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Investigating the Effectiveness of a Motivational Interviewing

Group on Academic Motivation

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Abstract

This randomized controlled trial examines the effectiveness of a motivational interviewing (MI) group on the academic motivation of students at an alternative school ($N = 43$). Findings demonstrated that MI groups are effective in increasing extrinsic motivation, whereas both the waiting list control and study skills comparison group did not demonstrate statistical significance. The findings of this study have several implications for school-based motivation enhancement interventions.

Keywords: school counseling, motivational interviewing, academic motivation, at-risk youth

Investigating the Effectiveness of a Motivational Interviewing Group on Academic Motivation

High School completion is significantly correlated with further educational attainment, labor force participation rates, employment rates, as well as crime, poverty, and health (Gunn, Chorney & Poulsen, 2009; Maynard, Kjellstrand, & Thompson, 2014). According to the National Center for Education Statistics (NCES; 2015), on average, 3.4 percent of students enrolled in high school in 2011 did not return to school in 2012. Even though the public high school dropout rate decreased from 12 percent in 1990 to 7 percent in 2013, there are gaps in learning behaviors, knowledge, and skills among children in various racial/ethnic groups and socio-economic groups. High school students who are male, Black or Hispanic, living in low-income families, between 15-16 years old are at a greater risk for dropping out of high school (NCES, 2015). These statistics represent a significant need for research on the academic motivation of at-risk high school students.

Alternative School Settings

According to Simonsen, Britton, and Young (2010), when students are placed in alternative school settings, the focus is on improving student behavior and providing an appropriate educational setting. However, research has shown negative and detrimental effects related to being placed in the alternative setting. Given these outcomes, investigations are needed to examine which interventions will positively support students who are placed in alternative education settings.

The factors used to identify youth at-risk include academic failure (76%), truancy of excessive absences (64%), and behaviors that warrant suspension or expulsion

(45%; NCES, 2010). At-risk students typically receive tutoring, summer school, remediation or credit recovery courses, smaller class sizes, early graduation options, mentoring, formal programs designed to reduce behavioral problems, and intervention from community agencies such as department of social services, community mental health agencies, churches, and local government agencies (NCES, 2011).

Many at-risk students are also sent to alternative schools to help address their needs. This is particularly true for high school students. Seventy-six percent of high school students who exhibit at-risk behaviors are referred to an alternative school to help with high school completion (NCES, 2011). Students who transfer to alternative schools present unique challenges for teachers and school counselors, due to their history of physical violence, substance abuse or possession, disruptive behavior, and chronic truancy (NCES, 2015). School counselors are charged with developing strategies that help these students work through these difficult circumstances while maintaining focus on their academics. However, increasing student motivation can be complex and difficult, especially when students are struggling with a host of other stressful concerns (e.g., substance use, physical abuse, transitioning to alternative school). Moreover, research has shown that students in alternative school settings perceive their parents to be less involved, less likely to be supportive, less likely to listen or to ask about school when compared to regular and special education students (Simonsen et al., 2010). Given these concerns, research is needed to explore the effectiveness of interventions with students in alternative school settings.

Student Motivation

Research on what motivates students to learn has identified various external factors including grades, money, academic competition, and learning goals (Lei, 2010). However, motivation based solely on external factors has limitations. For example, grades are only a reliable source of motivation for high achievers and “A” students compared to the rest of the students (Kuh, 2007). Money when used as extrinsic motivators led to a decrease in intrinsic motivation and was only effective when student had to exert minimal effort (Lee, McInerney, Gregory, & Ortiga, 2010). Additionally, extrinsic motivation tends to cease once the reward is no longer offered and may lead to low self-esteem and anxiety when the rewards or prize are not obtained (Lei, 2010; Sotak, 2016). Alternatively, intrinsic motivation has been found to be a more reliable predictor of students’ behavior. Intrinsic motivation occurs when people perform an action or behave in a certain way despite external rewards (Deci & Ryan, 1985). Intrinsic motivation theories propose that people act in particular ways because they derive enjoyment or some satisfying internal feeling and not because they are being rewarded by an external reward or prize (Deci & Ryan, 1985). Research shows that intrinsic motivation has a significant impact on the achievement of academic goals in at-risk students. Dike (2012) found that self-determination, curiosity, autonomy, sense of purpose, satisfaction, feelings of competency, and interest were strong predictors of academic achievement in at-risk high school students.

