

# Journal of Smoking Cessation

<http://journals.cambridge.org/JSC>

Additional services for **Journal of Smoking Cessation:**

Email alerts: [Click here](#)

Subscriptions: [Click here](#)

Commercial reprints: [Click here](#)

Terms of use : [Click here](#)



## Assessing Counsellor Effects on Quit Rates and Life Satisfaction Scores at a Tobacco Quitline

Stephen S. Michael, Ryan G.N. Seltzer, Scott D. Miller and Bruce E. Wampold

Journal of Smoking Cessation / *FirstView Article* / November 2012, pp 1 - 4

DOI: 10.1017/jsc.2012.19, Published online:

**Link to this article:** [http://journals.cambridge.org/abstract\\_S1834261212000199](http://journals.cambridge.org/abstract_S1834261212000199)

### How to cite this article:

Stephen S. Michael, Ryan G.N. Seltzer, Scott D. Miller and Bruce E. Wampold Assessing Counsellor Effects on Quit Rates and Life Satisfaction Scores at a Tobacco Quitline. *Journal of Smoking Cessation*, Available on CJO doi:10.1017/jsc.2012.19

**Request Permissions :** [Click here](#)

# Assessing Counsellor Effects on Quit Rates and Life Satisfaction Scores at a Tobacco Quitline

Stephen S. Michael, MS,<sup>1</sup> Ryan G.N. Seltzer, MS, MA,<sup>1</sup> Scott D. Miller, PhD,<sup>2</sup> and Bruce E. Wampold, PhD, ABPP<sup>3</sup>

<sup>1</sup>Arizona Smokers' Helpline, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, Arizona, USA

<sup>2</sup>Chief Science Officer, International Center for Clinical Excellence, Chicago, Illinois, USA

<sup>3</sup>Counseling Psychology, School of Education, University of Wisconsin-Madison, Madison, Wisconsin, USA & Research Institute, Modum Bad Psychiatric Center, Vikersund, Norway

**O**bjective: To evaluate the extent to which a client's successful tobacco quit attempt and subsequent improvement in life satisfaction depend on the quitline counsellor assigned to provide the cessation counselling. **Methods:** A retrospective review of 2,944 Arizona Smokers' Helpline client records was conducted on enrolment, follow-up, and programme treatment data. Seven month post-enrolment quit rates were calculated on an intent-to-treat sample for 30-day point prevalence during follow-up surveys. A variance components model was used to estimate *counsellor effects*, that is, the amount of variability in outcomes explained by individual counsellor differences. Similar analysis was done to detect presence of counsellor effects in clients' Outcome Rating Scale (ORS) scores (Miller et al., 2003) – a proxy measure of life satisfaction – as they change from intake date to exit date. **Results:** Statistically significant differences in quit rates (2%) and ORS change scores (2%) were attributable to counsellor effects. **Conclusions:** The results suggest that counsellor effects have an impact on quitline outcomes that otherwise might have been overlooked if one assumed that only treatment factors and extraneous factors contributed significantly to outcomes. Additional research is required to determine the sources of counsellor effects, as well as whether additional efforts to eliminate these counsellor effects can be justified.

**Keywords:** quit rates, counsellor effects, life satisfaction, quitline, cessation

## Introduction

One facet of tobacco cessation quitline operations that has received little attention is the extent to which successful quitting critically depends on the counsellor assigned to the tobacco user, as opposed to solely or primarily on the treatment used, such as cognitive-behavioural therapy, or the client's characteristics, such as degree of motivation to quit. The client quit rate attributed to a particular counsellor is thus composed of:

- a) Counsellor effects, the source of which would be differences among various counsellors in technical competency, ability to empathise with clients, and so forth.
  - b) Treatment effects, the source of which would be the reliability and validity of the treatment itself, such that one treatment might prove to be superior to another in generating favourable outcomes.
  - c) Extraneous effects, such as a given client's motivation to quit or degree of tobacco dependency, regardless of the treatment's or counsellor's presumed effectiveness.
- The same rationale applies to assessing counsellor effects for other outcomes in addition to quit rates. The Outcome Rating Scale (ORS) (Miller et al., 2003) is a proxy measure of life satisfaction, another outcome of interest to quitlines. The general expectation is that making positive changes in one's life, such as quitting tobacco use, will translate into improvements in quality of life overall. At both intake and exit, clients complete an ORS questionnaire, with the ORS change score over this period being an indicator of improvement or deterioration in life satisfaction as co-occurs with tobacco cessation counselling (Miller et al., 2003). Presence of counsellor effects would thus indicate that some counsellors have a more positive

Corresponding Author and Requests for Reprints: University of Arizona Mel and Enid Zuckerman College of Public Health, Arizona Smokers' Helpline, 2302 E. Speedway, Suite 210, Tucson, AZ 85719, tel. (520) 320-6819, fax (520) 318-7222, smichael@email.arizona.edu.

impact on clients' self-reports of life satisfaction than other counsellors (Wampold, 2001).

