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Author(s):	<i>Becky F. Antle, Dana J. Sullivan, Anita Barbee, and Eli A. Karam</i>
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Training Fidelity as an Important Precursor for Outcomes of Relationship Education Programs

Becky F. Antle, Dana J. Sullivan, Anita Barbee, and Eli A. Karam

Training fidelity concerns all the strategies that monitor and provide feedback on the accuracy and consistency of an intervention or manualized curriculum to ensure it adheres to the original research protocol. While outcome studies abound, reviews of the literature in social work, marriage and family therapy, and other related disciplines reveal that studies of training fidelity are more limited. However, it is premature to evaluate outcomes before researchers are certain that components of the curriculum have been delivered in a similar manner to all participants over time. Therefore, training fidelity should be an essential primary construct to measure in all outcome research on curriculum evaluation. A standardized, reliable, agreed upon method for measuring training fidelity in curriculum evaluation has yet to be determined.

In this article we will share some new methodological procedures to measure training fidelity and provide some recommendations for “best practice” that may be adapted to document this important construct in curriculum evaluation research. We will also articulate the importance of training fidelity as it pertains to the real-world, ecological validity of effectiveness studies. Throughout the article, we use our own curriculum delivery research with the Within My Reach (WMR) relationship skills program (Stanley, Pearson, & Kline, 2005) to provide a template for expanding training fidelity.

Overview of Fidelity

The National Institute of Health Behavior Change Consortium developed a set of recommendations for enhancing treatment fidelity in health behavior change interventions (Bellg et

al., 2004). They define treatment fidelity as “methodological strategies used to monitor and enhance the reliability and validity of behavioral interventions” (p 443). Although these procedures are essential to the interpretation of findings on the effectiveness of interventions, there has been limited collection and reporting of fidelity data in the literature. This group proposed fidelity recommendations in five areas: study design, training providers, delivery of treatment, receipt of treatment, and enactment of treatment skills. The specific goals of these fidelity strategies include ensuring treatment doses within and across conditions, standardizing training and monitoring provider skills, controlling for provider differences and promoting adherence to the treatment protocol, and assessing participant ability to understand and apply skills.

These federal guidelines have been customized to specific educational and clinical programs. For example, Stamper (2007) assessed six elements of program fidelity for college alcohol interventions: exact adherence to treatment manual protocol, overall adherence to treatment goals, length of intervention delivery, quality of intervention delivery, encouragement of participation, and participant responsiveness. Many of the same criteria were set forth by Forgatch, Patterson, & DeGarmo (2005) for fidelity of the Oregon model of Parent Management Training: knowledge, structure, teaching skill, clinical skill, and overall effectiveness.

In addition to defining the construct of fidelity, researchers have suggested ways to enhance treatment fidelity such as clinical flexibility and cross-site fidelity (Arnold et al., 1997). They suggest that fidelity can be supported through

Becky F. Antle, PhD, MSSW is an Associate Professor at the University of Louisville’s Kent School of Social Work.

Dana J. Sullivan, PhD, MSW is the BSW Program Director for the Department of Social Work at Western Kentucky University.

Anita Barbee, PhD, MSSW is a Professor at the University of Louisville’s Kent School of Social Work.

Eli A. Karam, PhD, LMFT is an Associate Professor at the University of Louisville’s Kent School of Social Work.

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manuals, weekly teleconferences, site visits, consultants, and feedback loops from therapists and supervisors to the project steering committee. Very similar suggestions were made by Webster-Stratton and Reid (2006) for implementing the Incredible Years treatment program for conduct problems in children. These keys to high fidelity include standardized treatment materials and protocols, standardized training for clinicians, effective peer support and clinical supervision, ongoing fidelity monitoring, and agency/administrative support for clinicians.

