problems. Though, it should be noted that these correlations had small effect sizes [53].

Multiple mediation analysis

Main Hypothesis (1): The relationship between attachment quality and help-seeking intentions are mediated by both perceived social support and psychological distress.

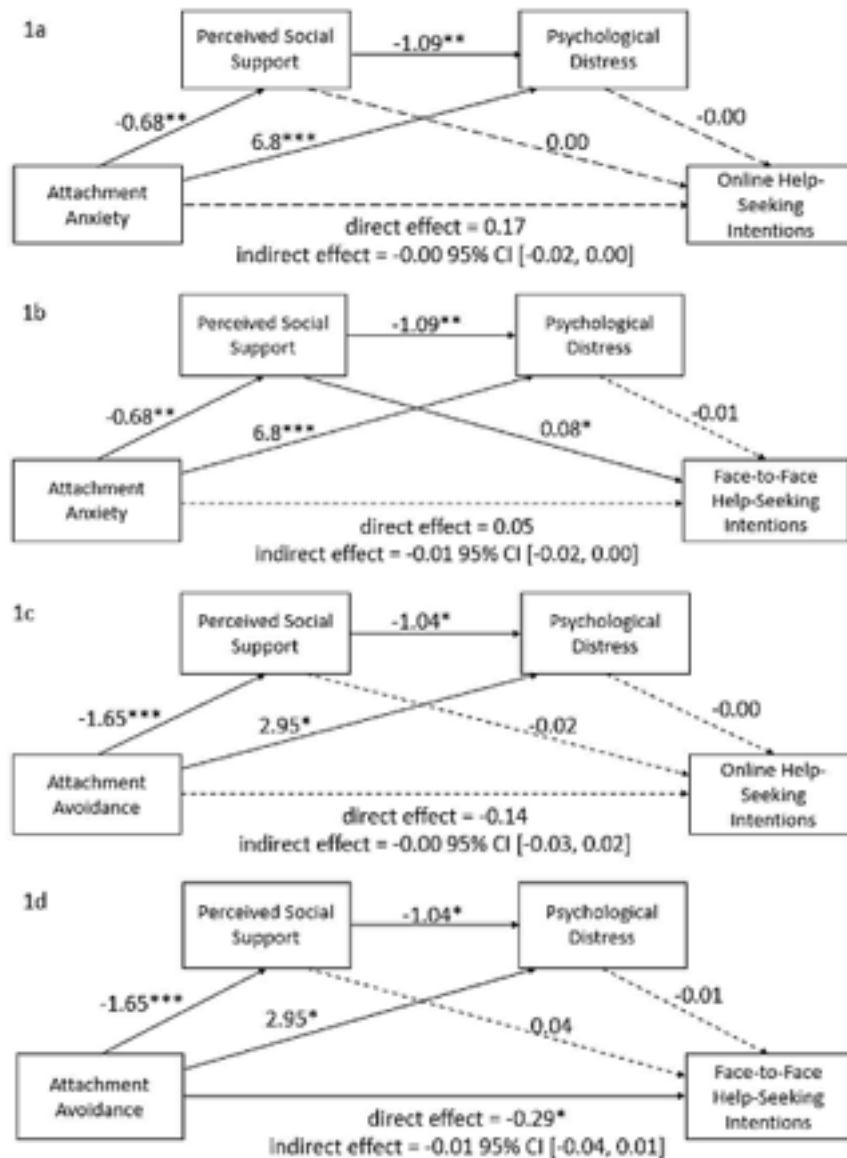
Hypothesis 1a (attachment anxiety \rightarrow online counselling): As illustrated in Figure 1a, no significant positive association between attachment anxiety and online help-seeking intentions, mediated by perceived social support and psychological distress, has been identified. This result suggested no indirect

effect as hypnotized about intentions to use online counselling. However, higher attachment anxiety was found being associated with lower perceived social support and higher psychological distress.

Hypothesis 1b (attachment anxiety \rightarrow face-to-face counselling): The assumed positive direct effect of attachment anxiety on face-to-face help-seeking intentions was not significant (Fig. 1b). Contrariwise, attachment anxiety was not positively, but negatively associated with help-seeking intentions: bootstrapping analyses revealed a negative indirect effect of attachment anxiety on face-to-face help-seeking intentions that was mediated by perceived social support, which in turn was linked to increased psychological distress, $b = -.08$ (95% CI -0.12 to -0.01).

