A Customized Transportation Intervention for Persons with Visual Impairments

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Abstract

Introduction: Transportation can be an employment barrier for persons with disabilities, particularly those with visual impairments. A Customized Transportation Intervention for persons with visual impairments, based on concepts associated with customized employment, was devised, implemented, and evaluated.

Methods: A pretest/posttest intervention/comparison group design evaluated changes in participants' social problem-solving skills, transportation self-efficacy, and transportation knowledge. Participants worked with a transportation coordinator to plan and secure work-related transportation. Surveys assessed participant satisfaction with the intervention.

Results: The intervention group had significantly higher scores for social problem-solving skills at posttest after considering pretest scores. The intervention group responded favorably to measures of satisfaction with the intervention.

Discussion: The Customized Transportation Intervention had a positive impact on social problem-solving skills and participants were satisfied with the intervention, though the impact of the intervention on employment outcomes remains unclear. Attrition in the study and lack of a random sample mean the results must be interpreted with caution.

Implications for Practitioners: Engaging persons with visual impairments in discussions about transportation to work may educate them about new options or assist them in thinking of unexplored options. Persons who appear to have good problem solving skills and confidence in their abilities may still benefit from these discussions.

A Customized Transportation Intervention for Persons with Visual Impairments

Because transportation is an integral component of obtaining and maintaining employment, some employers ask job applicants if they have reliable transportation. People with and without disabilities use many of the same transportation methods to get to work but persons with disabilities are almost twice as likely to lack transportation as those without disabilities (Kessler Foundation/National Organization on Disability, 2010), which negatively impacts their participation in employment (U.S. Department of Transportation, 2003). Those who are visually impaired (i.e., persons who are blind or have low vision) have identified transportation as a barrier to employment (Crudden & McBroom, 1999; Gold & Simson, 2005; McDonnall, 2011), as have their state vocational rehabilitation (VR) counselors (Crudden, Sansing, & Butler, 2005). This study investigated an attempt to assist persons with visual impairments in planning and securing work-related transportation. A Customized Transportation Intervention was devised and implemented based on strategies used in the customized employment approach to job placement.

Transportation and Visual Disability

The two most prevalent means of transportation, driving and public transit, have particular problems for persons with visual impairments. Some people with low vision are able to drive and may do so with assistance from bioptic devices but their driving time, speed, or route may be limited by fatigue, glare, weather conditions, etc. For the majority of persons with the most severe visual impairments and blindness, driving is not an option.

Two studies (Corn & Sacks, 1994; Crudden, McDonnall, & Hierholzer, 2015) that included questions about how people with visual impairments traveled to work found that public transit was the most common method, with both finding that 41% of the respondents relied on it. However, public transportation can be problematic. Public transportation users with visual

impairments have reported that despite the requirements of the Americans with Disabilities Act of 1990, drivers may fail to call out stops (Rosenbloom, 2007) or that using public transportation is difficult, inconvenient, unsafe, or unreliable (Crudden, et al., 2015). Lack of or inaccessible environmental cues, such as maps or signs, associated with public transportation cause some people with visual impairments to limit their activities (Marston & Golledge, 2003). Despite these problems, some choose where to live based on availability of public transportation (American Council of the Blind, 2003). Public transportation is typically not an option for persons in rural areas as it tends to be underfunded and limited or nonexistent.

A recent survey of persons with visual impairment found that over one-third (38.1%) of the respondents had turned down a job because of transportation concerns (Crudden, et al., 2015). This is consistent with previous research that found some people with visual impairments abandon seeking employment or turn down jobs due to lack of transportation (Bjerkan, Nordtømme, & Kummeneje, 2013). Others with visual impairments resolve employment transportation needs by using public transportation, walking, riding with family members, carpooling, using cabs, or hiring drivers (Crudden, et al., 2015). Some negotiate rides and reduced fees with cabs and other transportation providers (Crudden, 2015).

Some issues concerning access and use of transportation are addressed by VR counselors or O&M specialists. For example, VR counselors typically obtain O&M evaluations and arrange instruction to teach safe and efficient travel skills. O&M specialists, as well as VR counselors, may discuss transportation with consumers, including use of public transit and completing applications for paratransit, but the focus of O&M instruction is typically travel and mobility skills rather than identifying and negotiating employment related transportation (Crudden, 2015). Counselors might also authorize payment for transportation for a defined period for consumers

who become employed and, depending on the particular counselor, discuss the importance of dependable transportation in maintaining employment.

