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Nicholas R. Wiarda
George Fox University

Mark R. McMinn
George Fox University, mcmminn@georgefox.edu

Mary A. Peterson
George Fox University, mpeterso@georgefox.edu

Joel A. Gregor
George Fox University, jgregor@georgefox.edu

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BRIEF REPORT

Use of Technology for Note Taking and Therapeutic Alliance

Nicholas R. Wiarda, Mark R. McMinn, Mary A. Peterson, and Joel A. Gregor
George Fox University

Is psychotherapeutic alliance helped or harmed by using an iPad or computer during an intake session? Two studies are reported where psychotherapists use one of three different technologies in semistructured initial interviews: paper and pen, iPad, or a computer. The studies were conducted at a Primary Care Clinic and a Community Mental Health Clinic to provide a broader context to account for recent behavioral health integration into medical settings in addition to a traditional psychotherapy setting. The Primary Care Study consisted of 60 participants from a behavioral health service at a primary care clinic. The Community Mental Health Study involved 55 participants from a community mental health clinic in semirural Oregon. No differences were found for the three technologies in either study. Practice and training implications are offered.

Keywords: technology, alliance, psychotherapy relationship, iPad

Although mental health professionals have been speaking and writing about technology for many years, sometimes even referring to technological changes as a revolution (Hogan, 1983), it appears we are on the cusp of a new revolution (Peluso, 2012; Rosenberg, 2012) with the addition of tablet devices to the market (e.g., the Apple iPad). The ubiquity of tablet devices is affecting the practice of psychology (Eonta et al., 2011; Luxton, McCann, Bush, Mishkind, & Reger, 2011). Historically, professional psychologists have demonstrated some reticence to embrace emerging technologies in their work in part due to a commitment to evidence-based practice (McMinn, Barse, Heyne, Smithberger, & Erb, 2011). Not surprisingly, we have little scientific information about how the iPad can be used in patient care. Here we report two preliminary studies regarding how using an iPad in the initial interview affects the psychologist–patient working alliance.

The American Psychological Association (APA) has addressed technology and practice issues in an annual report by the Policy and Planning Board in 2009. The APA Policy and Planning Board aptly notes that, “technology changes everything” (p. 461) insofar as it influences our research, practice, and education, and yet at the same time, “technology changes nothing” (p. 461). That is, psychologists are still committed to principles of sound research and ethical practice even amid rapid technological changes (McMinn et al., 2011). One finding of research that has remained consistent throughout the literature is the relationship between therapeutic

alliance, the “the feelings and attitudes that therapist and client have toward one another, and the manner in which these are expressed” (Gelso & Carter, 1985, as cited in Norcross & Lambert, 2011, p. 5), and the effectiveness or outcome of psychotherapy. Since the 1970s, the psychotherapy outcome literature has demonstrated the efficacy of psychotherapy to bring psychological healing to people (Hubble, Duncan, Miller, & Wampold, 2010). In addition to robust evidence for overall effectiveness, various factors have been identified as contributing to psychotherapeutic outcomes, including therapeutic alliance.

Norcross and Wampold (2011) note that alliance is demonstrably effective in outcome research—a conclusion that is consistent with a number of meta-analytic studies (Horvath, Del Re, Fluckiger, & Symonds, 2011). Hilsenroth and Cromer (2007) provide a practice review on how therapist behavior affects the therapeutic alliance, specifically in the initial assessment. In their summary, they report a finding from Huber, Henrich, and Brandl (2005) indicating that patient ratings of pretreatment consultation/assessment correlated significant with the therapeutic alliance with their current therapist three months postassessment. The initial assessment appears to have a significant impact on alliance and therefore outcome. Additionally, increases in dropout rates are associated with a poor alliance (Sharf, Primavera, & Diener, 2010). This alliance appears to be related to many different behaviors (Hilsenroth & Cromer, 2007), but it is not clear how therapist use of technology in psychotherapy may affect the alliance. If psychologists are to introduce new technologies into their interventions, it will be important to determine their impact on alliance, as alliance is a robust indicator of treatment effectiveness.