Measurement of Fidelity

Once the construct of fidelity for a target program has been operationalized, there is a need for rigorous measurement of the construct. Eames et al. (2008) developed and validated an observational tool to evaluate intervention fidelity for the Incredible Years BASIC parenting program. The tool helped trained observers assess whether key process skills required for the program were utilized. They established that there was high internal reliability, code-recode reliability, inter-rater reliability, and concurrent validity. Forgatch et al. (2005) also developed an observation-based measure to assess adherence to the Oregon model of Parent Management Training.

Relationship between Fidelity and Outcomes

There are mixed results on the degree to which treatment programs are implemented with fidelity. Some programs, such as the Reconnecting Youth drug abuse prevention program, report high levels of fidelity with 90% of the core lessons being taught (Sanchez et al., 2007). However, other fidelity research has shown less consistency in program implementation. For example, an evaluation of family group decision making in child welfare reported inconsistency in the use of certain elements of the model such as community representation and mobilization of supports (Berzin, Thomas, & Cohen, 2007).

When treatment programs are implemented with fidelity, there is considerable evidence of a

link between fidelity and positive outcomes. For example, Forgatch et al. (2005) found that high levels of fidelity predicted changes in observed parenting practices from baseline to twelve months for the Oregon model of Parent Management Training. Likewise, Jensen (2008) evaluated the impact of functional behavioral assessment-based interventions on school behaviors and identified that when interventions were delivered with fidelity and at the appropriate dose, students experienced a significant reduction in the level of inappropriate behaviors. Kovaleski, Gickling, Morrow, and Swank (1999) also studied the impact of fidelity on outcomes for school-based interventions and learned that higher levels of fidelity were associated with positive academic performance for at-risk students. Outcomes for students for whom there was low treatment fidelity were comparable to those in the control group. Lastly, Stamper (2007) found a positive impact of fidelity on outcomes through research on college alcohol interventions. In this study, adherence to treatment goals, longer length of delivery, and encouragement of participants through an instructional intervention were related to an increase in knowledge and decrease in alcohol risk behaviors. This researcher also found that the quality of the intervention was not as influential on outcomes as the fidelity and dose of the intervention as long as a minimum level of quality was achieved.

However, in the same study Stamper (2007) found no effect of treatment fidelity on outcomes for a social norms intervention for alcohol risk behaviors among college students. Even more in contrast with other research on the link between fidelity and positive outcomes is a study by Sanchez et al. (2007) that found a relationship between treatment fidelity and increased marijuana use. This research evaluated the Reconnecting Youth program, a drug abuse prevention program for high school students that tries to reconnect these youth to school before they drop out. These authors also found that greater exposure to the program (student attendance at the program) was associated with an increase in alcohol use, anger, and bonding with

high-risk peers.

The Importance Training Fidelity Research

It is necessary to implement all components of a program as they were originally intended in order to ensure the change in the dependent variable(s) can be attributed to successful delivery of the curriculum. Conclusions regarding change in the measured outcomes as a function of the interventions are completely dependent upon the actual curriculum being implemented with integrity and fidelity.

Training manuals have been developed to ensure that curricula will be delivered in a uniform fashion. Flexible and clearly written manuals may aid in dissemination and increase popularity among potential users. While these manuals must exist in order to train facilitators properly to deliver curriculum components, manuals alone do not guarantee fidelity. Training fidelity data reveal important information about the feasibility of curriculum delivery. If it is difficult to achieve fidelity of curriculum delivery in practice, the curriculum may have low feasibility in real-world settings. The day-to-day practice of curriculum delivery in community agencies and other applied settings may not resemble the tightly controlled environment of most laboratory efficacy studies. Working with multi-problem clients, under-resourced staff, and other unplanned variations present a number of challenges to training fidelity. Therefore, it is important to measure fidelity both in controlled laboratory studies and in real-world settings.

Fidelity data can not only offer a template of service delivery, but also may serve as further resource for providing supervision/training to facilitators and aid in the modification and revision of training protocols and manuals.