School counselors and educators employ various programs to improve achievement, attendance, engagement, and behavior for students at risk of dropout (Maynard, Kjellstrand, & Thompson, 2014). Previous research identified teacher-student

relationships as important for the learning process and outcomes of students who are at risk of failing (Roorda, Koomen, Split, & Oort, 2011). Additionally, solution-focused alternative school settings are deemed as effective interventions for the prevention of high school dropout (Franklin, Streeter, Kim, & Tripodi, 2007). Studies have explored the experiences of alternative high school students and what influences their achievement and learning. These studies identified that positive emotions and relationships support successful learning whereas negative ones hinder it (Borup, Graham, & Davies, 2013; Phillips, 2013; Poyrazli et al., 2008; Estell & Perdue, 2013). Research also shows that affective engagement (e.g., attitudes towards school) mediates behavioral engagement such as absenteeism, homework completion, and class participation. These studies provide the foundation for future research on student motivation, but there is a lack of research on specific relationally-based intervention strategies that school counselors can employ to increase academic motivation. Previous research has examined motivation to help explain high school dropout rates. This perspective brings to light the issue that a student's decision to drop out of school is not based on academic achievement, but rather, their motivation to stay in school (Hardre & Reeve, 2003).

Motivational Interviewing in Schools

Motivational interviewing (MI) is a client-centered, non-judgmental approach to individual or group counseling for the purposes of exploring and resolving ambivalence and increasing motivation to change (Miller & Rollnick, 2013). Miller and Rollnick (2013) define MI as "a collaborative conversation style for strengthening a person's own motivation and commitment to change" (p.12). Motivational interviewing was built on the

assumption that ambivalence is a normal part of preparing for change and that people are motivated by what they hear themselves say and not what others direct them to do. MI's style is one of guiding the individual to exploring his/her own motivation to change. It is a partnership between client and counselor and is built on the foundations of acceptance of one's individuality and absolute worth, empathy, support for autonomy, compassion, affirmation and evocation of the individual's unique strengths (Miller & Rollnick, 2013). MI emerged in the context of addiction treatment and has been widely used for over three decades, but it also demonstrates effectiveness for non-addiction related concerns as well (Young, Gutierrez, & Hagedorn, 2013). Several meta-analyses have documented strong empirical support for the effectiveness of MI with adults in addressing a variety of issues including alcohol and drug use, tobacco use, risky behaviors, and medication and treatment adherence (Frey et al., 2011).

Only recently has the use of MI expanded to academic settings. Shinn & Walker (2010) advocated for systemic, multitier, evidence-based approaches in schools for promoting positive student outcomes. These interventions should include emotional, social, behavioral, and motivational elements and be designed not only for students but also for parents and teachers (Shinn & Walker, 2010). In schools, motivation enhancing interventions and MI have been used as a basis for a peer support program (Channon, March, Jenkins & Robling, 2013), reducing school truancy rates among adolescents (Enea & Dafinoiu, 2009), and reducing alcohol and drug use among at-risk high schoolers (D'Amico et al., 2012; Sussman, Sun, Rohrbach & Spruijt-Metz, 2012). Several studies have focused on the use of MI in promoting academic achievement among urban youth (Kittles & Atkinson, 2009; Simon & Ward, 2014; Strait, Smith,

McQuillin, Terry, Swan & Malone, 2012). Kittles & Atkinson (2009) found that MI was helpful in allowing students to think about their behavior and make positive changes. Strait et al. (2012) tested the efficacy of MI for promoting academic achievement in middle school students and found even a single MI session can have beneficial effects in class participation, positive academic behavior and higher grades. This study was replicated twice with results suggesting that two rounds of MI are more effective than one in improving math grades in a sample of middle schoolers (Terry, Smith, Strait & McQuillin, 2013; Terry, Strait, McQuillin & Smith, 2014). However, studies examining the effectiveness of MI on academic motivation are limited. There is a clear gap in our knowledge of the impact of MI on motivation, especially with high school students. Additionally, even though groups have been found to be helpful interventions with high school students (Bemak, Chung & Siroskey-Sabdo, 2005; D'Amico et al., 2012; D'Amico et al., 2014), the effectiveness of *MI* groups with this population in academic settings needs further investigation. Previous research has examined the quantity of academic motivation, but few studies explore the type of academic motivation being influenced.