General Method

Overview

The two studies reported here examined the impact of interviewer’s use of technology on the psychotherapeutic alliance in an

Nicholas R. Wiarda, Mark R. McMinn, Mary A. Peterson, and Joel A. Gregor, Graduate Department of Clinical Psychology, George Fox University.

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Correspondence concerning this article should be addressed to Nicholas R. Wiarda, George Fox University GDCP 414 North Meridian Street, #V104, Newberg, OR 97132. E-mail: nick.wiarda@gmail.com

integrated primary care clinic and a community mental health clinic. The primary care clinic used 20-min behavioral health consultations to rapidly identify and assist with specific behavioral and psychological components of the patient's general health care. The community mental health clinic used a traditional 50-min intake interview. The two settings were chosen to account for differences in practice and provide more relevant information than one setting would provide in isolation. Ten interviewers assisted with the study, five from each clinic. All interviewers were doctoral-level clinical psychology trainees from an APA-accredited doctoral training program under the supervision of a licensed psychologist.

Procedures

Patients at both clinics were assigned to one of the three note-taking conditions before the initial interview and any interviewer contact: pen and paper, the Apple iPad, and a computer. Interviewers used a stylus to write on the iPad using an app called UPAD (<http://www.pockeysoft.com/UPAD2/>). Interviewers were instructed to face the patient and be seated approximately 4 feet apart while in a calm, empathic way with each client. Further, they were instructed to maintain eye contact except when recording participant responses. In an effort to approximate random assignment while allowing interviewers to establish interviewing routines, note-taking methods rotated weekly until the sample size was filled. The first-week patients undergoing their initial interview were assigned to paper and pen, the second week to the iPad, the third to the computer, the fourth to paper and pen, the fifth to an iPad, and so on.

Alliance Measure

Alliance was measured at the end of each interview, using the Session Rating Scale (SRS; Duncan et al., 2003). Duncan et al. (2003) reported reliability and validity for the SRS to be comparable with the Helping Alliance Questionnaire II (HAQ-II; Luborsky et al., 1996), a 19-item measure, with internal consistency of $\alpha = .88$ (compared with HAQ-II, $\alpha = .90$), test-retest reliability of $r = .64$ (HAQ-II, $r = .63$), and concurrent validity with the HAQ-II of $r = .48$. The SRS is an ideal measure for primary care settings because of its brevity. Campbell and Hemsley (2009) tested the SRS in a rural primary care setting and found it to show strong internal consistency ($\alpha = .93$) and concurrent validity with the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) ($r = .63$), a 12-item measure. The SRS is often used to promote conversation with clients about the effectiveness of treatment (Sundet, 2012).

The SRS consists of four items measured on a continuum going from left to right. The four items are Relationship, Goals and Topics, Approach or Method, and Overall. When given the SRS, the patient is instructed to make a vertical hash mark with a writing utensil in each of the four items. The location of the hash mark is along the spectrum for each item, depending on how the patient perceives each item to be for that session. For example, if the patient felt that the psychotherapist's approach was exactly right, he or she would make a hash mark on the far right side for the item. Each item of the SRS is 10 cm in length. The item score is equivalent to the distance in centimeters (to the nearest millimeter) between the patient's hash mark and the left pole of the item. Once each item is scored, the four

scores are added together to calculate the total score (out of a possible 40). Scores below 36 are considered to be problematic for the alliance (Miller, Duncan, Sorrell, & Brown, 2005).

Primary Care Study

The Primary Care study took place at two primary care clinics in the Portland, Oregon area, where patients receive free behavioral health consultations. Each interview took place in an exam room using an iPad, pen and paper, or the exam room desktop computer. Interviews were conducted in the integrated primary care format, using a 20-min consultation. All three methods followed the same semistructured assessment in which the interviewer asked a series of questions related to referral problem, history of problem, and so on.