To our knowledge, no other studies on counsellor effects at tobacco quitlines have been published. Thus, research results from other counselling/therapy provider effects studies might prove instructive, although generalising from other disciplines to quitline counselling must be done cautiously. For psychotherapists, provider effects of approximately 6–10% have been documented (Anderson, Ogles, Patterson, Lambert & Vermeersch, 2009; Kim, Wampold & Bolt, 2006; Wampold, 2001). Given that confounding factors such as allegiance to methodology (Norcross, 2010; Wampold, 2001) and alliance formation (Wampold, 2001) are likely more critical factors in promoting provider effects in psychotherapy than in single-issue services such as provided by a tobacco quitline, the expectation is that any counsellor effects at quitlines should be substantially less than 6–10%.

### Hypothesis

The primary hypothesis is that the contribution of counsellor effects to any variability in quit rates and ORS change scores is significant and indicate that counsellor effects are present.

## Methods

### ASHLine Operations

The Arizona Smokers' Helpline (ASHLine) is the state-funded tobacco quitline for Arizona providing free telephone-based quit services accessed through a toll-free number for all residents of the state wanting to quit using tobacco. The ASHLine uses a Client-Directed Outcome-Informed (CDOI) approach that allows for maximum flexibility based on caller needs, with regular real-time feedback obtained from the clients about effectiveness of services. The ASHLine recognises the importance of individualising treatment for each caller, incorporating treatment guidelines for training staff that are based on the key principles outlined in the US Public Health Guidelines for Treating Tobacco Use (Fiore et al., 2008) and in the Tobacco Dependence Treatment Handbook (Abrams, 2003). ASHLine counselling can be characterised as a brief strategic/ interactional therapy (Barry, 1999; Saleebey, 1996), typically relying on Motivational Interviewing (MI) and behavioural change strategies. The ASHLine counsellors follow broad categorical protocols, but to remain individualised and client-focused, no scripts are used.

### Data Collection

Callers enter the ASHLine programme either by directly calling the ASHLine or by being referred by a healthcare provider. Once enrolled, the callers – now referred to as clients – are assigned to a tobacco cessation counsellor based on client time availability and counsellor caseload. Review data were entered into a database on a secure server

by the clinical manager at 30 day, 90 day, and/or exit post enrolment. Client post-programme quit status and programme satisfaction data are then collected during the post-enrolment follow-up survey at seven months. Those clients who agree at the time of enrolment to be contacted for follow-up surveys are called by the ASHLine survey staff at designated intervals.

For this study, retrospective records review of client demographics, tobacco dependence treatment, and tobacco use was used for data analysis. Client data were obtained from enrolment surveys, seven-month follow-up surveys, and from treatment interactions with the tobacco cessation counsellor. This study was approved by the Institutional Review Board at the University of Arizona.

### Data Analysis

Client quit rates as grouped by counsellor measured whether a client was tobacco-free for the 30 days prior to the survey conducted 7 months post-enrolment. The analysis reports outcomes with an intent-to-treat model, where non-responders and individuals who refused to respond were coded as currently using tobacco. A variance components model was used to estimate the variability in an outcome variable that is attributable to individual differences in the counsellor. Intraclass correlation coefficients (ICC for continuous outcomes and Pairwise ICC for categorical outcomes) were used to obtain the amount of variability in the criterion due to individual counsellor differences (Donner & Koval, 1980). The Mixed and GLIM-MIX procedures in SAS® 9.2 (SAS Institute, 2008) were used for the analysis. The variance components model was also used to estimate variability in ORS change scores as attributable to counsellor.

## Results

A total of 2,944 callers enrolled in the ASHLine between 2 January 2007 and 14 December 2008 were included as clients in the analysis (Table 1). The average age of these clients was 48.13 ( $SD = 13.07$ ), with 14% reporting Hispanic ethnicity. The majority of clients in this study were white (79%), and female (60%) who either graduated from high school or completed some level of college (83%). Average number of years of tobacco use for those in the study was 28.56 ( $SD = 13.60$ ).

There was significant variability (2%) in 30-day point prevalence quit rates that was explained by the counsellor ( $\hat{\rho} = .02$ ,  $p = .01$ ). Table 2 presents the range in criterion variance to demonstrate the effect of counsellor variability on the selected outcomes. An additional variance components analysis was conducted to evaluate variance in changes in ORS scores that are attributable to the counsellor. Similar to the quit rate results, there was significant variability (2%) in ORS change scores from first to last session explained by the counsellor ( $\hat{\rho} = .02$ ,  $p < .0001$ ).