Hypothesis 1c (attachment avoidance \rightarrow online counselling): As presented in Figure 1c, mediation analyses revealed that attachment avoidance was associated with both mediators, but not with online help-seeking intentions. In detail, results showed that the assumed negative direct connection between attachment avoidance and online help-seeking intentions was not significant. In addition, there was neither an indirect positive relationship between attachment avoidance and online help-seeking intentions nor were the assumed mediating effects of perceived social support and psychological distress significant. **Hypothesis 1d** (attachment avoidance \rightarrow fa-

Figure 1. Multiple Mediation Analyses: The relationship between attachment anxiety and online help-seeking intentions (Figure 1a), the relationship between attachment anxiety and face-to-face help-seeking intentions (Figure 1b), the relationship between attachment avoidance and online help-seeking intentions (Figure 1c), and the relationship between attachment avoidance and face-to-face help-seeking intentions (Figure 1d), all mediated by perceived social support and psychological distress. N = 301 respondents; *P < .05, **P < .01, ***P < .001. Unstandardized coefficients are reported. Dotted lines indicate non-significant coefficients, P > .05.



ce-to-face counselling): As presented in Figure 1d, mediation analyses indicated that the assumed relationship between attachment avoidance and face-to-face help-seeking intentions was not mediated by perceived social support or psychological distress. However, a significant negative direct effect of attachment avoidance on face-to-face help-seeking intentions suggested that avoidant individuals tended to feel unlikely to seek face-to-face counselling in case of mental health pro-

blems, $b = -.29$, $t(297) = -2.61$, $P = .01$ (95% CI -0.51 to -0.07).

Concerning the main hypotheses, it can be concluded that none of the assumed direct or indirect effects as proposed by hypotheses 1a, 1b and 1c yielded to significant results, whereas hypotheses 1d suggested a significant direct link between attachment avoidance and face-to-face help-seeking intentions for face-to-face counselling.

Moderation analyses

Secondary Hypothesis (2): Self-stigma moderates the relationship between attachment quality and help-seeking intentions.

Hypothesis 2a: As presented in Table 2, there was a significant main effect of self-stigma on face-to-face help-seeking, $b = -.10$, $t(297) = -6.94$, $P < .001$. This finding indicated that individuals scoring higher on self-stigma reported a lower readiness to seek face-to-face counselling. Additionally, regression analy-

ses showed that the predictors (attachment anxiety, self-stigma and the interaction of both) explained 15 percent of variance in face-to-face help-seeking intentions, $R^2 = .15$, $F(3, 297) = 17.59$, $P < .001$. Though, there was no significant direct effect of attachment anxiety on face-to-face help-seeking intentions, nor was the proposed interaction with self-stigma significant.

Table 2. Linear models of predictors of face-to-face and online help-seeking intentions.

Variables	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Linear Model 1: Predictors of face-to-face help-seeking intentions				
Constant	4.34 [4.15, 4.53]	0.10	45.31	$p < .001$
Self-stigma (centered)	-.10 [-.012, -.07]	0.01	-6.94	$p < .001$
Attachment anxiety (centered)	-.03 [-.019, 0.25]	0.11	.25	$p = .80$
Self-stigma x attachment anxiety	0.02 [-0.02, 0.05]	0.02	.88	$p = .38$
Linear Model 2: Predictors of online help-seeking intentions				
Constant	3.96 [3.75, 4.18]	0.11	36.25	$p < .001$
Self-stigma (centered)	0.02 [-0.02, 0.05]	0.02	1.01	$p = .31$
Attachment avoidance (centered)	-0.12 [-0.35, 0.11]	0.12	-1.02	$p = .31$
Self-stigma x attachment avoidance	-0.01 [-0.04, 0.02]	0.02	-0.80	$p = .42$

Note. $N = 301$. Unstandardized coefficients are reported. Model 1: $R^2 = .15$, $F(3, 297) = 17.70$, $p < .001$. Model 2: $R^2 = .01$, $F(3, 297) = 0.77$, $p = .51$.

Hypothesis 2b: As presented in Table 2, the assumed moderating effects of self-stigma on the negative relationship between attachment avoidance and online help-seeking intentions were not significant. Neither the overall model, nor main effects nor the proposed interaction effects yielded to significant results. Overall, one percent of variance in online help-seeking intentions was explained via this model, $R^2 = .01$, $F(3, 297) = 0.77$, $P = .51$, NS. To conclude, relationships between attachment anxiety and face-to-face help-seeking intents and attachment avoidance and online help-seeking intents were not moderated by self-stigma.

