

12-Month Follow-up of the Effectiveness of the Transtheoretical Model of Change in
Youth Prejudice Reduction

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Abstract

The current study compared the 12-month effects of two approaches to follow-up with youth who had participated in a short-term out-of-school residential program to increase diversity acceptance, community involvement and identity development. One approach was structured and guided by the Transtheoretical model of change, the other was unstructured follow up. Results document an overall decline in the program's target variables at 12-month follow-up with no significant differences between follow-up approaches. These findings are discussed in the context of the study's limitations and directions for future research and practice are provided.

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Introduction

A lot of resources are invested in out-of-school programs that foster positive outcomes in school-aged children and youth, such as academic achievement and drug resistance. For example, in 2000 and 2001, Congress budgeted approximately 1.3 billion dollars for schools to provide various out-of-school programs (National Research Council 2002). Because so many resources are spent on these programs, it is vital to know if they work. Programs are not often supported by research findings, a disconnect known as the research-to-practice gap (Jansson, M. et al. 2010). Research and practice must be more closely integrated for youth to have effective programs (Jansson, M. et al. 2010; The National Research Council 2002).

One of the main problems that is created by the research-to-practice gap is that there are a lot of research-based interventions that are not available in communities (Jansson, M. et al. 2010; The National Research Council 2002). For example, the Transtheoretical Model of Change (TTM) is a research-based approach to intervention that is not often applied in work with youth. The Model “uses... stages of change, to integrate processes and principles of change from different theories of intervention” (Prochaska, J.O. & Velicer, W.F. 1997, pp.283). It incorporates ten processes of change and five stages to guide interventions. The Model matches processes to the stage in behavior or attitude change that a person is at. For example, there is a contemplation stage during which the person is intending to change in the next 6 months (Prochaska, J.O. & Velicer, W.F. 1997). If people are in the contemplation stage, a therapist could

give them resources about how to take action. The Transtheoretical Model of Change has not often been used in out-of-school youth programs.

Anytown™ is a specific out-of-school program for youth that was developed by the National Conference for Community and Justice. It is a week-long residential program that—among other objectives—seeks to increase participants’ positive intergroup attitudes and behaviors, increase participants’ community involvement, and to foster identity development (Acevedo-Polakovich & Ashburn-Nardo, 2013). To date, research findings document short-term pre-to-post changes in measures of each of these variables (Acevedo-Polakovich & Ashburn-Nardo, 2013). Emerging research has shown that Anytown™ staff can be trained to use the Transtheoretical Model of Change to follow up with program participants (Parent, 2013); however, no research to date has examined the effects of such follow up on program outcomes (I.D. Acevedo-Polakovich personal communication, March 13, 2013). The current study examines whether following up with Anytown™ participants using the Transtheoretical Model of Change has any improved effectiveness compared to an unstructured follow up traditionally used by the program.

Method

Participants

Participants were recruited from the 161 youth who took part in the Anytown™ program during the summer of 2012. Attempts were made to contact all of these youth to participate in a 12-month follow-up survey. Youth were first contacted by an Anytown™ program volunteer using the most up-to-date e-mail from program records. One week after the e-mail had been sent, the Anytown™ program volunteer re-contacted the youth,

this time using the most up-to-date phone number for each participant. If participants were reached, the volunteer inquired whether a young person had received the original e-mail and—if so—whether he/she had been able to complete the survey. If the youth had not received the e-mail, the volunteer then provided the potential participant with the address to the link where the survey could be completed. One week after the original phone call, one more attempt to reach all youth by phone was made. Seventeen participants were engaged into the study in this manner, representing 10.5% of the target sample.

Measures

Diversity acceptance. All youth were asked to complete the *Youth Diversity Acceptance Scale-Revised* (YoDA; Acevedo-Polakovich et al., 2013). This is a nine-item measure of how comfortable and open the participants are with interacting with other people from out-groups. The YoDA includes cognitive, affective, and behavioral measures of these attitudes and behaviors on a 5-point Likert type scale ranging from “Never” to “Very Often.” Cronbach's alphas from previous studies have been in the range of 0.67 to .70 (Acevedo-Polakovich et al., 2013).

