
Assessment of Involvement in a Peer Orientation Program

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Abstract

Evidence of the effectiveness of peer programs at the university level has not kept pace with the rapid growth of such programs. The present study compared an experimental group of 76, first years students who were trained as peer advisors with a control group of 34 similar characteristic peers on a variety of pre-post measures, including the University Experience Questionnaire (UEQ), the Rosenberg Self-Esteem Inventory (RSEI), and the Perceived Stress Scale. Results indicated no significant differences between the two groups, but exploratory analysis resulted in significant within group differences. Reasons for the results and implications for university first year peer programs are discussed.

Résumé

L'évidence de l'efficacité des programmes paires au niveau Universitaire n'a pas gardé le pas avec la croissance rapide de ces programmes. L'étude présente a fait la comparaison entre un groupe expérimental de 76 étudiants de première année entraînés comme conseillers pour paires, et un groupe control incluent 34 étudiants ayant des caractéristiques similaires. Cette comparaison a été faite avec une variété de mesures pré et post, incluent l'"University Experience Questionnaire (UEQ)," le "Rosenberg Self-Esteem Inventory (RSEI)," et le "Perceived Stress Scale." Les résultats indiquent aucune différences significatives entre les deux groupes, mais une analyse plus approfondie s'est démontrée significative entre les individus de chaque groupe. Les raisons reliées à ces résultats et les implications concernant les programmes paires de première année universitaire sont discutées.

During the past several years, the number of peer counselling programs has been growing explosively. In a recent study, Carr (1986) reported a 1000% increase in peer counselling programs over an eight year period. According to Salovey and D'Andrea (1984), the average university campus has over 100 active peer counsellors and over 25% of the student body uses the services provided by peer counsellors. At the university level, the functions of peer counsellors are diverse, ranging from crisis intervention to assertiveness training, with residence hall counselling and academic tutoring being the most common (Salovey & D'Andrea, 1984). Predictions regarding the future of peer counselling are highly optimistic and many writers believe that peer counselling will continue to grow and expand, touching the lives of a wide range of people, from students to the elderly.

Despite the stable past, active present and optimistic future of peer counselling programs, research in the area has fallen far behind program development and implementation. In 1974, Scott and Warner stated that many of the articles found in the literature featured subjective rather than objective evaluations. Fifteen years later, Varenhorst and others echoed these same sentiments (Carr, Yanishevski & de Rosenroll,

1989). The need for objective measures of peer program efficiency is paramount. This study, presenting the results of a pre- and post-assessment will add to the existing body of research.

At a large Canadian university, an extended orientation program, called the Peer Advising Program, has been established to aid first-year students living off-campus with their transition from high school to university. Program goals include providing an immediate support system, encouraging involvement, and enhancing participants' sense of belonging and satisfaction with the university experience. The goals are implemented by 35 trained upperclass Peer Advisors (PAs) who establish contact with a total of approximately 500 first-year students (Peers), most of whom were unable to get into a campus residence and lived off-campus. The program operates from September to December, during which PAs organize activities (eg. library tours, study skill seminars, social events) and maintain regular individual and group contact with their peers.

Past research on this particular Peer Advising Program (Russel & Thompson, 1987; Russel & Skinkle, 1990) was based on post-assessment methods and many questions about pre-post differences were left unanswered. The present study compared an experimental group (program participants) with a control group (non-participants) in order to answer the following research questions: 1) Did participation in the Peer Advising program lead toward greater involvement in, and satisfaction with, the university experience as compared to a group of students not involved? 2) Did program participants compared with non-participants report increased self-esteem; and 3) did the participants report a decrease in perceived stress when compared to the non-participants?

METHOD

Participants

The present investigation involved pre- and post-assessment of two groups of university students. The experimental group consisted of 76 randomly selected first-year students who were on the waiting list for residence accommodation. These students were living off-campus, were participants in the Peer Advising Program, and were tested both at pre- and post-assessment. The control group consisted of 34 randomly selected first-year students living off-campus for whom there was pre- and post-assessment data. These students had not applied for residency and in turn were not asked to participate in the program.