Additional post-hoc mediation analyses

Based on the insignificant moderation effects of self-stigma, we conducted additional mediation analyses with self-stigma as potential mediator. Mediation analyses demonstrated that self-stigma indeed mediated the relationship between insecure attachment and face-to-face help-seeking intentions; attachment anxiety: $b = -.09$ (95 % CI -0.19 to -0.01); attachment avoidance: $b = -.11$ (95 % CI -0.22 to -0.03). However, only the direct effect of attachment avoidance on face-to-face help-seeking intents was significant, $b = -.28$, $t(297) = -2.98$, $P < .001$. In contrast, no significant effects of the predictor attachment

style or the mediator self-stigma on online help-seeking intentions have been identified. To conclude, individuals who scored higher on self-stigma reported being less likely to use face-to-face counselling in case of depressive mood, whereas self-stigma has not affected the (hypothetical) willingness to use online counselling in this sample.

DISCUSSION

The purpose of the present online survey was to examine perceived social support and psychological distress as mediators and self-stigma as moderator in the relationship between attachment quality and both face-to-face and online help-seeking intentions among adults.

Summary of key findings

In summary, study findings indicated that insecure attachment was significantly associated with lower perceived social support and both higher psychological distress and self-stigma of seeking help.

Willingness to seek face-to-face counselling

Corresponding to earlier research [25, 42], our study findings suggested a link between attachment insecurity and psychosocial barriers that can inhibit the willingness to seek counselling in case of future mental health problems. Also consistent with previous research [11, 25], the present survey confirmed the assumed association between higher attachment avoidance and lower intentions to seek face-to-face counselling. Recalling the theoretical framework on adult attachment, this finding can be embedded in categorical concepts of (a) the avoidant-dismissive prototype [36] and (b) the fearful-avoidant (disorganized) prototype, which both are assumed to share the negative cognitive 'model of others' [39] and to be less willing to seek professional help in comparison to secure and anxious-preoccupied attachment styles [37, 38, 54]. In contrast to the mediation hypothesis, though, psychological distress was found being clearly related to the respondents' readiness to seek face-to-face counsel-

ling. As hypothesized, the significant indirect effect of attachment anxiety on face-to-face help-seeking intentions indicated that higher attachment anxiety was associated with less perceived social support. However, differing from studies in context face-to-face help seeking [11, 25], our results revealed attachment anxiety correlated with reduced (not increased) intentions to seek face-to-face counselling. Even so, it should be considered that this non-clinical pilot study focused on potential facilitators and barriers of help-seeking intentions in the absence of actual need. Potential reasons for the statistically insignificant role of psychological distress was not found in this survey, though, seem to be at least partly consistent with the research literature. For instance, two meta-analyses [8, 55] have also failed endorsing coherent, respectively significant correlations between levels of perceived stress and help-seeking outcomes among college students. Concerning that our publicly accessible online survey included a high percentage of college/university students, too, common features of sample and data collection should be considered as potential sources of bias in surveys. Furthermore, subjective appraisals about the ratio between benefits and risks of counselling may have affected by insecure attachment IWMs: For instance, Shaffer and colleagues [11] confirmed that higher attachment anxiety correlated with increased help-seeking intentions among undergraduates, in case of outweigh of perceived advantages. Equally, higher attachment avoidance was found being associated with less help-seeking intents and that this link was mediated by lower supposed benefits of counselling [11]. Furthermore, the supposed overall 'normal' mental health state in this sample indicated low actual requirements for professional help, which in turn may have predisposed attitudes towards counselling. Thus, the role of perceived cost-benefit ratio in seeking public health services requires further clarification.