The above ORS variability estimates comprise the full range (0–40) of possible ORS scores. However, the pre-

**Table 1**

Demographics of the sample of 2,944 enrollees

	Frequency	Percent of Responders
Sex:		
Male	1150	39.28
Female	1778	60.72
Race:		
White	2271	78.83
African American	159	5.52
Asian	19	.66
Hawaiian	3	.10
American Indian	37	1.28
Other Race	392	13.61
Insured:	2517	86.41
Hispanic:	409	14.27
Age:	M = 48.13 years SD = 13.07 years	
Education:		
No HS Diploma	509	17.29
HS Diploma	1965	66.75
College Degree	470	15.96

dictive capacity of the ORS is best with samples reporting high levels of stress (i.e., those with scores less than 25) (Duncan, Miller & Sparks, 2004). A total of 4% of the ORS change score variability was explained by the counsellor in this clinical sample ( $\hat{\rho} = .04$ ,  $p = .003$ ). Finally, ICC was calculated for patients who entered with ORS scores above the clinical cut-off score ( $>24$ ), but who transitioned into the clinical range ( $<25$ ). A total of 6% of the variance in ORS change scores for this sample was explained by the counsellor ( $\hat{\rho} = .06$ ,  $p = .004$ ).

## Discussion

Counsellor effectiveness for addictions is generally presumed to be composed of various indicators of the counsellor's competency, such as aptitude, interpersonal skills and motivation (Majavits & Weiss, 1994). Given provider variability, counsellor effect (more generally, provider effects), as a statistical construct, could be assumed absent if:

- Individual provider characteristics are relevant to achieving successful outcomes, but all providers in a given practice or service happen to be equally effective.
- Providers are irrelevant because it is the service provided, and not the service provider, that in fact determines success.
- Individual providers are ideally matched with clients, such that, for example, less-skilled providers are assigned the easiest cases and highly-skilled providers

are assigned the most difficult cases, thus roughly guaranteeing that all providers have equal success rates.

In the (b) and (c) scenarios, there would probably be ceiling effects that render quitting so easy or floor effects that render quitting so difficult that the potential sources of counsellor effects are rendered irrelevant. Moreover, scenario (c) would require a non-random matching protocol that may or may not fit with a particular counselling service's philosophy or capacity. In contrast, any evidence for counsellor effects would constitute evidence for differences among providers in their characteristics, as well as for absence of ceiling/floor effects.

As mentioned, the Outcome Rating Scale scores indicate a caller's self-reported level of stress, with higher scores indicating lower levels of stress (Duncan, Miller & Sparks, 2004). The relationship between quit rates and ORS scores is complex, and to emphasise, both can be influenced by factors unrelated to counsellor or treatment. One expectation is that stressed individuals are less likely to be able to quit tobacco. Thus, if a client measures outside the range of clinical stress, the client's life would be stable enough to handle a quit attempt and the client would be more likely to succeed in that attempt.

The main finding of this study supports the hypothesis that the counsellor contribution to variability in outcomes, as estimated by quit rates and ORS scores, is significant for this quitline. The finding of 2% variability in quit rates by counselor means that a counsellor 1 SD above the mean has an average quit rate twice that of a counsellor 1 SD below the mean. The fact that counsellor effects contribute to 2% of the overall variability in client quit rates means that, in spite of the ASHLine's use of best practices that should eliminate counsellor effects, the counsellor assigned to a client has at least a modest contribution to the success of a tobacco quit attempt. Similarly, the 2% variability for the ORS change score suggests that some counsellors have a greater impact on life satisfaction scores than other counsellors.

Given that provider effects in psychotherapy not only range from 6–10% but have proven resistant to elimination despite concerted efforts to do so (Anderson et al., 2009; Kim et al., 2006), the relatively small amount of variability in outcomes found here for single-issue counselling might appear trivial, or at least tolerable. Indeed, efforts to completely eliminate counsellor effects – that is, efforts to ensure that all counsellors have identical success rates 'no matter what the cost' – might instead inadvertently lead to a reduction in overall success rate for the quitline, or simply shift the source of variability to either treatment effects or extraneous effects. Conversely, ongoing efforts in remedial training of less-successful counsellors, among other options, might reduce the counsellor effects, but a more laudable goal might be to focus on improving overall success rates in which modest counsellor effects of no greater than about 2% are tolerated.