Although O&M specialists and VR counselors are aware that persons with visual impairments encounter barriers in securing work related transportation, neither of these professions is specifically charged with assisting consumers in arranging transportation to work. There does not appear to be standardized procedures or policies within the state VR system to determine transportation options with consumers. This is a concern because navigating transportation options can be a complex task that requires creative strategies such as identifying friends, neighbors, coworkers, or workers at nearby businesses for rides or carpools; identifying, screening, and hiring a driver; or advocating for transportation services with public or private providers.

The current study evaluated the impact of a Customized Transportation Intervention to assist VR consumers with visual impairments in one state vocational rehabilitation agency in securing employment-related transportation. Specifically, this study evaluated the following hypothesis: If persons with visual impairments participate in a Customized Transportation Intervention, they will have greater social problem-solving skills, transportation knowledge, and transportation self-efficacy, than persons who do not participate. The following research questions were also addressed: (a) Is the Customized Transportation Intervention an effective strategy to improve the ability of VR consumers to find and access transportation to work? and (b) Are VR consumers satisfied with the Customized Transportation Intervention?

Consistent with strategies associated with participatory action research (Reason & Bradbury, 2001), this study sought to produce practical knowledge useful to stakeholders (i.e., persons with visual impairments, VR professionals, O&M specialists, and policy makers). Members from

each of these groups served on an advisory council to provide expertise, feedback, and assistance with this project. Prior to implementation, this study was reviewed and approved by the Mississippi State University Institutional Review Board for the Protection of Human Subjects.

Method

Participants

State VR counselors referred consumers who are visually impaired, had open cases, and needed assistance securing transportation to work. Of 54 referrals, 48 (26 men and 22 women) agreed to participate. Information about level of vision loss was obtained from the state agency records; thirty-three participants were blind and 15 had low vision. Preferred reading modalities were: regular print, 6.3% (n=3); braille, 10.4% (n=5); electronic print, 39.4% (n= 19); and large print, 43.8% (n=21). Ages ranged from 19 to 63 (M = 39.2, SD = 12.3), with age of onset of vision loss ranging from age 1 or younger (n = 19), age 2 to 20 (n = 15), and age 21 and over (n = 14). Education levels included Bachelor's degree or higher (n = 7); some college or vocational training (n = 8); high school graduate or equivalent (n = 14); some high school, no diploma (n = 6); and 13 participants who did not provide education information. Because location of residence can impact transportation options available, participants were coded as residing in either urban (n = 35) or suburban/rural (n = 13) areas based on RUCA zip codes (Morrill, Cromartie, & Hart, 1999; RUCA Zip Code Approximation Methodology, n.d.).

Intervention

The Customized Transportation Intervention was based on concepts associated with the customized employment approach to job placement. Customized employment uses a negotiation process that blends strategies, services, and supports to create unique employment options for persons with disabilities (Luecking, Grempman, Saecker, & Cihak, 2006). In the Customized

Transportation Intervention, each participant met with a transportation coordinator to discuss goals, options, support systems, resources, and costs, and develop a customized transportation plan. Transportation coordinators maintained contact with participants, usually by telephone, as they proceeded through planned activities. To enhance social problem-solving skills, coordinators focused on guiding participants in generating solutions, addressing challenges, and generalizing previously learned strategies to various situations. Self-efficacy was fostered by breaking tasks into manageable steps and discussing successes. Coordinators worked with participants to establish clear goals, develop a collaborative plan, provide advocacy and referral, and plan for closure and follow-up.

Two transportation coordinators, with supervision from a manager, provided the Customized Transportation Intervention to intervention group members. Coordinators were employed on a contract basis for the duration of the project and were not otherwise employed. Each had a graduate degree, experience working with persons with disabilities, experience negotiating delivery of various social services, and knowledge about local transportation options. Each coordinator was trained by the researchers, who provided an overview of the intervention goals, coordinator responsibilities, record keeping procedures, strategies and techniques for interacting with participants and individualizing transportation plans, and transportation resources. After training and before working with participants, coordinators completed mock exercises and received feedback from the research staff and the transportation manager, who also provided ongoing support to coordinators.

Measures

Orientation and Mobility Screening. Our advisory council recommended conducting an O&M screening because the ability to travel safely is critical to using various transportation

options. In consultation with a nationally recognized O&M educator, we developed a 14-item instrument to screen O&M travel skills. This screening was administered by telephone at pretest only and included items about experience with O&M training and use of public transportation and confidence performing various mobility tasks. As a safety precaution, intervention participants reporting concerns (n = 5) were referred to their VR counselor for additional services.