The experimental and control groups were compared on background demographics using Chi-square analyses. The results of the analyses indicated that the groups were similar in terms of age ($6, N=107=7.5, p>.05$), major ($4, N=104=4.8, p>.05$) and gender ($1, N=107=1.2, p>.05$).

Instrumentation

The University Experience Questionnaire (UEQ) (Russel & Skinkle, 1988) was used to assess perceived membership in the university community. The UEQ, which is a 31-item scale, measures four components of the university experience: satisfaction with the university environment (component #1), academic involvement (component #2), and knowledge of the physical environment (component #3). A fourth measure, which is a single item, assesses physical involvement (component #4). Possible scores on the UEQ range from 31 to 186. On this administration of the UEQ to 142 students, which included 75 peers, 32 controls and 34 advisors, the internal consistency alpha was .85 and the test-retest reliability was .88.

Pre-university experiences were assessed using the Pre University Experience Questionnaire (PUEQ) (Russel, 1989). This 30-item instrument is very similar to the UEQ with the exception of the measure of physical involvement, which is not present in the PUEQ. Modifications of the UEQ appear in the wording of the items in the satisfaction and academic involvement components so that both the present and present future are emphasized. For example, the UEQ item "I felt alone and bewildered during the first week of school" was changed on the PUEQ to read "I feel alone and bewildered." Another example of a tense alteration from the UEQ to the PUEQ is "I still do not know the campus very well" compared to "I do not know the campus very well." A final illustration of a UEQ item modification is "I voluntarily attend special seminars or talks sponsored by my faculty or department" compared to "I will voluntarily attend special seminars or talks sponsored by my faculty or department."

Levels of self-esteem and perceived stress were also tested at both the pre- and post-assessment. The Rosenberg Self-Esteem Inventory (RSEI), used to measure self-esteem, is a brief (10-item) scale with a test-retest reliability of .85 (Rosenberg, 1965) and an internal consistency of .83 (Reynolds, 1988). A minimum of 10 and a maximum of 40 are the possible scores on the RSEI.

In order to obtain an indication of level of stress, the Perceived Stress Scale was used. This 14-item scale, with possible scores ranging from 14 to 70, has been reported to have an internal consistency of $r=.85$ and a test-retest reliability of $r=.85$ (Cohen, Kamarch & Mermelstein, 1983).

Procedure

The method of pre-data collection was different for the experimental group as compared to the controls. The peers were solicited for participation in person by the present investigators at the first meeting of the Peer Advising Program during orientation week. The questionnaires were accompanied by an introductory letter explaining the purpose of

TABLE 1

Descriptive Statistics Summary

Pre Data	Group					
	Peers			Controls		
Variables	N	M	S.D.	N	M	S.D.
PUEQ Total	69	101.9	18.15	31	99.6	16.57
-Component 1 (Sat)	73	67.4	10.63	31	64.1	13.24
-Component 2 (Acad)	71	26.3	5.73	32	25.1	5.33
-Component 3 (Knw)	75	8.0	8.56	32	9.8	8.31
Stress	68	36.0	6.78	29	39.4	9.16
Self-Esteem	71	33.5	4.57	32	32.7	5.37

Post Data	Group					
	Peers			Controls		
Variables	N	M	S.D.	N	M	S.D.
UEQ Total	71	109.6	20.11	31	100.8	18.84
-Component 1 (Sat)	73	67.6	12.20	32	63.9	11.06
-Component 2 (Acad)	73	22.8	5.99	31	21.0	6.36
-Component 3 (Knw)	75	19.0	10.53	32	16.1	10.61
-Component 4 (Inv)	75	2.5	1.46	32	2.3	1.39
Stress	74	39.5	8.04	32	40.9	7.14
Self-Esteem	75	32.3	5.27	31	32.4	5.75
Grade 13 Marks	71	78.7	5.51	30	80.7	5.91
University Marks	67	68.3	8.16	32	70.6	8.65

the study and requesting their consent to participate. In contrast, the control group was requested to participate via a mail-out, which included a self-addressed campus mail envelope, a cover letter and a consent form. The controls received the surveys three weeks after the peers' because the registrar's office was unable to provide a list of student numbers and addresses until that time.