The purpose of this study is to examine the impact of an 8-week MI group intervention with alternative high school students. This study compares an MI group intervention with a study skills comparison group, and a waiting list control group to explore the efficacy of using MI as an intervention for academic motivation. We hypothesize that there will be a statistically significant higher level of academic motivation for students in the MI group than the study skills or waiting list control group.

Method

Participants

This research project is the product of a community partnership with a local Performance Learning Center (PLC). The PLC is a non-traditional high school catering to students who are unsuccessful in their traditional home school. After receiving the necessary permissions from the Institutional Review Board, the research team, in collaboration with the PLC, began the recruitment process. PLC social work staff selected students within their program that would benefit from the motivational enhancement groups based upon their academic reports. The research team, using randomizer.org, randomly assigned these students ($N = 45$) to one of the three groups: (a) motivational interviewing, (b) study skills development, or (c) a wait list control. Two students were unable to complete the study due to issues not related to the study. A G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) a priori power analysis estimating for .8 power and a medium effect size of .3, and three measurement points indicated that 39 participants was a sufficient sample size for the selected analysis. Therefore, we determined that a sample of 43 was appropriate for our analysis.

Of the 43 students, 28 (62%) identified as female and 15 (33%) as male. In terms of ethnicity, 4 (9%) reported they were African American, 3 (7%) as Hispanic/Latino, 2 (4%) as Native American, 4 (9%) as multi-racial, and 30 (67%) as Caucasian. The age of participants ranged from 14 to 19, with an average and modal age of 17 ($N = 17$, 38%). When asked if they intended on going to college after high school, 9 (20%) reported no, 18 (40%) reported yes, and 16 (36%) reported "I don't know."

Instruments

The primary construct under investigation is academic motivation. Students completed the Academic Motivation Scale High School Edition (AMS-HS) at three points during the intervention. Students also completed a demographic profile form developed by the research team for this study prior to beginning treatment.

Academic Motivation Scale High School Edition (AMS-HS). The Academic Motivation Scale High School Edition (Stover, De La Iglesia, Boubeta, & Fernández Liporace, 2012) is a 28 item assessment that measures the motivation of high school students. The AMS-HS is based on self-determination theory (Deci & Ryan, 2012) which emphasizes the qualities and quality of motivation and not just the quantity of motivation (Silva, Marges, & Teixeira, 2014). The AMS-HS has seven subscales: (a) intrinsic motivation towards knowledge; (b) intrinsic motivation towards accomplishments; (c) intrinsic motivation towards stimulating experiences; (d) extrinsic motivation identified; (e) extrinsic motivation introjected, (f) extrinsic motivation regulated, and (g) amotivation. The intrinsic motivation subscales focus on self-determined motivation where the individual is motivated by the pleasure of executing the activity; and, the extrinsic motivation subscale emphasizes motivation that is driven by goal or reward seeking. Extrinsic motivation is either delimited by external regulation, where behaviors are motivated and enforced by outside forces, introjected regulation, where individuals are motivated to increase their self-esteem or avoid anxiety, or identified regulation, where the individual selects to carry out behaviors based upon values assigned by extrinsic sources, such as “my parents say that education is important” (Stover et al., 2012). The amotivation subscale measures the lack of

intention towards motivation. Previous research found the AMS-HS to be a valid and reliable measure of student motivation (Grouzet, Otis, & Pelletier, 2006; Haslofça & Korkmaz, 2016; Stover et al., 2012; Vallerand et al., 1992). In our sample, the AMS-HS demonstrated excellent internal consistency with Cronbach Alphas of .92 (Streiner, 2003).

Demographic questionnaire. Students completed a brief demographic questionnaire that was developed by the research team. The questionnaire consisted of four questions. Specifically, students reported ethnicity, gender, age, and if they planned to attend a four-year college after graduation.

Procedure

This study is a randomized-controlled trial. The research team randomly assigned students to either a motivational interviewing group, a study skills group, or a wait list control group. Counselor education doctoral students trained in the intervention facilitated the social skills and motivational interviewing groups over the course of eight weeks. The motivational interviewing group received a semi-structured motivational interviewing intervention that focused on increasing change talk, setting personal goals, prioritizing, empowerment, and preparing for success. The facilitators of the MI group attended a one-day motivational interviewing training carried out by a trained facilitator. The training consisted of a comprehensive discussion on the spirit of motivational interviewing and experiential activities that allowed for participants to practice using MI skills. Additionally, they were given a series of MI videos to watch as they prepared for the intervention and provided group supervision by counselor education faculty. The study skills structured group focused on study and test taking skills, organization, and

time management. This group was primarily psychoeducational. Attendees of the study skills group learned strategies associated with academic success and used the group as an opportunity to practice those skills. The final group was a waiting list of students who received the motivational interviewing intervention later in the semester. These students served as a control group. All students completed the AMS-HS prior to the first session, after the fourth session, and after the final group session. Additionally, participants completed the demographic questionnaires at the first session.

