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Two brief valid measures of therapeutic alliance in counseling for tobacco dependence

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ABSTRACT

Behavioral counseling is effective for smoking cessation and the psychotherapy literature indicates therapeutic alliance is key to counseling effectiveness. However, no tobacco-counseling specific measures of alliance exist that are suitable in most tobacco counseling contexts. This hinders assessment of counseling components in research and clinical practice. Based on the *Working Alliance Inventory*, and external expert review, we developed two alliance instruments: the 12-item and 3-item *Working Alliance Inventory for Tobacco* (WAIT-12 and WAIT-3). Two samples of 226 daily smokers via Amazon Mechanical Turk completed measures including demographics, tobacco characteristics, working alliance scales, and quit attempts. Both WAIT-12 and WAIT-3 had good to excellent internal consistency (0.92 and 0.88 for the WAIT-3 and 0.96 for the WAIT-12). The WAIT-12 1-factor model indicated poor fit (CFI = 0.83, TLI = 0.79, RMSEA = 0.19, SRMR = 0.09). The WAIT-12 3-factor model (CFI = 0.94, TLI = 0.93, RMSEA = 0.11, SRMR = 0.04) was indicative of acceptable fit. Both the WAIT-12 and the WAIT-3 were significantly associated with participants' self-reported cigarettes per day, quit attempts, and cessation. Initial validation of the WAIT-12 and WAIT-3 indicates they are psychometrically sound measures of tobacco dependence counseling alliance. The WAIT-3 provides brevity; it can be administered in under 1 min. The WAIT-12 allows for assessment of specific components of therapeutic alliance. Overall, these instruments should allow for better measurement of alliance in clinical services and research.

1. Introduction

Counseling is an effective intervention for smoking cessation, increasing the likelihood of quitting by 40–60% compared to minimal support (Mottillo et al., 2008). At present, the kind of support provided across cessation interventions is quite broad, yet meta-analyses have failed to identify specific effective components (Lancaster & Stead, 2017).

Research across multiple health and mental health outcomes has found that therapeutic alliance between counselor and patient is the single most powerful determinant of counseling intervention effectiveness (Ahn & Wampold, 2001). Therapeutic alliance is an inherent feature of counseling that is nonspecific—independent of any counseling content or approach. It consists of the bond that can form between counselor and the client, as well as the ability of the parties to collaborate on the goals and methods of treatment (Lambert, 2016). Stronger therapeutic alliance predicts greater therapeutic change (Orlinsky, Ronnestad, & Willutzki, 2004), as well as prospectively predicting quit attempts among cigarette smokers (Klemperer, Hughes, Callas, & Solomon, 2017). Michie and colleagues' taxonomy of behavior change techniques for smoking cessation includes two roles. One role focuses on non-specific components and competencies related to general aspects of the interaction that are considered evidence-based for smoking cessation counselors (Michie, Churchill, & West, 2011).

U.S. Tobacco Treatment Guidelines call for research to determine the specific effective components of counseling and the mechanisms through which counseling interventions exert their effects (Fiore et al., 2008). Such knowledge could facilitate the development of more effective and efficient treatments. In order to determine the efficacy of different specific approaches to counseling, it is important to measure and control the nonspecific effect of alliance.

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Although the role of therapeutic alliance has received some attention in the tobacco treatment literature (e.g. Klemperer et al., 2017) to date, studies of therapeutic alliance in tobacco treatment have generally used the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) or its short forms (e.g. WAI-Short Revised; Hatcher & Gillaspy, 2006). The WAI is the most widely-used measure of therapeutic alliance (Horvath, Del Re, Flückiger, & Symonds, 2011). It includes sub-scales measuring three aspects of the alliance between counselor and patient based on Bordin's conceptualization (1979): 1) *agreement on goals; 2) agreement on methods for achieving goals; and 3) the overall bond between patient and counselor* (Mallinckrodt & Tekie, 2015).

However, the context of psychotherapy is different than the context of tobacco counseling. Tobacco counseling often occurs in health care settings and there is wide variation in how it is operationalized (Lancaster & Stead, 2005). It may also differ from typical psychotherapy in length (some tobacco interventions are limited to brief advice), context (many tobacco interventions are telephone-based), and provider (many tobacco interventions are delivered by health care providers with little to no counseling training). Person-to-person treatment delivered in four or more sessions is the recommended minimum for tobacco cessation counseling, although brief advice also has a cumulative effect on cessation (Fiore et al., 2008). Conversely, psychotherapy routinely ranges from one session to greater than two years of continuous services (Leichsenring & Rabung, 2011) and it can address a wide range of therapeutic targets, from skin-picking (e.g. Selles, McGuire, Small, & Storch, 2016) to suicide prevention (e.g. Ougrin, Tranah, Stahl, Moran, & Asarnow, 2015).

The WAI is broad in the verbiage used related to outcome, it refers to patients' experience with "therapy" or their "therapist," and it was developed and validated in face-to-face psychotherapy sessions (Hatcher & Gillaspy, 2006). An ideal measure of tobacco counseling alliance would use language appropriate to the more common contexts of tobacco counseling.