During post-assessment both groups were contacted by mail at the beginning of the second term, in a similar fashion as just described.

RESULTS

The means and standard deviations of each scale for the peers and controls are shown in Table 1.

The 2 (peers vs. controls) \times 2 (UEQ Total across time) repeated measures analysis of variance indicated no main effect for group ($F(1,95) = 2.36, p > .05$), and a main effect for time ($F(1,95) = 5.53, p > .05$). The group \times time interaction ($F(1,95) = 3.00, p = .086$) approached significance. As illustrated in Figure 1, the mean scores for the peers and controls at pre-analysis were comparable ($x = 101.9, x = 99.6$, respectively). However, at post-analysis the mean score for the peers ($x = 109.6$) was approximately 9 points higher than the mean for the controls ($x = 100.8$).

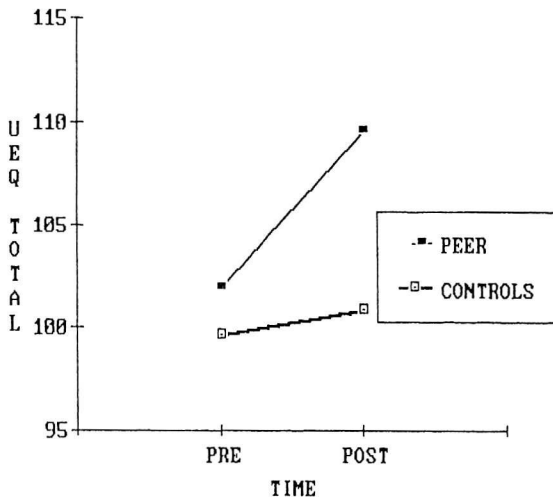


FIGURE 1

Peer and Control group EUQ scores across time

TABLE 2

Correlation Matrix

PEERS						
	PUEQ	PSS	SE	UEQ	PPSS	PSE
PUEQ						
PSS	-.37*					
SE	.47**	-.59**				
UEQ	.53**	-.35*	.22			
PPSS	-.52**	.63**	-.55**	-.50**		
PSE	.50**	-.61**	.76**	.39*	-.69**	
UMARKS	.38*	-.31*	.37*	.42**	.48**	.35*

CONTROLS						
	PUEQ	PSS	SE	UEQ	PPSS	PSE
PUEQ						
PSS	-.57**					
SE	.30	-.69**				
UEQ	.63**	-.27	.20			
PPSS	-.11	.47*	-.47*	-.21		
PSE	.21	-.51*	.87**	.08	-.48*	
UMARKS	.26	-.21	.05	.01	.11	.02

Note: PUEQ=Pre University Questionnaire; PSS=Pre Perceived Stress Scale; SE=Pre Self-Esteem; UEQ=Post University Questionnaire; PPSS=Post Perceived Stress Scale; PSE=Post Self-Esteem; UMARKS=Self reported University Marks.

* $p < .01$ ** $p < .001$

The 2 (peers vs. controls) \times 2 (stress across time) repeated measures ANOVA yielded no main effect for group ($F(1,94) = 2.14, p > .05$); a main effect for time ($F(1,94) = 6.69, p < .05$); and no significant interaction ($F(1,94) = 2.19, p > .05$). Examination of the pre- and post-stress means (37.0 and 39.6, respectively) indicates that perceived level of stress increased significantly over time.