Social Problem-Solving Inventory, Revised (SPSI-R). Social problem-solving is defined as the ability to: generate possible solutions to typical problems of daily life, choose a solution likely to yield positive results, and evaluate the consequences of the choice (D'Zurilla & Nezu, 2007). A problem-solving model is suitable for arranging transportation (Perla & O'Donnell, 2004) in that to effectively travel to work, employees must identify transportation options; evaluate cost, reliability, and convenience of each option; select an option and possibly a backup plan; and assess the effectiveness and suitability of the options. This 25-item instrument was administered at pre and posttest and has established reliability and construct validity (D'Zurilla, Nezu, & May-deu-Olivares, 2002).

Transportation Self-Efficacy Scale. Self-efficacy, or confidence in one's ability to successfully complete a task, impacts how a person approaches a task. High self-efficacy is typically based on previous success and low self-efficacy can be improved through mastery experiences (Bandura, 1994). Those with high self-efficacy tend to view difficult activities as challenges, have confidence in their ability to achieve goals, and recover quickly from setbacks. Those with low self-efficacy tend to avoid difficult tasks, believe they are incapable of achieving goals, and become easily discouraged by setbacks. We developed this 14-item instrument based on recommendations for development of self-efficacy scales, particularly that a self-efficacy

scale be domain specific (Bandura, 2006). Our advisory council assisted in identifying domains of functioning related to transportation and in developing individual items for each domain. Development included review by experts in the field and pilot testing. Data from a separate sample of 436 visually impaired people was examined to assess the appropriateness of combining items into a scale. Cronbach's alpha was .92 and the results of an exploratory factor analysis strongly supported the unidimensionality of the items, with all items loading at .55 or above on one factor. Participants rated their confidence in their ability to perform tasks associated with transportation on a scale from 0 (no confidence at all) to 10 (completely confident) (see Table 1). This measure was administered at pre and posttest.

Transportation Knowledge Scale. We developed a 12-item multiple choice instrument to measure participants' knowledge about issues associated with finding and using various methods of transportation. Transportation tasks were identified and items developed to address each task using input from our advisory council and experts in the field. Extensive pilot testing was conducted and revisions were made based on feedback. See Table 2 for an abridged version of the final items.

Procedure

Agency administrators requested that consumers from each VR counselors' caseload, which was determined by geographic region, be placed in the same group. Intervention and comparison groups were thus determined to accommodate that request, while also attempting to balance the demographics of the groups based on racial composition and rural/urban status. Counselors knew which group their consumers would be placed in prior to referral. After identifying consumers with visual impairments needing assistance in securing work-related

transportation, VR counselors obtained consumers' signed consent, as required by their state agency, and referred them for the study.

The research team telephoned potential participants, read a statement of informed consent approved by the university's review board, discussed the purpose of the project, and scheduled pretest data collection. After completing pretest measures by phone, comparison group participants were mailed a copy of the informed consent, a handout about transportation, and a $25 gift card. Intervention group participants were assigned a transportation coordinator, who contacted them to arrange an individual meeting. During the initial meeting the transportation coordinator provided participants a copy of the informed consent, discussed transportation needs and options, and developed a transportation plan for ongoing activities to identify and secure a method to get to work.

Approximately 60 days after referral, intervention group participants completed a telephone survey assessing their satisfaction with the intervention. Participants who completed posttest instruments approximately one year from referral received a $25 gift card. Participants also gave consent for the VR agency to release additional information from their files, including employment and closure statuses.

Data Analyses

Each of the three dependent variables (social problem-solving, transportation self-efficacy, and transportation knowledge) were measures of theoretically distinct constructs, making independent analyses appropriate (Field, 2013, pp. 624-625). We tested for pre-existing differences by group (intervention vs. comparison) in the pretest scores using one-way ANOVAs for each of the dependent variables. At posttest, one-way ANCOVAs were used to analyze group

differences, using pretest scores as the covariate. Descriptive statistics were conducted to describe group outcomes and determine subsequent analyses.

