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Relational Health Indices: An Exploratory Study

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**THE RELATIONAL HEALTH INDICES:
AN EXPLORATORY STUDY**

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ABSTRACT

This study examined the psychometric properties of the Relational Health Indices (RHI) with a group of 450 first year and senior students at a women's liberal arts college. The measure is based on the Relational Theory (Jordan, Kaplan, Miller, Stiver, Surrey, 1991; Miller & Stiver, 1997) and designed to assess growth-fostering Peer, Mentor, and Community relationships. For each of these three components, the following areas were investigated: internal reliability, factor structure, and convergent and concurrent validity. The RHI's components generally demonstrated good overall internal reliability, and the factor analyses confirmed the subscale structure: engagement, authenticity, empowerment, and conflict/difference. Further, associations between RHI scales and validation scales were significant and in the direction hypothesized.

The RHI is currently available for research purposes and continued scale and theory development.

INTRODUCTION

The importance of social support and relationships in women's lives has been studied extensively. Social support's positive effects on health and adjustment have been well-documented (Boyce, Harris, Silove, Morgan, Wilhelm, Kadzi-Pavlovic, 1998; Komproe, Rijken, Ros, Winnubst, 1997; Lee, 1997; Mitchell & Hodson, 1983; Stewart & Clarke, 1995; Testa, Miller, Downs, Panek, 1992; Valentine & Feinauer, 1993; Warren, 1997.) However, the essence of social support's transformative characteristics has been less clear. Some studies have focused on the quantity and structure of social relationships (e.g., Hammer, 1981; Parks & Pilisuk, 1984). Others have inquired into people's access to intimate relationships, and have identified the resources available in such social ties (e.g., Barrera & Ainley, 1983; House, 1981; Stokes & Wilson, 1984; Vaux, Riedel, & Stewart, 1987). Findings from these studies indicate that the *quality and nature* of individuals' relationships are more important than their existence (Connor, Powers, & Bultena, 1979; Fiore, Becker, & Coppel, 1983; Leveton, Griffin, & Douglas, 1979). In particular, relationships that are intimate and mutual can facilitate self-disclosure, emotional resiliency, coping strategies, and additional social support (Genero, Miller, Surrey, Baldwin, 1992; Lin, 1986).

Along these lines, feminist scholars at the Wellesley College Stone Center have proffered the Relational Model as an innovative theoretical paradigm for the assessment of women's psychological development and well-being (Jordan, Kaplan, Miller, Stiver, Surrey, 1991; Miller & Stiver, 1997). Whereas most traditional psychological theories focus on the task of separation-individuation as the

ultimate goal of development, Relational Model theorists conceptualize ongoing, growth-fostering connection as critical to women's development (Surrey, 1985).

In response to critics who contend that such a model over-idealizes caring qualities, denies personal needs, and thus further oppresses women, Jordan and colleagues have convincingly held that growth-fostering aspects of women's relational skills empower individuals as well as their relationships (Jordan, 1997; Westkott, 1997). Through clinical data, they identified characteristics of relationships that fostered psychological growth: mutuality, an increased sense of vitality, feeling empowered to take action, acquiring an increased knowledge of self and the other, gaining a greater sense of self-worth and validation, an increased desire for more connection, and capacity to deal with conflict (Jordan, 1992, 1997; Miller & Stiver, 1997).

Extensive empirical examination of this model has been limited by a lack of validated tools expressly designed to reflect the model's concepts, especially in the context of specific relationship types. To date, we are aware of only one published measure that explicitly reflects the described concepts (Genero, Miller, Surrey, & Baldwin, 1992). However, research with the latter measure, as well as research on similar constructs, has strongly suggested the importance of qualities, such as mutual engagement, authenticity, empowerment, and ability to deal with difference/conflict. Engagement (as defined by perceived mutual involvement, commitment, and attunement in the relationship) may have a beneficial impact on individuals as well as relationships as indicated by studies on closeness and empathy. The latter two mediate stress and depression, and are associated with self-esteem, self-actualization, cooperation, low interpersonal distress, and relationship satisfaction (Beeber, 1998; Burnett & Demnar, 1996; Gawronski & Privette, 1997; Schreurs &