Another limitation of the WAI is length. Brief versions of the WAI, the WAI-Short Revised (WAI-SR; Hatcher & Gillaspy, 2006) and the WAI-Short (Tracey & Kokotovic, 1989), contain 12 items, which does not afford the very brief assessment that is often desirable in health care contexts. Therapeutic alliance measures that minimize time and patient burden might be used more (Falkenström, Hatcher, & Holmqvist, 2015) and be more useful, in tobacco treatment settings such as clinics and quitlines.

The purpose of this study was to create and evaluate two instruments: one instrument with tobacco-specific language that closely parallels the WAI including all three subscales, and a second addressing the issues of tobacco-specific language *and* brevity. In addition, we aimed to examine the construct validity of the new instruments with respect to tobacco-specific outcomes including a comparison of the construct validity of the two new instruments.

2. Materials and methods

2.1. Instrument adaptation

To address the issue of tobacco-counseling specific language, we made minimal edits to the 12-item WAI-SR, which has been widely used in psychotherapy literature as well as some smoking cessation studies (Bolger et al., 2010; Klemperer et al., 2017). In the original WAI-SR validation study (Hatcher & Gillaspy, 2006) internal consistency was high (overall $\alpha = 0.91$–0.92, subscale $\alpha = 0.85$–0.90) and confirmatory factor analysis (CFA) demonstrated acceptable model fit ($\chi^2(51) = 128.9$–137.5; CFI = 0.95, TLI = 0.94, RMSEA = 0.08). The Society for Psychotherapy Research provided permission for use of the WAI-SR. As the goal was merely to address the language discrepancy between alliance instruments and tobacco counseling, minimal modifications were made to create the new measure, which we refer to as the Working Alliance Inventory for Tobacco Version-12 (WAIT-12).

We further adapted the WAIT-12 to a 3-item inventory—the Working Alliance Inventory for Tobacco Version-3 (WAIT-3). Initially, we selected items from the WAIT-12 to match Bordin's conceptualization (1979) and the WAI-SR factor structure (Falkenström et al., 2015). We engaged outside experts ($n = 3$) to consider psychometric evidence (Falkenström et al., 2015), theory (Bordin, 1979), and validity in reviewing items. The response format for both the WAIT-3 and the WAIT-12 instruments are the same as for the original WAI-SR. To simplify comparisons between the two instruments, average item responses were used for scoring purposes. The items from both instruments are presented in Table 1.

2.2. Setting and participants

Participants were recruited for two different samples from Amazon's Mechanical Turk (M*Turk) population. M*Turk is a large web-based service in which participants complete tasks in exchange for financial compensation. This large, diverse subject pool has been used for research on health behaviors (Mason & Suri, 2012), addictions (Kim & Hodgins, 2017), and tobacco cessation (Cougle, Hawkins, Macatee, Zvolensky, & Sarawgi, 2014). M*Turk has also been used to establish instrument reliability (Buhrmester, Kwang, & Gosling, 2011).

The first sample provided initial psychometrics for the WAIT-3, and the second sample was used to compare psychometrics with the WAIT-12. To be eligible, "Turkers" were required to self-report having 1) smoked cigarettes on a daily basis within the last six months, 2) an interaction in which their health care provider talked to them about quitting smoking in the past 6 months, and 3) being at least 18 years of age. In line with recommended M*Turk research practice (Chandler & Shapiro, 2016), participants in Sample 1 were blocked from participating in Sample 2. Participants from both samples were reimbursed $1 USD. The University of Kansas Medical Center's Institutional Review Board approved the study.

Table 1
Items.

Working Alliance Inventory for Tobacco - 3 item (WAIT-3).
Below is a list of statements and questions about experiences people have had with their health care provider or professional, referred to below as a tobacco counselor, who talked to them about quitting smoking in the last 6 months. Think about your experience in this interaction, and decide which category best describes your own experience:
[1] Seldom; [2] Sometimes; [3] Fairly Often]; [4] Very Often; [5] Always
Goal: My tobacco counselor and I agreed on clear tobacco treatment goals for me.
Task: My tobacco counselor and I agreed on the method I would use to achieve my tobacco treatment goals.
Bond: I felt that my tobacco counselor appreciated me.

Working Alliance Inventory for Tobacco – 12 item (WAIT-12)
Below is a list of statements and questions about experiences people have had with their health care provider or professional, referred to below as a tobacco counselor, who talked to them about quitting smoking in the last 6 months. Think about your experience in this interaction, and decide which category best describes your own experience:
[1] Seldom; [2] Sometimes; [3] Fairly Often]; [4] Very Often; [5] Always

Goals Subscale:
My tobacco counselor and I collaborate on setting goals for my therapy.
My tobacco counselor and I are working towards mutually agreed upon goals.
My tobacco counselor and I have established a good understanding of the kind of changes that would be good for me.
My tobacco counselor and I agree on what is important for me to work on.
Task Subscale:
As a result of these sessions, I am clearer as to how I might be able to change.
What I am doing in therapy gives me new ways of looking at my problem.
I *feel that the things I do in therapy will help me accomplish the changes that I want.*
I believe the way we are working with my problem is correct.
Bond Subscale:
I believe that my tobacco counselor likes me.
My tobacco counselor and I respect each other.
I believe that my tobacco counselor appreciates me.
I feel that my tobacco counselor cares about me even when I do things that he/she does not approve of.

Note. Italics indicate this item was adapted for the WAIT-3.