Willingness to seek online counselling

Considering ongoing initiatives and public health campaigns supporting e-mental health dissemination [13], we expected significant associations between attachment quality and the readiness to seek online counselling as low-threshold service. Unexpectedly, we identified no substantial impact of attachment dimensions on the willingness to seek online counselling in case of future mental health issues. Accordingly, the assumed mediating effects of perceived social support and psychological distress on online help-seeking intentions were found being statistically insignificant. This unexpected finding could be resulted from the low public 'e-awareness' in Germany [14] and the moderate involvement with e-mental health in the present sample: about half of participants indicated being aware of the existence of online counselling, although the sample consisted of a high number of distance-learning students from an undergraduate psychology program. Likewise complying with earlier research [9, 13, 14], we identified a slightly higher willingness to future use face-to-face over online counselling. Unlike initially hypothesized, we have not identified moderating effects of self-stigma on the negative relationship between attachment avoidance and online help-seeking intentions. However, additional analyses confirmed self-stigma as mediator in the relationship between attachment and the willingness to seek face-to-face counseling. Hence, these findings confirmed self-stigma's function as barrier to access face-to-face counselling, but not online counselling. In contrast, an online survey [9] revealed that respondents scoring higher on self-stigma preferred using e-mental health over traditional face-to-face services. Opposing to the survey by Klein and Cook [9], we have found no association between self-stigma and online help-seeking intentions. However, we did not distinct 'e-preference' by grouping conditions. To better understand intentions to seek online counselling, investigating mediating effects of self-stigma, which were earlier confirmed in the connection between mental he-

alth literacy and informal help seeking [56], might be a promising next step for future studies. Other areas of interest include the question on how to improve effectiveness of online counselling, for instance, by reducing self-stigma of seeking help or mental illness [57, 58]. Still, an important obstacle remains: most studies tend to measure the construct 'self-stigma of mental disorders', which is a different construct than 'self-stigma of help seeking' used in this survey [59].

Considering the indefinite role of public 'e-acceptability', 'e-awareness' and 'e-attitudes' [13], future studies could apply the Unified Theory of Acceptance and Use of Technology (UTAUT) [60] to identify behavioral intentions to future use online counselling. For this purpose, the strongest UTAUT-predictor for usage intentions and use of modern technologies called 'performance expectancy' [60] could be further investigated as key determinant of e-mental health acceptance, e.g. with focus on perceived benefits of counselling [11]. Given the outlined uncertainty surrounding psychological predictors, facilitators and barriers to access e-mental health services, such as e-health literacy [56], both surveys on public views and randomized controlled trials (RCTs) on the impact of health information are required to derive definitive conclusions.

Implications for future research

Regarding the validity of the survey, it should be considered that this pilot study involved specific, respectively selective sample characteristics. Recruiting respondents mainly via online platforms and a virtual university setting could have affected survey outcomes. For instance, we found relatively low self-stigma of help seeking in comparison to more diverse samples [50]. However, this study focused on public attitudes towards counselling from the perspective of health psychology. That is why we did not ask for detailed information about present or past mental health issues. This may have hampered conclusions on the impact of stigma of seeking help in other contexts. Concerning the identification of differentiated demands in healthcare, fur-

ther research is required to close knowledge gaps regarding psychological determinants of online self-help activities. For this purpose, future studies could investigate both clinical variables (e.g. type of mental disorder and/or comorbid illness) [61] and service type-specific preferences based on sociodemographic variables (e.g. gender and age) [62] as moderators of the willingness to use online versus face-to-face counselling. In previous studies, the predictive value of adult attachment ('model of others') on the formation of help-seeking intentions have been identified for female, but not male participants [58]. Due to scope of the present study and the overrepresentation of female respondents in our sample (72%), we have not explored gender differences. Although a large Australian survey has confirmed a higher willingness among middle-aged females to participate in e-mental health interventions [57], our findings have not indicated a remarkable assembly of unbalanced gender ratio and increased readiness to seek counselling. Regarding age differences, our findings showed that younger age was associated with improved online help-seeking intentions, albeit with small effect size according to Cohen's criteria [53]. In the research literature, associations between age and help-seeking intentions in the public were found being inconsistent, depending on study design. While some non-randomized, respectively 'open access' online surveys [9, 13] have found no socio-demographic differences in public attitudes towards e-mental health, other (large-scale) surveys identified both positive [57] and negative correlations [14] between age and the willingness to use e-mental health services. Furthermore, both the overall rare experience with online counselling and moderate 'e-awareness' might have biased survey findings towards rather neutral, respectively heuristic assessments. Finally, the adaptation of the UTAUT-framework [63] to studies on the public e-mental health uptake could be a next step to inform methodology and comparability across different settings for technology acceptance studies.