Buunk, 1996; Sheffield, Carey, Patenaude, & Lambert 1995; Shulman & Knafo, 1997). Based on research on self-disclosure and openness, authenticity (the process of acquiring knowledge of self and the other and feeling free to be genuine in the context of the relationship) appears to be related to being liked, increased liking of others, and motivation in relationships (Kay & Christophel, 1995). Empowerment/zest (the experience of feeling personally strengthened and encouraged, as well as inspired to take action) has a direct impact on positive affect, meaningful activity, and innovativeness (Hall & Nelson, 1996; Spreitzer, 1995). The ability to deal with difference or conflict (the process of expressing, working through, and accepting differences in background, perspective, and feeling) appears to be related to higher self-esteem, more positive attitudes toward life, less depression or anxiety, and enhanced internal locus of control (Kashani, Burbach, Rosenberg, 1988; Zhang, 1994).

Mentoring Relationships

Among growth-fostering relationships, close connections with peers and unrelated adults or mentors, as well as sense of belonging in a community, are shown to be increasingly important in later adolescence and young adulthood (Blyth, Hill, & Smith, 1982; Galbo, 1986; Hamilton & Darling, 1996; Hagerty, Williams, Coyne, & Early, 1996; Garbarino et al, 1982; Russell, Cutrona, Rose & Yurko, 1984). Research on the social networks of adolescents has indicated that approximately one-quarter of all persons listed as significant others were non-parental adults (Garbarino, Burston, Raber, Russell, & Crouter, 1978).

Despite these findings, surprisingly little research has been conducted to elucidate the impact and nature of mentoring relationships, especially among females. Most of the empirical work on

mentoring has focused narrowly on adult professional development and advancement (Bolton, 1980; Carden, 1990; Healy & Welchert, 1990; Kram, 1985; Merriam, 1983). This traditionally male model of mentoring has failed to recognize the more mutual and holistic nature of mentoring that was described by Levinson (1978) when he conceptualized the latter as a form of love relationship.

A few investigators have adopted this perspective by viewing mentoring as not merely a "professional transaction," but essential to psychological growth and development (Burton, 1977; Beck, 1989). Study findings that reveal the impact of mentoring on females, ranging from gifted or resilient to at-risk populations, have been somewhat elucidating in this regard. For example, females felt much more strongly than males that mentoring helped them bridge professional and personal concerns, such as, integrating career and family (Beck, 1989). In a study of young, African-American mothers, those with mentors were less depressed than their counterparts. Their mentors appeared to enable their social interactions and serve as a buffer against the negative aspects of interpersonal relationships. More extensive examination of "growth-fostering" mentoring is limited by the paucity of measures that reflect it.

Peer Relationships

Existing measures of peer relationships are similarly not designed to reflect the relational qualities that especially pertain to female friendships. The quality versus the quantity of supportive peer relationships is paramount among females compared to their male counterparts (Bryant, 1985; Waldrop & Halverson, 1975). Some studies examining gender differences in quality versus quantity have revealed that while boys and girls had networks of similar size (Riley & Cochran, 1987),

network size had differential significance. Interestingly, one study demonstrated that girls who had more intense and intimate friendships were rated as more socially mature, whereas boys who had a greater number of friends were found to be more socially mature (Waldrop & Halverson, 1975).

Research on peer friendships has shown that women's relationships were more dyadic, self-disclosing, empathic, and intimate than those of men; the latter tended to focus around shared activities and experiences, such as sports (Candy, Troll, & Levy, 1981). Females, in fact, rated the intimacy of the closest same-sex friendship as highly, or more highly than that with parents (Blyth & Foster-Clark, 1987; Buhrmester & Furman, 1987).

Community Relationships

In addition to dyadic relationships, such as close peer and mentor attachments, community or group affiliation is shown to have an important impact on social and psychological functioning. Community relationships contribute to sense of belonging, a unique, relational phenomenon defined as the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment. Hagerty, Williams, Coyne, & Early (1996, p. 236) described sense of belonging as embodying two characteristics "1) the experience of being valued, needed, or important with respect to other people, groups, or environments, and 2) the experience of fitting in or being congruent with other people, groups, or environments through shared or complementary characteristics." Hagerty and colleagues posit that prerequisites of sense of belonging include: 1) energy for involvement, 2) desire and potential for meaningful engagement, and

3) potential for shared or complementary attributes (Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992).