As this brief review of the literature above indicates, there have been a limited number of studies on treatment fidelity and its impact on outcomes. These studies have been focused on health behavior interventions, school-based programs, and child welfare. However, there have been no studies reported to date on fidelity

assessment for relationship education programs. Given the wide body of evidence of effectiveness of marriage/relationship education programs (Halford, Markman, Stanley, & Kline, 2003) and the proliferation of these programs through the Healthy Marriage Initiative (Ooms, 2007), there is a need to address this missing link between program fidelity and outcomes. Outcome is only meaningful with accompanying fidelity data. Without proper fidelity measurement there is the potential to conclude falsely that observed findings can be attributed to the mechanisms of change behind an intervention.

The following research begins to address these needs of the literature by describing the evolution of a fidelity assessment process for the Within My Reach relationship education programs for low-income individuals. Preliminary data on program fidelity for a federally funded project utilizing this curriculum are provided as an example.

Preliminary Questions to Consider in Training Fidelity Measurement Design

The following measurement questions surrounding training fidelity should be considered in every evaluation protocol.

- What and how much of an intervention/curriculum to measure?
- When to measure, and by whom?
- How to measure qualitative features of intervention/curriculum delivery?
- How to feedback fidelity data to trainers?

Evolution of Fidelity Process

Early Measurement Methods

The methods utilized to measure training fidelity were developed in work on state child welfare training contracts, as well as other projects by this research team. For example, training satisfaction tools were used as a proxy measure of certain aspects of the training cycle (e.g. trainer competence). Participant knowledge tests were used as indicators of curriculum shift or failure to comply with the curriculum. Evaluators then went back to training administrators and trainers to discuss changes that

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may have occurred. Also, this often involved a review of written curriculum for changes not reported to the evaluation team.

One example of this process was a federally funded grant designed to train teams and supervisors on an evidence-based child welfare practice model to promote positive outcomes under the Adoption and Safe Families Act (PL 105-89) (see Antle, Barbee, & van Zyl, 2008). The fidelity assessment for this was driven by the use of multiple trainers and the desire to assure similarity between training cohorts. Methods used included live observation of training intervention across the sites. Knowledge tests were used as a measure of curriculum compliance. The extent to which the trainer covered items on the knowledge test was an indicator of training fidelity. The fidelity data were used to provide feedback to trainers on the key areas of the curriculum to cover and to promote consistency between the trainers.

Another example was a federally funded training grant awarded to this team to train child welfare teams and supervisors in the area of couple relationships and marriage (Christensen, Antle, & Johnson, 2008). Videotaped observation and evaluator coding of curriculum correspondence was utilized. The coding of curriculum correspondence was “general” and was not guided by an evaluation tool. This was used to identify curriculum drift and make necessary modifications to the written curriculum in order to capture appropriate changes the trainers made to the curriculum. These changes made the curriculum more relevant and well-received by participants. For example, an area identified during this process was a need for more emphasis on the self-care elements of the curriculum. The fidelity data were used to revise the written curriculum and to identify new areas of research (e.g. self-care needs of child welfare workers related to personal relationships).

Standardized Measurement of Training Fidelity: Within My Reach

A more standardized measurement of training fidelity has been implemented with the

Relationship Education Across Louisville (REAL) grant which provides the Within My Reach healthy relationship curriculum to at-risk adults. Within My Reach (Stanley et al., 2005) is a 16-hour curriculum for adults (typically delivered across 4 days) that teaches participants ways to strengthen healthy relationships, end unhealthy relationships safely, and choose future partners wisely. There is a strong emphasis on different types of safety: emotional, physical, and commitment safety. In addition, the importance of adult relationships for child well-being is presented.

Overview of Fidelity Tools

The development of the fidelity tools for this project began with an identification of core concepts from each module of the curricula. From 15 modules in the WMR curriculum, 26 core concepts were identified. See Table 1 for core concepts identified. Several grant team members thoroughly examined the curriculum to identify these core concepts. There was a high level of consensus regarding these core concepts established before the fidelity assessment tool was constructed.