Community involvement. All youth were asked to complete a 12-item *Youth Inventory of Involvement, Abridged* (YII; Pancer, 1997). A 5-point Likert type scale from “Never” to “A lot” was used to examine the prosocial behaviors of participants. The YII included behaviors such as church participation or community service. The shorter 12 item version was created by choosing the measures that were determined by Community Tampa Bay to be the most relevant to their particular program. The original YII included

30 items with Cronbach's alpha values ranging from 0.90 (Pancer, Pratt, & Hunsberger, 2000) to 0.92 (NCCJ, 2003).

Collective identity. All youth were asked to complete the *Collective Identity Scale* (CIS; Cheek, Smith, & Tropp, 2002). The CIS included eight-items measured by participant's self report on a five point Likert-type scale ranging from 1 ("not important to my sense of who I am") to 5 ("extremely important to my sense of who I am") The CIS determines how important certain aspects (eg. religion) are to the participant's sense of self. This measure has shown moderate internal validity, (e.g., Cronbach's $\alpha = .68$)(Cheek et al., 1994). Internal Validity is estimated to be higher, $\alpha = .85$ at pretest and $\alpha = .81$ at post-test.

Procedures

After participating in Anytown during summer of 2012, each participant was assigned to one of two groups. Group 1 received the usual follow-up conducted by Anytown. This consisted of monthly attempts by one of the Anytown™ staff members to contact the participant and engage in unstructured dialogue about how to best foster community change. Group 2 received a follow-up based on the Transtheoretical Model of Change. This follow-up consisted of personnel assessing the participant's stage of change and then providing suggestions and feedback based on the participant's stage.

Results

Descriptive Statistics

Table 1 provides the means and standard deviations on each of the study variables by time and group. As can be seen diversity acceptance was higher for the TTM based-follow-up at 12 months, even though the TTM scored lower at time one. Diversity

acceptance declined from time one to time two for all follow-up conditions. Involvement scores were initially higher for the TTM follow-up, but were lower at time two.

Collective Identity scores for the TTM follow-up were lower at both time one and time two.

Variable Name <i>Follow-up condition</i>	T1 (M, SD)	T2 (M, SD)	N
Diversity Acceptance			
<i>Usual Follow-up</i>	4.64 (.36)	2.28 (.40)	4
<i>TTM Follow-up</i>	4.54 (.30)	2.57 (.27)	9
Involvement			
<i>Usual Follow-up</i>	2.94 (1.44)	1.90 (.80)	4
<i>TTM Follow-up</i>	3.04 (1.36)	1.33 (.53)	4
Collective Identity			
<i>Usual Follow-up</i>	3.67 (1.04)	2.15 (.23)	4
<i>TTM Follow-up</i>	3.21 (.83)	1.99 (.56)	13

Main Analyses

Sphericity testing. Before analyzing data using a repeated measures analysis of variance (RM-ANOVA), data were examined for their ability to meet one of the primary underlying assumptions of this approach, sphericity, which is the assumption that the variance/covariance matrix generated by the data is one with equal variances in the diagonal, and equal covariance in the off-diagonal elements. If sphericity is observed, the RM-ANOVA procedure provides a powerful test about repeated measures. Sphericity was examined by Mauchly's Test, which was non-significant in all cases. This suggested that the observed matrix has approximately equal variances and equal covariances and, thus, that an uncorrected RM-ANOVA F-test is appropriate.

<i>Effect</i>	<i>MS</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>pη²</i>
Time	25.90	1	395.79	<.001	.97
Time x Follow-up	.21	1	3.20	.101	.22
Error	.06	11			

Diversity acceptance. Table 2 summarizes the results of a RM-ANOVA examining the effects of time and follow up condition on diversity acceptance. As can be seen, there is a significant change in diversity acceptance over time, $F(1, 11) = 395.79$, $p < .001$, $p\eta^2 = .97$. Additionally, the interaction between time and follow-up condition approached the statistical trend level, $F(1, 11) = 3.20$, $p = .101$, $p\eta^2 = .22$. Because the interaction approached the statistical trend level, it was plotted in Figure 1 in order to aid interpretation. As can be observed, in the context of an overall decline in diversity acceptance from time one to time two, the non-significant difference between follow-up conditions at time one increases toward a trend by Time two suggesting that—although both groups experience a decline in YoDA scores—the decline may be more pronounced for traditional follow up.