Consistent with theories and research that suggest that women participate in creating growth-fostering relationships that provide meaning and value in their lives (Jordan, Kaplan, Miller, Stiver, & Surrey, 1991), empirical data show that community membership and involvement was more related for women than for men to sense of belonging. In turn, sense of belonging seems to be more strongly related to social and psychological factors, such as loneliness, depression, and anxiety, for women than for men (Hagerty et al., 1996).

The Present Study

This article describes the development of the Relational Health Indices (RHI), a set of three scales that assess growth-fostering connections with peers, mentors, and communities. The RHI assesses four conceptual dimensions of growth-fostering relationships as mentioned above: engagement, authenticity, empowerment/zest, and difference/conflict.

In this study, we evaluated specific psychometric properties of the RHI, including factor structure, internal reliability, convergent and concurrent validity. Furthermore, the study incorporates an examination of the ways in which relationships foster psychological well-being. It was expected that adequacy of social support (Zimet, Dahlem, Zimet, & Farley, 1988), quality of social support (Pierce, Sarason, Sarason, & Solky-Butzel, 1997), mutuality in relationships (Genero, Miller, Surrey, & Baldwin, 1992) and self-esteem would be positively associated with growth-fostering relationships.

Depression (Radloff, 1977), loneliness (Russell, Peplau Cutrona, 1980), and perceived stress (Cohen, Kamarck, Mermelstein, 1983) were hypothesized to be inversely related.

METHODS

Initial Item Pool

An initial pool of items was developed using literature, focus groups, pilot testing, and careful content analysis. For the first draft, we relied upon the Stone Center theory group's relational framework of psychological development (Miller & Stiver, 1997; Jordan, et al., 1991; Surrey, 1985). Further, we reviewed the literature on social support, examined existing measures, and drew upon our own and Relational Model theorists' knowledge and experience. We identified four key aspects of growth-fostering relationships for our assessment--engagement, authenticity, empowerment/zest, difference/conflict. As a critical part of scale conceptualization and item construction, a series of separate focus groups was conducted with Relational Model theorists and with college students.

First, we conducted a focus group with Relational Model theorists to generate operational definitions of engagement, authenticity, empowerment/zest, and difference/conflict and to generate items to reflect these aspects in the contexts of the three relationships of interest. Theorists were then asked to rate the relevance of items in our initial item pool to Relational Model concepts. To ensure the relevance and wording of these concepts to respondents, a student focus group was convened to help define and identify relevant aspects of mentor, peer, and community relationships. They were then asked to: 1) complete the initial items; 2) indicate items that seemed ambiguous or that could

not be easily applied to the relationships of interest and suggest wording changes; 3) rate the significance of the relational characteristic assessed by each item. Based on feedback from these focus groups, items were added, omitted, or reworded.

As a third step in scale development, we pilot tested the entire survey, including the new measure and related adjustment scales to be used for validity testing. Respondents were asked to fill out the survey and to indicate items that seemed ambiguous or irrelevant. The items were modified and fine-tuned in light of pilot test results.

Finally, we asked Relational Model theorists to categorize each of the items as reflective of authenticity, engagement, difference/conflict, or empowerment/zest. They were asked to identify any aspects of these Relational Model concepts they felt were missing and should be included in a comprehensive assessment of growth-fostering mentor, peer, and community relationships.

Participants

The participants were 450 students enrolled in a small women's liberal arts college. Participants in this study were 28% Asian/Pacific Islander, 4.3% Black, 4.3% Hispanic, 1% Native-American, and 58% White and 4% other backgrounds. They ranged in age from 17 to 23 years ($M = 19$, $SD = 1.5$).

Measures

The RHI, the focus of the present study, consisted of three components: Mentor Relationship (25 items), Peer Relationship (23 items), and Community Relationship (28 items). Respondents

employed a five-point Likert-type scale (0=never to 4=always) to rate their relationships with a mentor, close peer, and selected community.

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, 1988) is a 12-item measure of perceived social support from three sources: family, friends, and a significant other. Items were rated on a seven-point scale from 1=very strongly disagree to 7=very strongly agree. The measure has reportedly adequate construct validity and each of the subscales have good internal validity with Cronbach's alphas between .90 and .95.

The Quality of Relationships Questionnaire (QRI; Pierce, Sarason, Sarason, & Solky-Butzel, 1997) was used to assess a close mentor and a close peer relationship. The measure used a Likert-type scale (ranging from 1=not at all to 4=very much) to assess three aspects of a dyadic relationship: support, depth, and conflict. Reliability and validity have been established in previous studies.