Fidelity Assessment Tool 1.0. This first version of the tool measured the extent to which each core concept covered on a Likert Scale (from 1 to 3; with 1 = not covered at all to 3 = thoroughly covered). However, this version did not address methods utilized by the trainer, including the extent to which the trainer balanced lecture, discussion, group exercises, and individual exercises. While this curriculum provides ample opportunity for a variety of training methods to be utilized, time constraints often require a facilitator to eliminate certain activities from a module.

Fidelity Assessment Tool 2.0. This version of the tool added a training methods component. Observers were asked to rate the extent to which each method was used, based on a Likert Scale (from 1 to 3; with 1= too little to 3 = too much). The assessment was based upon best practices in teaching which suggest a need for balance across methods. However, the raters struggled to identify

a category for some activities observed; and in some cases there seemed to be more than one method being utilized at once. Observers also found it difficult to operationalize whether each method was used too much or too little.

Fidelity Assessment Tool 3.0. In this version of the tool, the raters were asked to document the percentage of lecture, discussion, group, and individual exercises that were completed (number completed out of number required by written curriculum). They identified the number of each type of exercise/activity for each module. For example, the trainer completed X out of 3 lecture components; X out of 2 discussion questions; X out of 2 group activities; and X out of 1 individual activity. All of the tools contained a comments section for each core concept and space for additional qualitative feedback at the end. See Table 2 for sample of Fidelity Assessment Tool.

Fidelity Assessment Process

Fidelity assessment data were collected through live observation of the trainings. At each stage of the development of fidelity assessment tools, observers were trained face to face in the use of the instruments. Trainer manuals were marked with the core concepts, highlighting each teaching element. The team discussed the operationalization of the Likert-type scale ratings for each concept (extent to which covered) and checked the inter-rater reliability for the fidelity assessment process. Immediate feedback was provided to the trainers, if desired. Since there are at least two trainers for every workshop the rater also documented which trainers covered each module, as well as the number of times they have trained the material. This provides for an acknowledgment of the variability based on multiple trainers (while the goal is general fidelity for entire training) and also acknowledges the role of experience in training the curriculum.

Uses of Fidelity Data

Quarterly supervision meetings are held with the WMR facilitators to discuss training implementation issues. Fidelity assessment data are used in these meetings to present areas of

needed improvement. Data are presented in aggregate in these group meetings. Written supervision materials (“Best Practice Updates”) have also been developed and disseminated based upon these data. In addition, individual supervision meetings that are also held with fidelity assessment data identify significant areas of deficit/need. Often these meetings occur immediately following the training to maximize learning. Most trainers have been very receptive to feedback and have asked for copies of the fidelity assessment tools for their preparation, as well as copies of the results at the conclusion of training.

Data are analyzed on a semi-annual basis and data on individual trainers are provided to those trainers. The reports show the extent to which each core concept was covered and the extent to which each teaching method was used across all modules. Aggregate data are provided to the entire grant team (including trainers and administrators). The data have shown generally the extent to which we have achieved training fidelity and a balance of teaching methods.

Results: Preliminary Fidelity Data for “Within My Reach”

There have been 76 fidelity assessments completed across the eight sites and 20 trainers involved with this project. The percentage of cases in which the module was thoroughly covered ranged from 57.1% for Module 14b (importance of friends and community) to 96.6% for Module 1 (high rate of divorce and impact on children). See Table 3 for percentage of cases thoroughly, partially, and not at all covered by modules in the WMR curriculum.