Results

Preliminary Analysis

To answer the research questions, the researchers employed a repeated measures multivariate analysis of variance (RM-MANOVA) using SPSS 22. RM-MANOVA is an appropriate analysis to investigate the differences in group trends (Tabachnick & Fidell, 2013). Preliminary analysis of the data was conducted to ensure all statistical assumptions were met. A visual inspection of histograms and an analysis of extreme values revealed three outliers present. Researchers removed these outliers to protect the integrity of the analysis. Additionally, an analysis of missing data revealed that less than 7% of the data were missing. Little's MCAR test indicated that the missing values were missing at random and ignorable (Tabachnick & Fidell, 2013). Likewise, two of the variables, extrinsic motivation external and intrinsic motivation towards stimulating, had non-normal distributions at baseline per the Kolomogrov-Smirnov test of normality. Fortunately, repeated measures MANOVA are robust to non-normal distributions and it is common for data with samples larger than 30 to become non-normal (Tabachnick & Fidell, 2013). To examine the equivalency of the groups at

baseline, the researchers conducted a series of univariate ANOVAs on the demographic variables. The findings indicated no statistically significant differences on age ($p = .991$), ethnicity ($p = .668$), and gender ($p = .887$). These findings indicate that all groups had a similar demographic representation at the start of the intervention. Lastly, Box's test of homogeneity was consulted to determine the best criteria for interpretation (see Tabachnick & Fidell, 2013).

Findings

Results of the RM-MANOVA with the subscales for intrinsic motivation - intrinsic motivation towards knowledge, intrinsic motivation towards accomplishments, and intrinsic motivation towards stimulating experiences – revealed no significant interaction between time and group, Wilks' $\lambda = 1.14$, $F(12,60) = .672$, $p = .350$. Further, although there was change within each group, the results did not find statistically significant change over time $p = .302$. Due to the lack of significance in the main multivariate effects, the researchers concluded the analysis here and moved on to extrinsic motivation.

On extrinsic motivation, results did indicate a significant interaction between time and group, Wilks' $\lambda = 464$, $F(12,58) = 2.261$, $p < .025$ (p -value adjusted using Bonferroni's correction). The data also demonstrated a partial η^2 of .30 indicating a large effect size (Cohen, 1988). Specifically, the interaction between time and group accounted for 30% of the variance. Consultation of the univariate test revealed that although several of the motivation regulation styles trended towards significance (e.g., Extrinsic Motivation Identified had a P value of .068), only extrinsic motivation external regulation was statistically significant, $p < .01$ with partial η^2 of .19, which is considered a

moderate to large effect size (Cohen, 1988). For a summary of these findings consult Table 1. Pairwise comparisons demonstrated that the significant difference occurred between the motivational interviewing group and the wait list control with a mean difference of 3.16. The study skills group was not significantly different than the waiting list control group and had a negative relationship with the MI group. Students in the study skills group decreased in motivation from time 1 ($M = 25.18$) to time 3 ($M = 21.83$).

Discussion and Implications

Few studies have examined the use of motivational interviewing (MI) in school settings. However, no studies have examined the use of MI with students in alternative schools. Therefore, this study aimed to fill this gap in the literature. Results indicated that participants ($n = 18$, or 40%) reported they intended to attend some sort of post-secondary education. These findings are encouraging given students who are in alternative settings are typically at risk of dropping out (NCES, 2011). Furthermore, given the unique challenges that students in alternative settings typically face, the findings suggest that this population continue to have promising futures.

Table 1

Main Effects of RM-MANOVA

Effect	λ	F	$df1$	$df2$	p	Partial η^2
Group	.70	2.12	6	64	.06	.17
Time	.80	1.22	6	29	.32	.20
Time * Group	.46	2.27	12	58	.02	.32

Intrinsic motivation was not found to be statistically significant in this study.

