

INVITED COMMENTARY

On Motivational Interviewing for Oral Health Promotion: State of the Field and Future Directions

C.L. Randall¹ **Knowledge Transfer Statement:**

Behavior is important in dental disease etiology, so behavioral interventions are needed for prevention and treatment. Motivational interviewing has been proposed as a potentially useful behavioral intervention for oral health promotion, but results from published studies are mixed. Furthermore, this literature is immature; basic efficacy research and innovative applications are still needed. Although likely not as a stand-alone intervention, motivational interviewing may hold promise for dental public health.

Keywords: health behavior, behavior change, behavioral intervention, intervention research, theory, mechanisms

This issue of *JDR Clinical and Translational Research* offers results from 2 randomized trials of motivational interviewing (MI) to prevent early childhood caries (ECC) in high-risk populations (Batliner et al. 2018; Henshaw et al. 2018). Despite their high quality, both studies found MI delivered by a lay interventionist to produce increased caregiver knowledge but not changes

in oral health behavior or ECC progression. As the authors suggest, specifically for reducing ECC rates in high-risk populations, these findings indeed may indicate limited potential for MI applied as a stand-alone intervention. At the same time, I argue that the new findings are not cause for completely abandoning the application of MI for oral health promotion, generally. Rather, additional commentary on the state of the field is prompted, as are important considerations for future research.

Behavior plays a well-documented and major role in the development and progression of many dental diseases, so behavioral interventions are critical for prevention and/or treatment. Unique characteristics of MI make it a promising, patient-centered behavioral intervention for oral health promotion (McNeil et al. 2017). An MI approach and skills can be learned by interventionists with limited counseling or mental health experience (e.g., dentists, hygienists, community health workers). By design, MI is collaborative and respects patient autonomy, and patient acceptance of MI typically is good. A robust literature suggests MI's utility for health behavior change under the right circumstances and when correctly and adequately delivered.

Batliner and colleagues (2018) and Henshaw and colleagues (2018) developed rigorous studies and carried them out expertly. Even with their many strengths, these new studies—and the mixed, albeit small, body of literature published before them (see Gao et al. 2014 for most recent review)—raise more questions about MI for oral health promotion than definitive answers. First, no known studies have specifically addressed what “dose” of MI is needed to produce changes in oral health-relevant behaviors. The optimal number and length of MI sessions, as well as the span of time over which sessions are delivered, remain to be identified. Second, no known studies have explicitly investigated what level of training in MI, specifically, and counseling, generally, is necessary to produce clinically meaningful outcomes when MI is used for oral health promotion. Likewise, no known studies have systematically determined whether interventionists' profession (e.g., dentist, psychologist, community health worker) is associated with success of MI. Third, optimal timing (e.g., pre- versus postpartum, adolescence versus adulthood) and target (e.g., patient versus caregiver) of MI interventions has not been sufficiently

DOI: 10.1177/2380084418796462. ¹Department of Oral Health Sciences, University of Washington School of Dentistry, Seattle, WA, USA. Corresponding author: C.L. Randall, Department of Oral Health Sciences, University of Washington School of Dentistry, 1959 NE Pacific Street, Box 357475, Seattle, WA 98195, USA. Email: CLR333@uw.edu

© International & American Associations for Dental Research 2018

investigated in the oral health arena. For any of these reasons, negative results of extant studies may be the product of treatment dilution and/or suboptimal treatment application.

In addition to addressing the above, future studies of MI for oral health promotion should explicitly investigate demographic, psychological, behavioral, and environmental moderators and mediators. Future studies also should elucidate pathways of change, using objective (i.e., not self-reported) measures of oral health behavior; researchers should prioritize development of such objective measures, as availability currently is limited. Determining which behaviors are necessary and/or sufficient to improve dental outcomes also is critical so that MI interventions can target all essential behaviors. With this key basic information, we will be more confident in our assessment of the efficacy of MI for oral health promotion, be able to carry out higher quality effectiveness trials, and have a better understanding of the feasibility and cost-effectiveness of using MI to improve oral health at the community level.