Lastly, the 2 (peers vs. controls) \times 2 (self-esteem across time) repeated measures ANOVA resulted in no main effect for group ($F(1,100) = .19, p > .05$), no main effect for time ($F(1,100) = 2.89, p > .05$) and no interaction ($F(1,100) = 1.16, p > .05$). The mean level of self-esteem at pre-analysis was 33.2, while at post-analysis, the mean dropped slightly to 32.4.

Despite the trend indicating a group (peers vs. controls) by time (UEQ Total across time) interaction, the effect of program participation versus

non-participation was not as great as anticipated. In an attempt to more fully understand the above results, several exploratory analyses concerning the nature of the sample were performed.

A Pearson product-moment correlation for each group, using both pre- and post-dependent variables was performed in order to determine whether the relationships between the dependent variables were comparable for peers versus the controls. These analyses revealed the matrices shown in Table 2. The dependent variables tended to be correlated more frequently for the peers as compared to the controls. In particular, it was noted that university marks for the peers were significantly correlated with pre-UEQ, stress, self-esteem and post-UEQ, stress and self-esteem. In contrast, university marks were not significantly correlated with any other dependent variable for the controls.

In addition to exploring differences between the groups, several analyses were undertaken to examine within-group differences. One of the within-group variables examined was amount of program involvement on the part of the peers. On the basis of number of hours spent with their PA, two groups of peers were selected for analysis. Peers who spent eight or more hours per month involved in the program ($n=5$) were compared

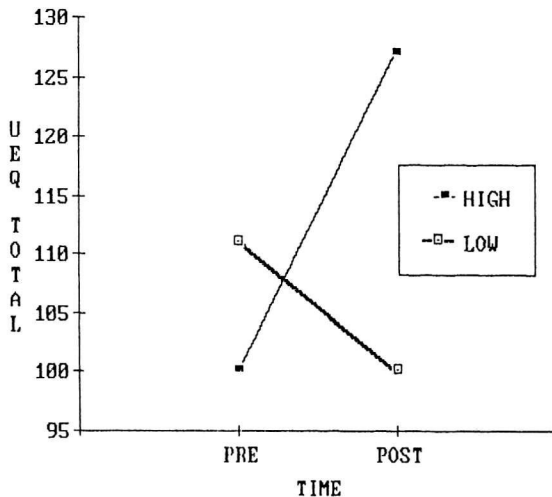


FIGURE 2

High vs. low involved peers' UEQ scores across time

to peers who spent thirty minutes or less per month ($n = 5$). Using repeated measure analysis of variance, differences between these two groups were examined. The 2 (high vs. low hours \times 2 (UEQ Total across time) repeated measures ANOVA resulted in no main effect for group ($F(1,7) = .49, p > .05$), and no main effect for time ($F(1,8) = 3.78, p > .05$). However, a significant interaction was observed ($F(1,8) = 21.0, p < .01$). As illustrated in Figure 2, peers who were less involved in the program scored higher on the UEQ ($\bar{x} = 110$) than peers who were highly involved ($\bar{x} = 100$) at pre-test administration. At post-analysis, however, these findings changed dramatically. The uninvolved peers dropped 10 points on the UEQ ($\bar{x} = 100$), while the involved peers increased their UEQ scores by 27 ($\bar{x} = 127$).