Participant Attrition

Of the 48 participants who completed pretests, 16 were in the intervention group. After pretesting, three intervention group participants withdrew (two found transportation and one said transportation planning was not appropriate at the time). The remaining 13 intervention group participants completed customized transportation plans with a transportation coordinator; one later withdrew. Twelve completed satisfaction surveys. Two additional participants were closed when transportation coordinators were unable to contact them. Twenty-six of the 32 comparison group participants and six intervention participants completed posttests after approximately one year. The overall attrition rate for the initial 48 referrals was 33.3%. Retention was higher in the comparison group (81.3%) than the intervention group (37.5%), which may pose a threat to internal validity.

Results

Pretest scores on the three measures (social problem-solving, self-efficacy, and transportation knowledge) were analyzed for independence and were not correlated (all rs < .28, all p-values > .05), thus confirming the appropriateness of separate analysis. Consequently, individual ANOVAs for each measure were performed to assess potential differences between the intervention and comparison groups prior to the intervention. Analyses were also conducted to confirm that neither participants' level of vision nor their area of residence were confounding variables. To analyze the impact of the intervention, posttest scores from the intervention and comparison groups were compared using ANCOVA for each of the three instruments. A

Bonferroni correction was used for each analysis and there were no major violations of the assumptions for ANCOVA.

At posttest, the intervention group scored significantly higher (M = 130.67, SD = 10.11) on the *SPSI-R* than the comparison group (M = 111.42, SD = 14.90), when controlling for pretest scores, indicating that the intervention group exhibited greater improvement in problem solving skills than the comparison group, $F(1,29) = 8.21$, $p = .008$, with a partial $\eta^2 = .22$, indicating a large effect size. Table 3 provides means and standard deviations of participant scores for the five dimensions within the *SPSI-R*.

For the Transportation Self-Efficacy Scale, scores had a possible maximum of 140. At posttest, the intervention group rated their confidence higher (M = 121.67, SD = 11.83) than the comparison group (M = 100.38, SD = 21.31), but the difference was not statistically significant, $F(1,29) = 2.74$, $p = .109$. Table 1 provides means and standard deviations for each item.

Table 2 lists the mean percentages of correct responses for groups on the Transportation Knowledge Scale. ANCOVA analysis showed that the groups were not significantly different at posttest, $F(1,29) = 1.296$, $p = .264$, although the intervention group scored slightly higher (M = 9.67, SD = 0.52) than the comparison group (M = 8.38, SD = 2.02) on the 12-item test at posttest. Possible violations of normality and linearity for the intervention group that were noted for this variable, as well as a significant difference in group variances indicated by Levene's test ($p = .04$), can be attributed to the small number of responses ($n = 6$) all within a narrow range (i.e. from 9 to 10 on a 13-point scale). Although the potential violation of these assumptions was considered minimal, we conducted a mixed-factorial repeated measures ANOVA which also indicated that the groups were not significantly different at posttest, $F(1,30) = 0.001$, $p = 0.980$ with Bonferroni correction.

Intervention group participants completed a satisfaction survey regarding the Customized Transportation Intervention. Of the 12 who completed it, 75% said the coordinators provided information helpful in learning about transportation options with more than half (58%) reporting learning new transportation options. Most participants (92%) were satisfied with the services and believed they could find transportation to work in the future. Although the majority of the intervention participants (67%) received some information about transportation options from their VR counselors, all participants recommended that a transportation coordinator be assigned to other consumers with visual impairments to assist with identifying transportation options.

At the time of the satisfaction survey, 8 of 12 intervention participants were unemployed. Information provided by the VR agency several months after the completion of the project indicated 8 of the 16 original intervention group participants (50%) and 24 of the 32 original comparison group participants (75%) were employed. Additionally, a small number of participants remained enrolled in VR services (5 intervention and 6 comparison).

Discussion

The intervention group scored higher than the comparison group on all measures at posttest, and trends in all cases showed that the intervention group improved more from pretest to posttest than the comparison group. However, perhaps influenced by small sample size, significant differences were found in only one area, social problem-solving. Although the sample size is small, the effect on social problem-solving was significant and sizeable. Consequently, we conclude that participation in the intervention had a positive impact on the ability of the intervention group to engage in problem-solving tasks, such as assessing transportation needs, identifying transportation options, choosing the most feasible option, and monitoring and evaluating the appropriateness of the selected option.

All participants tended to have confidence in their ability to explain to a driver where to go, ask for assistance upon arrival at a destination, ride a bus or shuttle, or arrange a fair price with a driver. Participants had less confidence in arranging a ride with someone working at a nearby business, finding and hiring a driver, and using the internet to find transportation resources. These skills may warrant increased attention during the VR process. Many participants were engaged in job seeking during the intervention and their lack of success finding employment could have negatively impacted their overall confidence, including their transportation self-efficacy. Participants who searched for transportation and were discouraged by the options available may have rated their self-efficacy on some items lower at posttest than at pretest.