Ultimately, MI may benefit oral health promotion through more *nuanced and patient-centered implementation*. The behavioral sciences increasingly are being applied in the personalized medicine movement. As such, and to maximize the likelihood of a therapeutic effect, it is expected that we will learn more about how best to match behavioral interventions to patients. For example, MI for oral health promotion might be indicated only when motivation is low and/or certain thresholds of knowledge and skill are met. Similarly, to ensure/improve efficacy, various formats may be tailored to different populations or developed for use when certain psychological or environmental markers are present.

Most important, MI may best serve oral health promotion as a *complement* to other theory-based and empirically supported behavioral or social interventions. Consistent with contemporary research, adjunctive MI may activate engagement in other vital

behavioral interventions for patients who alternatively would be unmotivated. For instance, in my practice as a clinical health psychologist, I used MI to increase an adolescent's readiness to engage in a contingency management intervention for orthodontic treatment adherence. More than just education or goal setting, the paired intervention/technique should be rooted in theory and have efficacy (e.g., rehearsal, restructuring of physical environment, self-monitoring, shaping). In this way, 2 interventions operate in concert; MI decreases ambivalence about behavior change, and the paired intervention facilitates that change.

Particularly as a stand-alone intervention, MI is not a panacea for dental diseases of complex, multifactorial etiology (e.g., ECC). For high-risk populations, there may be barriers to oral health that are insurmountable with counseling alone. Thus, as Batliner and colleagues (2018) and Henshaw and colleagues (2018) appropriately implore, the dental research community must consider innovative approaches to oral health promotion that are multipronged and target upstream social determinants. Such approaches might include MI as one of many components.

The use of MI as a primary strategy for ECC prevention in high-risk populations may be ineffective; however, MI still holds promise in other settings/populations, for preventing other dental diseases, and, most likely, as an adjunct to other behavioral and/or social interventions. Substantial need exists to pursue basic and mechanistic intervention research on the application of MI for oral health promotion, broadly, and to establish best practices. In carrying out such research, there is an opportunity to consider how to modify multiple determinants of behavior—not just motivation—and to do so with approaches grounded in current theory (e.g., Asimakopoulou and Newton 2014). I am hopeful that sophisticated applications of behavioral science, generally, and MI, specifically, will contribute to population-level amelioration of dental disease.

Author Contributions

C.L. Randall, contributed to conception, data acquisition, analysis, and interpretation, drafted and critically revised the manuscript.

Acknowledgments

The authors of the cited Batliner et al. (2018) and Henshaw et al. (2018) articles are acknowledged with appreciation for their constructive comments on an earlier draft of this Invited Commentary. Both research teams were consulted in the writing of this opinion piece and provided permission for this perspective to be published alongside their articles in this issue of *JDR Clinical and Translational Research*. The author received no financial support and declares no potential conflicts of interest with respect to the authorship and/or publication of this article.

ORCID iD

C.L. Randall  <https://orcid.org/0000-0002-5061-7450>

References

- Asimakopoulou K, Newton JT. 2014. The contributions of behaviour change science towards dental public health practice: a new paradigm. *Community Dent Oral Epidemiol.* 43(1):2-8.
- Batliner TS, Tiwari T, Henderson WG, Wilson AR, Gregorich SE, Fehringer KA, Brega AG, Swyers E, Zacher T, Harper MM, et al. 2018. Randomized trial of motivational interviewing to prevent early childhood caries in American Indian children. *JDR Clin Trans Res.* 3(4):366-375.
- Gao X, Lo ECM, Kot SCC, Chan KCW. 2014. Motivational interviewing in improving oral health: A systematic review of randomized controlled trials. *J Periodontol.* 85(3):426-437.
- Henshaw MM, Borrelli B, Gregorich S, Heaton B, Tooley E, Santo W, Cheng NF, Rasmussen M, Helman S, Shain S, et al. 2018. Randomized trial of motivational interviewing to prevent early childhood caries in public housing. *JDR Clin Trans Res.* 3(4):353-365.
- McNeil DW, Addicks SH, Randall CL. 2017. *Motivational interviewing and motivational interactions for health behavior change and maintenance.* Oxford University Press (Oxford, UK): Oxford Handbooks Online. doi:10.1093/oxfordhb/9780199935291.013.21