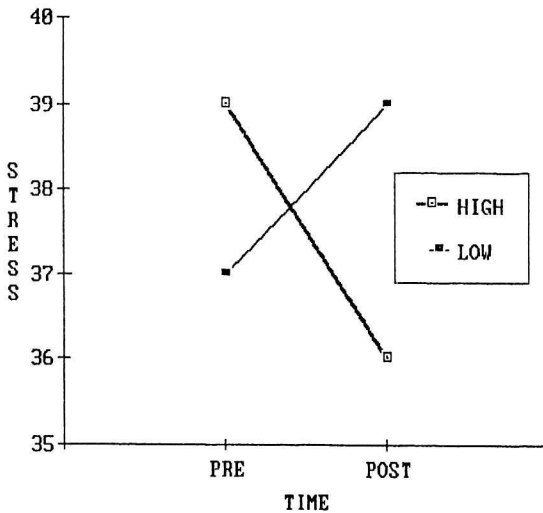


FIGURE 3

High vs. low involved peers' stress scores

TABLE 3

Gain and Mean Scores on the UEQ

	Group					
	Peers			Controls		
	Pre	Post	Gain	Pre	Post	Gain
Residence	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
Home	112	115	3.4	107	109	2.0
Non-Home	100	108	8.6	95	96	.7

Similar results were found when stress and self-esteem were used as the dependent measures in the repeated measures analysis of variance procedure. The 2 (high vs. low hours) \times 2 (stress across time) ANOVA indicated no main effect for group ($F(1,8) = .01, p > .05$) and no main effect for time ($F(1,8) = 5.36, p < .05$). As shown in Figure 3, the stress means indicate that the uninvolved peers perceived less stress at pre-analysis ($\bar{x} = 37$) than the involved peers ($\bar{x} = 39$). However, at post-analysis, the uninvolved peers scored higher on the stress measure ($\bar{x} = 39$) than the involved peers ($\bar{x} = 36$).

The results of the 2 (high vs. low hours) \times 2 (self-esteem over time) repeated measures ANOVA showed no main effect for group ($F(1,7) = .73, p > .05$) and no main effect for time ($F(1,7) = 1.73, p > .05$). The group by time interaction was found to approach significance ($F(1,7) = 4.53, p = .071$). At pre-analysis, the uninvolved peers possessed higher levels of self-esteem ($\bar{x} = 37$) than the involved peers ($\bar{x} = 33$). The means at post-analysis, however, revealed a drop for the uninvolved peers ($\bar{x} = 33$) and an increase for the involved peers ($\bar{x} = 34$).

Lastly, exploratory analyses were performed examining the effect of place of residence in the community. Subjects were divided into two groups consisting of those who lived at home and those not at home. Students were classified as "home" if they lived at their parents' home while attending university, and "non-home" if they lived away from home and in the community while attending university. A 2 (peer vs. controls) \times 2 (home vs. non-home) analysis of variance was conducted using gain scores on the UEQ as the dependent variable. It should be noted that by dividing the sample in this fashion, the *n* size per cell decreased considerably. The analysis resulted in no main effect for group ($F(1,93) = 2.4, p > .05$); no main effect for residence ($F(1,93) = .31, p > .05$); and no group by residence interaction ($F(1,93) = .56, p > .05$). Despite the lack of significant findings, the gain scores and means (shown in Table 3) revealed an interesting trend. The non-home controls (*n* = 19) showed no gain from pre to post ($\bar{x} = -.68$), whereas the non-home peers (*n* = 56) indicated a gain score of 8.6. Both the home controls (*n* = 11) and the home peers (*n* = 11) showed a moderate gain ($\bar{x} = 2.0, \bar{x} = 3.4$, respectively). The data suggests that the home peers and controls possess higher pre- and post- means than the non-home peers and controls.

DISCUSSION

This pre-post assessment study comparing an experimental group (participants in a Peer Orientation Program) with a control group (non-participants) investigated research questions regarding the effect of program involvement on satisfaction with their university experience, and levels of self-esteem and perceived stress. Analyses to further explore group and within-group differences were conducted.

Previous research has found that participants score higher on the UEQ than non participants (Russel & Thompson, 1987; Russel & Skinkle, 1990). However, these studies were based exclusively on post-program assessment, leaving open questions regarding possible pre-treatment differences between the groups. The suggestion of a group (peers vs. controls) by time (UEQ across time) interaction approaching statistical significance in our data lends support to the conclusion that group differences found in previous studies were not the result of pre-treatment differences.