These findings are important to consider given that intrinsic motivation has been found

to be a more reliable predictor of students' behavior (Deci & Ryan, 1985). Considering the self-determination theory premise, that three basic psychological needs of competence, relatedness and autonomy need to be met in order to achieve intrinsic motivation (Deci & Ryan, 2012), these results are not surprising. This intervention was 8-weeks and given the population, there may not have been sufficient time to develop the three basic psychological needs required to increase intrinsic motivation.

This study found evidence that MI impacts extrinsic motivation over time. These results are noteworthy considering in an initial study by Strait et al. (2012) found that a single session of MI to be effective in promoting academic achievement in middle school students. However, after two replication studies, two rounds of MI proved to be more effective than one in improving math grades in a sample of middle schoolers (Terry et al., 2013, 2015). Therefore, this study supports earlier findings that multiple sessions of MI prove to be more effective.

Previous research has also found that students tend to be externally motivated (Lee et al., 2010). The present study supports this notion by demonstrating that extrinsic motivation (external regulation) was statistically significant but not intrinsic motivation. The influence of the motivational interviewing group on extrinsic motivation but not intrinsic motivation seems counterintuitive to the theoretical premise of motivational interviewing, which is primarily focused on the client experiences, desire and capacity for change. However, the results make sense given the context of the school setting where grades, money, academic competition are all considered as external factors (Lei, 2010). However, when considering the alternative school population, these findings are contrary to Kuh's (2007) who indicated grades are only a reliable source of motivation

for high achievers and “A” students compared to the rest of the students. To further understand the mechanisms that mediated and moderated the efficacy of the MI group on intrinsic and extrinsic motivation more research is warranted, but these results do show promise that an MI group used with at-risk youth will have some effect on motivation.

When considering the type of group intervention, there was significant difference between the MI group and wait control group. One explanation is that the students became motivated once they knew they would receive some type of small group support, whereas the wait control group had no support from an adult. These findings align with Dike’s (2012) study who found that teacher and principal factors such as high levels of interest, passion, caring, and commitment supported the development of intrinsic motivation in students. However, motivation scores for the study skills, which also had adult support, decreased over the three measurement points, suggesting that adult support is critical but that the type of support intervention also plays a role in the effectiveness of an intervention.

Based on the present study, there are several implications for practice. First, the results from this study suggest that MI can be an effective intervention to increase academic motivation with at-risk students. Specifically, the student’s increase in extrinsic motivation, external regulation could allow for students to set goals that could lead to academic achievement. Second, this study also supports the use of MI in alternative school settings where students are more likely to experience chronic truancy, physical violence, substance abuse, or disruptive behavior (NCES, 2015).

Another implication is for specific school counseling practice. Motivational interviewing can be used as a brief small group intervention. Given the large school counselor to student to ratios, offering small group counseling services to students with similar concerns can be an effective use of time. Small groups are also considered a tier 2 intervention which are supported by the American School Counselor Association (ASCA, 2014). Furthermore, this type of intervention supports the need to use more evidenced based strategies in schools (Dimmett, Carey, & Hatch, 2007). School counselors can also use MI to examine how this type of intervention effects important student outcomes such as grades, GPA, attendance, and behavior.

Limitations and Future Research

One strength of this study was the randomized controlled research design which aimed to reduce bias when testing the effectiveness of MI in an alternative school setting. However, with this type of research, there are threats to external validity. First, the intervention was conducted in one alternative high school in a Southeastern state and majority of the participants were Caucasian. The results may not be generalized to other students in other regions or types of schools. Second, the students who were in this study may have been already somewhat motivated given they are attending the alternative school to achieve a goal of receiving a high school diploma.

Based on these limitations, there are some considerations for future research. First, we recommend replicating this study in other parts of the United States and different types of schools such as traditional, magnet, and early college. Second, we recommend a longer intervention with at-risk students, to determine if time can impact

intrinsic motivation. Third, this intervention was conducted with high school students, and research could be conducted with younger populations.

Conclusion

Alternative schools have traditionally served students at-risk of dropping out. Unfortunately, many students in these settings experience a history of physical abuse, substance abuse, and disruptive behaviors. Consequently, each of these factors can potentially have a negative impact on one's academic motivation. The present study was aimed at providing a small group intervention that would increase academic motivation, thereby increasing the likelihood of high school completion. The findings of this study are promising for educators and school counselors as there are indications that at-risk students do have goals of earning a post-secondary education and are capable of being academically motivated.

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