All participants appeared to have some degree of knowledge about typical tasks associated with managing transportation. The comparison group received information about transportation, which may have positively impacted their posttest scores. The intervention group tended to be most knowledgeable about appropriate tips for drivers, cost of gasoline, carpooling etiquette, and knowing the route to work, especially following the intervention.

Limitations

This longitudinal study evaluates the effectiveness of a unique intervention, which poses challenges and limitations. Sample size, attrition, selection, and lack of random assignment to groups are important considerations.

Researchers relied on VR counselors to identify and refer participants. While we believe counselors made reasonable efforts to do so, they may have experienced difficulty contacting consumers to obtain their signed consent for referral, consumers may have been reluctant to

participate in research, or consumers may have been skeptical that the intervention would be helpful. There are no established guidelines for addressing transportation within the VR agency, so counselors may have elected to continue using their existing practices. If the Customized Transportation Intervention was provided by VR staff, consumers may have been more willing to participate and continue in the intervention.

Attrition is a common issue with longitudinal research. However, significantly different retention rates by group may pose a concern for internal validity. The retention rate was higher in the comparison group but their activities were less intensive and intrusive. Both groups received incentives but those in the intervention group may have felt the project required more time or effort than expected. Those who remained unemployed throughout the project may have been less motivated to explore transportation options. Further, individual differences related to attitudes, location, or techniques used by transportation coordinators may have contributed to disproportionate retention rates. Random assignment would control for these potential differences but the VR agency requested that participants from similar locations working with the same counselors be assigned to the same group.

Implications for Practitioners

Participants' scores on the project instruments indicated that participants had at least average problem-solving skills, and some degree of transportation knowledge and transportation self-efficacy. Yet these consumers were identified by their counselors as needing transportation assistance and participants acknowledged this need by being in the project. Although limited transportation options may be one reason consumers continue to experience transportation problems, it is possible that increased levels of knowledge, confidence, and skills are necessary

among this population to navigate the complexities involved in securing employment-related transportation.

Participants were positive about their experiences working with the transportation coordinators despite that most were unemployed at the time of the satisfaction survey. Working with the transportation coordinator and discussing transportation options may have stimulated participants' problem-solving skills. Participants appeared to value that assistance, with nearly all recommending the intervention for others. Ongoing contact with a transportation coordinator may have provided emotional support that reduced stress associated with navigating transportation options. While positively regarded, it is not clear whether the intervention will result in improved employment outcomes.

These results lend support to the necessity and benefit of engaging consumers in structured transportation planning discussions and activities. Presently, no single service area is explicitly tasked with this function and as a result, developing skills for securing transportation may go unaddressed. As transportation is often cited as a significant barrier to successful employment, increased awareness of the importance of discussing it with consumers is worthy of attention.

Hiring a person dedicated to assisting consumers in exploring and navigating transportation options may not be a feasible option for VR programs due to fiscal limitations. In cases where funding is available, it appears that a transportation coordinator should have both knowledge about transportation options and the ability to establish a relationship with the consumer. This combination of skills would meet the needs of both consumers who seek informational support as well as those needing social support.

Dialogue among rehabilitation administrators and staff may be helpful in identifying mechanisms for incorporating information about work related travel in the rehabilitation process, including identifying who will be responsible for this task. Rehabilitation counselors, O&M instructors, and potentially job developers, may assist consumers in identifying and navigating work related transportation plans. These rehabilitation professionals could provide new information to consumers about transportation options or encourage consumers to engage in problem-solving activities to overcome their personal transportation barriers. Resources about transportation are available and counselors can refer to these in generating discussions with consumers about their work-related transportation options (Corn & Rosenblum, 2000; Crudden, 2014).