Limitations

This pilot survey includes several limitations. As key methodological issue, it should be considered that help-seeking intentions were assessed via a case vignette [51]. Although the case vignette concerned preferred counselling services in case of depressive mood, respondents were asked to make their choice in the absence of mental illness (likelihood of future use). In addition, using brief descriptions of mild symptoms in subclinical depression could have limited the validity of the GHSQ measure or shifted respondents' attention from the focus on the two counselling services to unimportant aspects (e.g. thinking about symptoms). In addition, it can be argued that using 'distress' as problem (instead of depressive mood) would have been sufficient to help imagine a state requiring support, rather than providing a list of depressive symptoms in the absence of such an issue. Though the connection between distress and depressive symptoms has been confirmed in previous studies [64], it may have been not the best choice to combine these aspects in an 'open access' online survey. In addition, it can be assumed that the narrowed scope of the two fictional counselling scenarios has restricted external validity of the GHSQ case vignette. However, the decision to describe a specific problem aiming to inform comparability of ratings was based on pre-tests and previous research (e.g. [14]; case vignette for phobia). Furthermore, due to the health psychology scope of our study we did not assess depressive mood or used clinical measures and relied on self-reports. In addition, the overweight of secure attachment, leading to small variance could have reduced the precision of ECR-S [33, 34], respectively raised issues in terms of poor Cronbach's identified for the ECR-S [47]. Moreover, self-stigma was found being in average low in this sample, which could have hampered moderation effects. Additionally, results were likely affected by selection bias considering the online data collection, which is widely used in e-mental health research [65]. However, despite the high amount of psychology students/distance learning stu-

dents (43%) in this sample, online counseling was known to only half of study respondents (moderate 'e-awareness'). As another limitation, we did ask for Internet-related experience and usage behavior in order to determine differences in the awareness of online counselling, differentiated by age groups ('digital natives' versus 'digital immigrants'). Other studies on public intentions to use e-mental health indicated improved attitudes towards online counselling in younger adults [14]. Poor involvement with online self-help may have inclined preference ratings, since the UTAUT-framework [63, 66] proposed user experience and habits as well as facilitating factors as important predictors of intentions to use technology. Finally, this study used a quasi-experimental design to test hypotheses of multiple mediation models. Since this study design is unlike RCTs ineligible to examine causal relationships, terms like 'effect' were not meant literally.

Conclusions and outlook

Overall, both significant and insignificant results obtained in this pilot study can contribute to the empirical literature on associations between adult attachment, self-stigma and preferred mental health services with respect to help seeking. However, the unclear role of these predictors in the willingness to seek online counselling also raised vital questions. Taken together, there were two noteworthy findings. First, individuals with higher attachment avoidance indicated being unlikely to seek face-to-face counselling, but tended to express neutral views towards online counselling. Second, individuals scoring higher on self-stigma of seeking help also appeared to be unlikely to seek face-to-face counselling, which was not the case for online counselling. In other words, these results suggested that online and face-to-face help-seeking inten-

tions might be affected by different aspects, which can be an important suggestion considering the internationally low impact of the intended large-scale dissemination of e-mental health programs [12] aiming to improve the access to professional help for hard-to-reach populations and, by this means, overcoming persisting barriers to care. Concerning the mostly insignificant findings of mediation analyses, a possible explanation is the fact that about half of the sample indicated being unfamiliar with online counselling. To take advantage of the potentials of online counseling, future research should identify predictors of online help-seeking intentions and strengthen the public's e-awareness [20]. Over the past two decades, the evidence based on the effectiveness of e-mental health in the prevention [2] and treatment of mental health problems [67] has rapidly grown. Despite steady advances in e-mental health research, experience with and awareness of online self-help treatments is still trivial in most countries [13, 14, 68]. Furthermore, e-mental health is a relatively novel action field, and thus longitudinal research is needed to assess if the large-scale accessibility to mental healthcare services can be improved for diverse populations via the Internet [69]. In addition, there is a need for participatory person-based approaches using mixed methods in order to gain an in-depth understanding of users' needs [70]. Nonetheless, self-stigma can be a barrier for individuals with emotional problems to receive help [7, 9, 71-73]. Thus, identifying psychological barriers resulting in the avoidance of help seeking in terms of psychosocial counselling [74] and enhancing e-mental health literacy might be the first step to improve the uptake of innovative approaches in mental healthcare and help reducing social and self-stigma of mental illness [56].

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