Lecture elements were used most often for Module 2 (three kinds of safety) at 41% and least often for Module 5 (knowing how personality and family background affect your relationships) at 18%. Discussion elements were used most often for Module 3a (love pyramid and problems with early sex) at 38.3% and least often for Module 13 (stepfamilies and fathers) at 0%. Individual activity elements were used most often for

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Module 1 (rate of divorce and impact on children) at 37.7% and least often for Modules 8 and 12 (conflict effects on children and commitment impact on children) at 0%. Group elements were used most often for Module 1 (rate of divorce and impact on children) at 37.7% and least often for Modules 7 (domestic violence), 8 (issues and events), 11 (difference between forgiveness and restoration), and 12 (how commitment impacts children) at 0%. See Table 4 for summary of teaching method data.

Discussion

As these data from the WMR project indicate, the curriculum can be implemented in a complex multi-trainer, multi-site environment with high levels of fidelity. The best practices in fidelity assessment and assurance that have been identified through this project are discussed below.

Best Practices in Training Fidelity

Take measurements from multiple sources (*self-report, observation, role play etc.*). By taking fidelity measurements from multiple sources (self-report participant and trainer along with independent observers) and methods (knowledge tests and observational coding), researchers may detect inconsistencies in the data and gain a more realistic picture on how a curriculum is actually delivered.

Include qualitative data to enlighten your quantitative data. In taking a pluralistic approach to collecting data (Sprenkle & Moon, 1996), researchers can appreciate how a broad range of methods, both quantitative and qualitative, can be systemically selected to suit specific training fidelity questions. While some questions clearly call for rigorous quantitative methods, other legitimate research questions can only be addressed through qualitative inquiry. For example, “What do facilitators and participants believe are pivotal moments in relationship enhancement training?” or “What distinguishes successful program interventions from those that were not successful?” Often this type of research is initially more digestible and interesting to the potential facilitator because of its applied nature

and descriptive focus.

Treat fidelity measurement as an ongoing process (multiple measurement occasions), not a discrete event. Rather than a one-time event or occurrence, training fidelity can be measured routinely throughout the delivery of the curriculum. By continually monitoring this construct with fidelity tracking tools, both the researcher and facilitator have the information to modify the approach and intensity, as well as respond to inconsistencies in the training process. In this respect, fidelity evaluation represents an important step in the development and ongoing modification of effective interventions.

Use fidelity data as a form of constructive feedback to trainers. By incorporating this fidelity feedback into the supervision of facilitators, curriculum developers can model how research, in addition to theory, can guide clinical decision-making and implementation. Use supervision of trainers to enhance fidelity. Merely providing an organized manual and comprehensive training before a curriculum is offered may not be enough to ensure long-term fidelity. Training integrity may be sustained through ongoing didactic and experiential training in a supervision, consultation or booster session setting. This supervision format may include relearning difficult aspects of the curriculum or reviewing recordings of coded tapes or other measures of training fidelity.

Measure fidelity in real-world, applied settings. Effectiveness studies are designed to test ecological validity. In other words, these studies help treatment developers to understand if their intervention will work in real-world, applied clinical settings. Just because a specific intervention or curriculum may be proven to be efficacious in a randomized controlled trial does not guarantee the same curriculum will be effective in practical applications with typical clinicians or facilitators in real-world settings. Among other things, RCTs use samples that are more homogeneous than the mixed diagnosis clients in most clinics. Findings that facilitators can implement curricula with high levels of fidelity in community settings are encouraging in

the context of research focused on transporting these interventions into practice.

Report fidelity data in outcome studies.

Reporting statistically and clinically significant finding has always been a priority in published outcome studies. The strength of these findings, however, should be understood in the context of relevant fidelity data. In addition to reporting outcome data, it would also be beneficial to document facilitator/therapist fidelity and the impact of fidelity on training outcomes.

Challenges

Several challenges to the fidelity assessment process have been identified. There is a need for new observers to provide fidelity assessment periodically. For example, it was discovered that some trainers were not using videos or some other teaching tools, but that the fidelity ratings were still high. This was “the way they had always done it.” An outside observer identified the problem and highlighted the need for bringing in new observers periodically.