**Table 2**

Variance component estimates attributable to counsellors

	N	Counsellor Effects	P	Mean	1SD Above Mean	1SD Below Mean
Quit Rate	1697	2%	.01	26.83%	19%	37%
ORS Change Score	2880	2%	<.0001	2.11	-5.43	9.65
Clinical ORS Change Score	539	4%	.003	-3.13	-11.41	5.15
ORS Decrease from Non-Clinical to Clinical	303	6%	.004	-6.66	-14.96	1.64

Note 1: Negative change scores indicate a decrease in ORS from intake to exit (indicating an increase in self-reported stress), and positive change scores indicate an increase in ORS from intake to exit.

Note 2: 1 SD above and 1 SD below the criterion mean are used to show the variability in criterion resulting from the Counsellor Effects.

This study has limitations that may impact interpretation of the findings. First, this study did not profile individual counsellors. Future research, in which informed consent to use these data will be sought, can address this internal validity issue. Second, quitlines that use different procedures than the one used by ASHLine may not replicate the findings here. Third, this study was not a randomised clinical trial, but instead utilised a convenience sample in which cases were not randomly assigned to different conditions. Fourth, the statistics yielded correlations that cannot be straightforwardly interpreted as indicating a cause-effect relationship between the counsellors' actions and the success or failure of treatment. Fifth, we do not have a baseline counsellor effects estimate from a period when different protocols were used at the ASHLine for comparing the current counsellor effects to determine if they have increased or decreased.

In conclusion, the value of studies that can document the nature and extent of counsellor effects is that they provide a means for assessing individual strengths and weaknesses in a manner that facilitates remedial training or customised counsellor-client matching to improve individual counsellors' effectiveness, thereby improving benefits to the client and to the public at large. Continued efforts may be able to reduce the counsellor effect in interventions. The elimination of these effects may be out of the scope of practice as the complicated combination of variables that contribute to counsellor effect have not yet been identified. Additional research, however, is needed to more clearly establish the relationships among counsellor effects, treatment effects, and extraneous effects at this quitline.

## Funding

This work was supported by a contract through the Arizona Department of Health and Human Services Bureau of Tobacco and Chronic Disease (contract number HS655322 supporting SSM and RGNS). This study was approved by the University of Arizona Institutional Review Board (IRB Review number 10-0688-02).

## Declaration of Interests

The authors have no competing interests to declare.

## References

- Abrams, D. (2003). *The tobacco dependence treatment handbook: a guide to best practices*. New York: Guilford Press.
- Anderson, T., Ogles, B. M., Patterson, C. L., Lambert, M. J., & Vermeersch, D. A. (2009). Therapist effects: facilitative interpersonal skills as a predictor of therapist success. *Journal of Clinical Psychology*, 65(7), 755–768. doi:10.1002/jclp.20583
- Barry, K. L. (1999). *Brief interventions and brief therapies for substance abuse*. Treatment Improvement Protocol (TIP). Rockville, MD: Center for Substance Abuse Treatment (CSAT), U.S. Department of Health and Human Services.
- Donner, A., & Koval, J. J. (1980). The estimation of intraclass correlation in the analysis of family data. *Biometrics*, 36(1), 19–25.
- Duncan, B. L., Miller, S. D. & Sparks, J. A. (2004). *The heroic client: a revolutionary way to improve effectiveness through client-directed outcome-informed therapy*. San Francisco, CA: Jossey-Bass.
- Fiore, M. C., Jaen, C. R., Baker, T. B., Bailey, W. C., Benowitz, N. L., & et al. (2008). *Treating tobacco use and dependence: 2008 update*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service.
- Kim, D. M., Wampold, B. E., & Bolt, D. (2006). Therapist effects in psychotherapy: A random-effects modeling of the National Institute of Mental Health Treatment of Depression Collaborative Research Program data. *Psychotherapy Research*, 16(2), 161–172. doi:10.1080/10503300500264911
- Miller, S. D., Duncan, B. L., Brown, J., Sparks, J. A., & Claud, D. A. (2003). The outcome rating scale: a preliminary study of the reliability, validity and feasibility of a brief visual analog measure. *Journal of Brief Therapy*, 2(2), 91–100.
- Najavits, L. M. & Weiss, R. D. (1994). Variations in therapist effectiveness in the treatment of patients with substance use disorders: an empirical review. *Addiction*, 89, 679–688.
- Norcross, J. C. (2010). The therapeutic relationship. In B. L. Duncan, S. D. Miller, B. E. Wampold, & M. A. Hubble (Eds.), *The heart & soul of change: delivering what works in therapy* (2nd ed., pp. 113–141). Washington DC: American Psychological Association.
- Saleebey, D. (1996). The strengths perspective in social work practice: extensions and cautions. *Social Work*, 41(3), 296–305.
- Wampold, B. E. (2001). *The great psychotherapy debate: models, methods, and findings*. Hillsdale NJ: Lawrence Erlbaum Associates.