<i>Effect</i>	<i>MS</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>pη²</i>
Time	7.56	1	8.11	.029	.58
Time x Follow-up	.44	1	.48	.516	.07
Error	.93	6			

Involvement. Table 3 summarizes the results of a RM-ANOVA examining the effects of time and follow up condition on involvement. As can be seen, there was a significant decline involvement over time, $F(1, 6) = 8.11$, $p = .029$, $p\eta^2 = .58$. Although

the time by condition interaction was clearly non-significant, $F(1, 6) = .48, p = .516, p\eta^2 = .07$, its associated effect size was close to Cohen's standard for medium and the pattern suggested that the decline may be more pronounced for TTM follow up.

<i>Effect</i>	<i>MS</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>pη^2</i>
Time	11.47	1	39.04	<.000	.72
Time x Follow-up	.14	1	.46	.506	.03
Error	.29	15			

Collective identity. Table 4 summarizes the results of a RM-ANOVA examining the effects of time and follow-up condition on involvement. As can be seen collective identity significantly declined over time, $F(1, 15) = 39.04, p = <.000, p\eta^2 = .72$. Although the data suggested a reduced rate of decline for the TTM condition in comparison to traditional follow-up, this difference was not statistically significant and its associated effect size fell somewhere between small and medium according to Cohen's standards.

Discussion

This study is evidence for the need for further research. There was a significant decline in all measures, diversity acceptance, involvement, and collective identity from time one to time two. The TTM follow-up was correlated with less decline only on the measure of diversity acceptance, leading to mixed findings on the effectiveness of the follow-up. Limitations of the study and different possibilities of the results being both correct and incorrect will be discussed.

The main finding of this research was that all items experienced significant decline. This is consistent with research of Poteat (2007) that suggests that youth experience an increase in homophobic attitudes as they age. More research is needed to examine if they experience an increase in other prejudicial attitudes that Anytown™ targets. However, cautions on this first interpretation are warranted because of the limitations of the study. Limitations include a small sample size and a novel history of the measurement techniques.

The second main finding was that there was no significant differences between follow up conditions. It is possible that both approaches might be effective at reducing decline compared to a normal youth population, but since we do not know what patterns look like in the general population, we do not know if this is the case. Future research is needed to identify normal patterns and compare them with patterns from Anytown™ participants in all follow-up conditions.

It is also possible that both approaches are ineffective at prejudice reduction. A meta-analysis by Degner and Dalege (2013) found evidence that child and parent attitudes are linked through their adolescent and childhood years. This has important implications for Anytown™. To effectively help reduce prejudicial attitudes in youth they may now have to target parental attitudes in addition to the participant's attitudes. If Anytown™ does not target these additional influences it can be difficult to sustain long-term changes.

Another study limitation is the fidelity to TTM follow-up implementation. Volunteers may or may have correctly followed their TTM follow-up training. Therefore,

we do not know if it actually looked any different than traditional. Fidelity measurement should be a part of future research.

The not significant conclusion may be incorrect because the numerous limitations of this study prevented us from detecting an effect that would actually be present. Although limitations are discussed later, some support for the “incorrect” hypothesis would be that the one effect that approached trend level, diversity acceptance, favored the TTM follow-up. Although the reduced decline of the TTM in collective identity was not significant, it suggests the potential benefit of the TTM.

There are multiple limitations of this study. The first is a low N of 17 participants, which leads to limited representativeness of the original participants. The second limitation is the lack of a control group of youth outside of the Anytown™ program. Further studies should compare the effects of the program to others who did not receive any form of exposure to the program. The Anytown™ program did not reduce prejudice over time, but participants may not have become as prejudiced as they would have without the program.

The last problem is the items measured – collective identity, involvement, and diversity acceptance – do not have an extensive history of measurement. It is possible that the way we measured them might not be appropriately sensitive to changes. Prejudice reduction is a social measure that can be difficult to quantify. One direction for future research could be qualitative research. Following up with participants months or years after the program’s end with questions regarding how they felt they changed after the program, what worked with the program, and how it can be improved might be a better way to assess the program’s effectiveness.

In Conclusion, the results do not support the TTM based follow-up as better; however, the limitations of the study prevent us from making strong conclusions. More, better, research is needed to examine the overall effectiveness of the program. One clearly important focus of future research would be to consider the strong documented effects of parents, peers, and media on the types of outcomes targeted by Anytown™. Programs like Anytown™ are valuable to society, but further research is needed to make it an effective program based on research.

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Figure 1. Interaction between time and group in the prediction of diversity acceptance.