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Table 1

Transportation Self-Efficacy Scale: Mean Confidence Ratings for Items by Group

Transportation Self-Efficacy Items	Intervention Mean (SD)		Comparison Mean (SD)	
	Pretest n=16	Posttest n=6	Pretest n=32	Posttest n=26
1. Call agencies to schedule/request transportation	9.2 (1.6)	9.8 (0.4)	7.2 (3.2)	6.8 (3.4)
2. Find and hire a driver	7.6 (2.1)	8.0 (1.9)	6.1 (3.5)	6.1 (3.6)
3. Arrange a ride with co-workers	7.3 (2.2)	8.2 (2.2)	6.3 (3.2)	6.3 (3.5)
4. Arrange a ride with someone working nearby	5.2 (3.4)	6.0 (1.5)	5.2 (3.5)	4.2 (3.3)
5. Arrange a fair price with a driver	8.5 (2.7)	9.2 (1.0)	7.2 (3.0)	7.9 (2.4)
6. Use the internet to find transportation options.	7.1 (3.7)	8.7 (2.8)	5.5 (3.8)	6.7 (3.5)
7. Identify 2 or more transportation options	7.5 (3.2)	9.5 (0.8)	7.7 (2.2)	7.9 (2.4)
8. Find out about costs for transportation options	8.4 (2.6)	8.8 (1.3)	7.0 (2.9)	7.0 (2.5)
9. Ride a bus/shuttle	9.4 (1.0)	9.3 (0.8)	8.2 (2.8)	7.9 (3.3)
10. Explain to a driver where to go	8.9 (2.5)	9.5 (0.8)	8.9 (1.9)	9.1 (1.9)
11. Ask for assistance at a destination	9.2 (1.4)	9.8 (0.4)	8.5 (2.3)	8.7 (2.1)
12. Earn enough money to pay for transportation	8.7 (2.9)	8.7 (1.5)	7.3 (3.1)	7.0 (3.2)
13. Find my own transportation	7.3 (3.0)	8.0 (3.6)	7.2 (2.5)	7.7 (2.7)
14. Create a back-up plan for transportation	8.2 (1.7)	8.2 (1.8)	6.5 (3.2)	7.6 (2.8)

Table 2

Transportation Knowledge Scale: Average Percentage Correct for Items by Group

Transportation Knowledge Items	Intervention		Comparison	
	Pretest n=16	Posttest n=6	Pretest n=32	Posttest n=26
1. What is the average price of gas per gallon in AL?	94%	100%	72%	88%
2. What is the average cost of owning a mid-size car for one year?	50%	50%	41%	38%
3. Some drivers are paid by the mile. What do you think is a reasonable amount to pay per mile?	31%	83%	53%	54%
4. If you call a taxi, you will be asked for name and address information. What else should you tell them?	81%	100%	72%	92%
5. What should you do to pay a taxi or cab driver?	63%	50%	72%	65%
6. An appropriate tip for a taxi driver who takes you to work each day would be:	50%	100%	41%	65%
7. Talking to family, friends, others is a good way to find a driver. Once you have a name, you should:	69%	83%	75%	77%
8. If someone drives me to and from work each day, I should:	56%	83%	53%	65%
9. With a hired driver or cab, what is your responsibility for knowing how to get to and from work each day?	56%	83%	63%	62%
10. When riding in a carpool, it is okay to:	63%	100%	75%	88%
11. If you share a ride to work with a friend or family member, you should:	87%	100%	97%	88%
12. There is a bus you can take to work. It picks up a quarter mile from your house and drops you off about two blocks from your workplace. Which of the following offers you the most independence in travel?	56%	33%	41%	54%
Total Score	7.56/12 = 63.00%	9.67/12 = 80.58%	7.53/12 = 62.75%	8.38/12 = 69.83%

Table 3

SPSI-R Subscales: Mean Scores by Group

Problem-Solving Style Interpretation of Higher Scores	Intervention Mean (SD)		Comparison Mean (SD)	
	Pretest n=16	Posttest n=6	Pretest n=32	Posttest n=26
Positive Orientation Problems are solvable challenges rather than threats; belief in ability to be successful	115.63 (11.66)	123.00 (9.42)	114.06 (13.90)	115.35 (13.38)
Negative Orientation Problems are threats to well-being; doubts ability to solve problem	89.00 (10.22)	74.83 (4.58)	100.50 (19.58)	86.81 (8.69)
Rational Careful and systematic approach to problem-solving; likely effective in problem-solving situations	109.50 (19.88)	70.83 (3.97)	114.88 (18.70)	68.54 (4.33)
Impulsive/ Careless Impulsively choose first option; unsystematic evaluation of alternative solutions; likely ineffective in problem-solving	95.31 (10.80)	73.17 (6.91)	98.63 (17.06)	81.88 (11.68)
Avoidance Avoid problems rather than confront; attempt to shift responsibility to others; likely ineffective in problem-solving	93.75 (9.98)	78.50 (10.60)	96.88 (13.56)	90.50 (11.80)