Participants

The participants of the primary care study were 60 patients ($n = 60$). Primary care clinic one had 12 participants in the paper and pen condition, 18 in the iPad condition, and 13 in the computer condition. Primary care clinic two had eight participants in the paper and pen condition, two in the iPad condition, and seven in the computer condition. Participant ages ranged from 21 to 88 ($M = 50.1$, $SD = 16.3$). Of the 95% of participants for whom ethnicity was recorded, all were of European American descent. Nearly two thirds of the sample (60.3%) was female. Diagnoses were made by interviewers in collaboration with their doctoral-level psychologist supervisor, and were based on information obtained from the medical record, the referring physician, and the initial interview. The most common Axis I diagnoses were mood- or anxiety-related disorders (26% each). Other diagnoses included adjustment disorders (19%), dementia (3%), mental disorder owing to a general medical condition (3%), substance abuse disorders (3%), somatoform and sleep disorders (2% each), and additional diagnostic codes such as V-codes (7%).

Findings

SRS scores ranged from 28.4 to 40.0, ($M = 37.0$, $SD = 3.0$). A one-way ANOVA was used to test for alliance differences among the three technologies used to record data during intake interviews. Alliance was strong in all three conditions, and ratings did not differ significantly across the conditions, $F(2, 57) = .36$, $p = .70$ (see Table 1). No significant age-SRS correlations were observed overall

Table 1
SRS Scores After Intake Interview

Condition	<i>n</i>	Mean	<i>SD</i>
Primary care clinic			
Pen and paper	20	36.9	3.0
iPad	20	37.4	3.1
Computer	20	37.0	3.1
Community mental health clinic			
Pen and paper	17	34.9	5.8
iPad	20	36.5	4.2
Computer	19	37.4	3.3

Note. SRS scores range from 0 to 40.

Table 2
SRS of Individual Interviewers

Clinician	<i>n</i>	Mean	<i>SD</i>
Primary care clinic			
1	38	37	2.9
2	8	37.1	2.4
3	5	37.3	2.8
4	4	37.1	4.8
5	5	35.9	4.7
Community mental health clinic			
1	8	33.8	7
2	14	37.5	2.2
3	21	37	4
4	10	34.3	5.2

($r = -.14$), for the pen and paper condition ($r = .02$) or the iPad condition ($r = -.09$). The correlation between age and SRS for those in the Computer condition was not significant, though it warrants further research ($r = -.37$, $p = .11$). Number of interviews and interviewer difference was tracked as well. Interviewer 1 completed 38 interviews, interviewer 2 completed 8, interviewer 3 conducted 5, interviewer 4 conducted 4, and interviewer 5 conducted 5. An ANOVA was run to compare alliance ratings across the five interviewers. Alliance ratings of each clinician did not reach significant difference, $F(4, 55) = 1.78$, $p = .949$ (See Table 2).

Community Mental Health Study

The Community Mental Health study took place at one low-cost clinic in the Portland, Oregon area. Each interview took place in the clinic using an iPad, pen and paper, or a laptop computer (as opposed to an exam room computer for Primary Care). Interviews were conducted using a traditional 50-min hour. All three methods followed a more in-depth semistructured assessment than the Primary Care study in which the interviewer asked a series of questions related to referral problem, history of problem, and so on.

Participants

The participants of this study were 55 clients ($n = 55$). Participant ages ranged from 18–67 ($M = 41.83$, $SD = 13.32$). Participants were 84.6% European American, 7.7% Hispanic, 5.8% Native American, and 1.7% other. Just over two thirds (70.4%) were female. Diagnoses were made by psychotherapists in consultation with their doctoral-level psychologist supervisor, and were based on information obtained during the intake interview as well as past medical records, when available. Diagnoses included depression (23.9%), anxiety disorders (17.4%), substance abuse disorders (8.7%), adjustment disorders (1.7%), schizophrenia (2.2%), V-codes often related to marriage and family issues (26.1%), and deferred diagnoses (19.6%).