Another challenge is examining the correspondence between fidelity assessment and other evaluation data. Although fidelity assessment showed a high degree of fidelity, the knowledge test scores were much lower for certain trainings than for others. We have attributed this to the above issue that the fidelity assessment may not have adequately captured problems in training implementation. Knowledge test data were presented to the training team and modifications in methods have been made, including the use of more of the written training methods. Subsequently, evaluation results have been much improved.

The timing of the module coverage can also present challenges in fidelity assessment. Core concepts may be covered at a later point in the training, making it difficult to track if the trainer does not “go in order” of the written curriculum or combines concepts from the modules. We have also observed that the trainers adapt to the training audience. Many begin with an assessment of participant needs and emphasize modules throughout the training that meet these needs. Fidelity assessment tools may not capture this

tailoring to the audience. This can result in a low score on the tool, but still the training was very appropriate and effective given needs of group that the trainer identified and emphasized. In these cases, the fidelity assessment must rely on the qualitative feedback.

Future Directions for Fidelity Assessment Research

Future fidelity assessment research should continue to focus on improving service delivery in real-world settings. Community agencies or other providers of manualized programs may fear that strict adherence to some aspects or modules of the curriculum might result in a failure to meet their local needs. Time constraints and the availability of facilitators, participants, and other resources may all play a role in requiring portions of the curriculum to be modified. Evidenced-based relationship skills programs like WMR are at risk of not being adopted or disseminated into applied settings if they are not designed in flexible ways to meet the needs of their audience. Learning more about the link between fidelity and outcome may help to promote intervention transportability in these real-world settings.

Collecting data on training methods is new to WMR (only collected in the most recent version of the Fidelity Assessment Tool to be implemented with fall training cohorts). The team will examine the impact of these different teaching methods on outcomes. We plan to merge data sets on the training of trainers and client training/relationship outcomes to examine any statistical relationships between training fidelity and these training methods and outcomes.

Further research is needed to examine the factors which influence fidelity of implementation, including training characteristics, participant characteristics, and community and other contextual characteristics which influence and promote fidelity of implementation. Beets (2007) found that program fidelity for a school-based health and character promotion program was related to teacher attitudes toward the program and beliefs about children’s social and character development.

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Miller & Binder (2002) also assert that there is a need for more research on the operationalization of manual-based training, trainer effects, therapist variables that mediate training, and others.

Other research should address the role of supervision in ongoing fidelity. When Baer et al. (2007) reviewed methods of monitoring fidelity to treatment protocols across multi-site addictions studies, they found that there are a wide variety of procedures, but limited data on the reliability and validity of adherence scales and a failure to evaluate supervision and retraining processes.

Fidelity assessment research provides another direction for PREP and other psychoeducational research, which has decades of evidentiary support. Concerns about these issues of training fidelity have prompted some leading relationship researchers (e.g. John Gottman) to require higher levels of accountability in training of trainers processes. To be certified in Gottman's Bringing Baby Home (Gottman & Gottman, 2007) program for new parents (a psychoeducational approach like PREP), trainers must travel to Washington to be trained by Gottman and must pass a certification exam in order to be allowed to offer training. Others require continuing education-type activities to provide their programs.

Conclusion

Training fidelity assessment offers new directions for training evaluation. For years, the assumption has been that if there is a standardized, written curriculum, there will be a consistent training intervention. Much like evidence-based practice in social work and other social sciences, there is a need for promotion of intervention fidelity in training fields. An assessment of fidelity of implementation allows researchers to identify what has been changed in a curriculum and how changes impact outcomes. Training fidelity data may increase the external validity of curriculum delivery and aid the modification of training protocol by program developers and administrators. Policymakers, researchers, and practitioners alike need these data to assess the generalizability of findings, to

determine the feasibility of interventions, and to develop "best practice" training guidelines.

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