The results of this study do not support the notion that program participation has an impact on level of self-esteem and perceived stress. Varenhorst (1984) has pointed out that observable changes in global measures, such as self-esteem, are difficult to assess because of the nature of the variables and because of the relatively brief time frame of most peer programs.

The correlation matrices produced some puzzling findings. The correlation analysis indicated that the relationships between the dependent variables are different for the controls and peers. Close examination of these matrices revealed that for the controls, the dependent variables tend to be somewhat unrelated in contrast to the peers. That is, among this group of peers, university experiences, stress, self-esteem and marks were all highly interconnected, whereas, among the control group the intercorrelations were low. The meaning of these observed differences is open to debate, but one possible interpretation is that the peers may be more vulnerable to the demands and stresses of a university environment. It appears that disruption in one area, such as poor grades, may influence the remaining areas, such as self-esteem, or satisfaction with their university experience. In contrast, upset for the controls in one domain may have little, if any, bearing on the other areas. Although it is speculative, this reasoning supports the view that the peers may represent a high risk group in comparison to the controls because they are more globally affected by negative occurrence.

The findings regarding amount of program involvement have far-reaching ramifications. A significant group (high vs. low involvement) by time (UEQ across time) interaction was found when the most involved peers were compared to the least involved peers. This suggests that actively involved peers reap more benefits from program participation than less involved peers. In some senses, comparing highly involved peers to less involved peers may be more appropriate as a way of evaluating program effectiveness than comparing peers to controls. The controls are a very different group of students than the peers inasmuch as they did not apply for residence, nor did they choose to become involved in the Peer Advising Program. Therefore, attempting to evaluate program effectiveness by comparing students who have expressed a need for social support to students who have not, may lead to inaccurate conclusions.

Although results were found to be statistically non-significant, the trend observed in the data suggests that place of residence is also an important variable. The pre and post mean scores indicated that students residing at home scored notably higher on the UEQ than students who lived in the community. This trend suggests that non-home students may represent a higher risk group than home students. Interestingly, the target group for the Peer Advising Program, that is, non-home students who were denied admission to residence, showed sizable gain scores on the UEQ in comparison to non-home controls.

Limitations

Several of the methodological issues encountered in the course of this study warrant discussion. The first limitation is the difference in pre-

treatment data collection. Unknown to the researchers at the time, the addresses for the controls were unavailable until the third week into the first semester. Consequently, the peers were surveyed prior to the commencement of classes and the controls were assessed three weeks later. It is uncertain how this critical time difference may have influenced pre-data findings.

The second issue, which is more general to pre-post treatment studies, involves the wording of the scales. The Pre University Experience Questionnaire included items such as "I will experience a great deal of trouble in preparing for exams" and "I will voluntarily attend special seminars sponsored by my faculty or department." In contrast, the same University Experience Questionnaire items read, "I still experience a great deal of trouble in preparing for exams" and "I voluntarily attend special seminars sponsored by my faculty or department." This difference in wording may have introduced a confounding variable in the form of intentions or expectations. Precisely how these factors influenced the pre-post differences observed is unknown.

CONCLUSIONS

During the past decade, many colleges and universities have created programs that utilize trained peer helpers, but research on the effectiveness of these programs has been limited. In this study, participants in a peer advising program were compared to non-participants regarding perceived university experience, stress and self-esteem, both prior to, and after, program participation. The results indicated that peers scored higher on the University Experience Questionnaire than the controls and this difference was found to approach statistical significance. No significant differences were found between the groups regarding perceived stress and level of self-esteem. In an attempt to determine why observed group differences were not as great as anticipated, several exploratory analyses were performed. Results of these analyses suggested that amount of program involvement and place of residence were important variables that warrant consideration in future research. On a practical level, these findings suggest that more emphasis should be placed on encouraging peers to become more actively involved in the program in order to maximize program impact. In addition, the exploratory analyses suggested that the target group for the program should be expanded to include all first-year students who live in the community, because they may constitute a higher risk group than those students who live with their parents.

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