Findings

SRS scores ranged from 18.8 to 40.0 ($M = 36.31$, $SD = 4.54$). A one-way ANOVA was used to test for alliance differences among the three technologies used to record data during intake interviews. The alliance ratings were strong across all three conditions and did not differ significantly, $F(2, 53) = 1.472$, $p = .239$

(see Table 1). No significant age–SRS correlations were observed overall ($r = .03$), for the pen and paper condition ($r = .03$), the iPad condition ($r = .17$), or the laptop condition ($r = -.12$). Number of interviews and interviewer difference was tracked as well. Interviewer 1 completed 8 interviews, interviewer 2 completed 14, interviewer 3 conducted 21, interviewer 4 conducted 2, and interviewer 5 conducted 10. Data for interviewer 4 were not included owing to the extremely low sample size. An ANOVA was run to compare alliance ratings across the four interviewers. Alliance ratings of each clinician did not reach significant difference, $F(3, 49) = 1.975$, $p = .13$ (See Table 2).

Site Comparison

An ANOVA was used to compare alliance scores between the three different sites (two primary care, one community mental health clinic). Differences between all three sites were not significant, $F(2, 115) = .761$, $p = .469$ (See Table 3). Combined primary care scores were compared with community mental health scores. Differences between the two types of sites were not significant, $F(1, 114) = .850$, $p = .358$ (See Table 3).

Discussion

No known studies in the psychology literature report the effects of technology on therapeutic alliance in a person-to-person intake interview. Though a null hypothesis can never be proven—only disproven—it is noteworthy that even an exceptionally liberal alpha of .20 would still have failed to produce any differences between the three conditions. Similar results were observed in 20-min behavioral health consultation intake session at the integrated primary care setting and a 50-min intake session at the community mental health clinic. Pending further research, it can be reasonably assumed that psychotherapists can experience freedom to choose to use technology in intake sessions as an aid to their services without it harming psychotherapeutic alliance.

Much remains unknown about how technology might be used in the context of face-to-face meetings with patients. Future research may focus on broader clinical applications and ethical implications of technologies in psychotherapy. There are numerous ethical implications to technology use (Dever Fitzgerald, Hunter, Hadjstayropoulos, & Koocher, 2010), with patient privacy and confidentiality being paramount (McMinn et al., 2011). Technologies that psychotherapists use ought to enable them to comply with these acts without compromising ethical integrity.

New technologies may prove useful in delivering professional psychology services. Graduate programs in professional psychology may benefit from integrating new technologies into their training through supervision, coursework, research, and didactics. Given the

Table 3
SRS Scores of the Sites

Site	<i>N</i>	Mean	<i>SD</i>
Primary care 1	46	37.1	2.8
Primary care 2	14	36.7	3.9
Primary care combined	60	37	3
Community mental health	56	36.3	4.5

importance of therapeutic alliance, it will be important for professional psychology training programs to establish a context of collaborative and innovative conversation among students and faculty while still affirming the humanizing nature of psychological treatments. New technologies need to be tested to be sure they do not detract from the well-established effectiveness of psychotherapy (Hubble, Duncan, Miller, & Wampold, 2010). Much of this scientific work is already being done with psychotherapy outcome (see Barak, Hen, Boniel-Nissim, & Shapira, 2008 for a meta-analysis), but not as much has been reported with regard to alliance.

Our findings appear to be helpful to the practice of psychotherapy though with some limitations. First, interviewers were instructed to behave in a certain way during the interview. This was not measured during data collection, and we have no way to verify this. Future research could use video review of sessions to account for specific alliance-related behavior in addition to patient-rated alliance. A second and related limitation is we do not know if how an interviewer used the technology impacted the patient-rated alliance or not. It is possible that the variance (or nonvariance as we found) is not related to the use of technology at all. Third, all interviewers used some type of technology to record notes during the interview. We did not measure alliance from interviews without any form of written note taking.

Conclusion

Technology has opened new possibilities that could not have been imagined only a few years ago, and if history is our guide then we can expect to continue to expand the use of technology in life and the practice of professional psychology. It has forever changed our “experience, interaction, education, research, and practice” (APA Policy & Planning Board, 2009, p. 461). Yet there are core dimensions of psychological practice established long before computers and iPads became a mainstay of culture, one of which is the importance of psychotherapeutic alliance. Emerging technologies may alter the way psychologists practice, but the essential nature of a caring confiding relationship calls for continuity and fidelity to what psychologists have been trained to do. These preliminary studies suggest that computers and iPads can be used in an initial interview without compromising psychotherapeutic alliance.

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