The Mutual Psychological Development Questionnaire (MPDQ; Genero, Miller, Surrey, & Baldwin, 1992) is a measure that reflects Relational Model concepts including perceived mutuality in close relationships. Respondents were asked to rate their perceptions of verbal interactions with a close friend or mentor, as well as their perceptions of their friend or mentor's experience of the interactions. Items were rated on a seven-point scale from 1=never to 7=all the time. Internal reliability (ranging from .86 to .93) and test-retest reliability as well as construct and concurrent validity have been demonstrated.

Loneliness was measured by the UCLA Loneliness Scale (RULS; Russell, et al., 1980) using items rated on a scale from 1=never to 4=always. This 20-item self-report measure has demonstrated

validity and reliability. A high internal consistency is evident with .94 coefficient alphas over several studies. Evidence of construct and discriminant validity have been cited (Russell, et al., 1980).

The Center for Epidemiological Studies Depression Scale (CES-D) is a widely used 20-item self-report measure of depression (Radloff, 1977). The CES-D assesses symptoms of depressed mood and somatic complaints that frequently accompany clinical depression. Items are rated on a Likert-type scale ranging from 1=rarely or none to 4=most or all. The measure has demonstrated reliability and validity.

Rosenberg's Self-Esteem Scale (SE, Rosenberg, 1965) is a 10-item measure of self-esteem. Items regarding an individual's self-perceptions are rated on Likert-type scale from 1=disagree a lot to 4=agree a lot. Its reliability and validity have been established with numerous populations.

The Perceived Stress Scale (PSS, Cohen, Kamarck, Mermelstein, 1983) is a 14-item Likert style measures designed to assess the degree to which situations in one's life are appraised as stressful. Respondents used a five-point Likert-type scale (ranging from 1=never to 5=very often) to rate their stress level in the past month. The PSS has demonstrated adequate test-retest (.85), alpha reliability (ranging from .84 to .86) and validity.

Procedure

All 597 first year students and 252 randomly selected fourth year students were sent via campus mail a questionnaire and cover letter asking them to participate in a study of relationships and health and explaining that identifying information would be kept confidential and separate from survey data. Those who completed surveys were given the opportunity to be entered into a raffle for

several cash prizes. The return rate for surveys was 53%; and participants were representative of the overall student population in ethnic background. The survey contained measures of relational health, adequacy of social support, depression, self-esteem, other related adjustment measures, and demographic information. With the exception of the inclusion of versions of the Mutual Psychological Development Questionnaire and Quality of Relationships Inventory used for validity testing, all participants received the same assessment packet¹.

ANALYSES & RESULTS

Relational Model Item Selection

Analyses conducted within subscale. In order to select the best indicators of relational health, a number of steps were followed. First, items that had been identified by theorists as belonging to each subscale in the Relational Theory Model (i.e., Zest, Authenticity, Differences, and Empathy/Engagement) were included in analyses to assess internal consistency. These analyses were conducted separately for each relationship domain (i.e., peer, mentor, and community). Using SPSS version 7.0, Cronbach's alpha coefficient was computed for each subscale. If the internal consistency of the subscale could be improved by dropping an item, the analysis was rerun without that item and

¹A "planned missingness" approach (where respondents complete only a portion of the full battery of measures) was taken in this study in order to guard against respondent fatigue. Each respondent completed one each of the peer and mentor validation scales. In this approach, the missing data, because it is missing at random, can be imputed without bias (refer to Shafer, in press). Data imputation was completed by means of a Bayesian-based computer program (NORM; Shafer, in press), which represents the state-of-the-art in data imputation.

the subscale reassessed. This process stopped when the subscale could no longer be improved substantially by dropping a single item.

The remaining items for each subscale were then submitted to an exploratory principal components analysis and the solution was rotated obliquely. Scree plots of the eigenvalues showed that only one component was indicated for each subscale, as hypothesized. Further, items that yielded relatively low loadings ($<.50$) on this first component were dropped from further analyses.

Analyses conducted across subscales. Subscale items were put to an even more stringent test in the second round of analyses. Items within each subscale having adequate internal consistency and strong loadings were combined in a single exploratory principal component analysis. A satisfactory four component solution was selected for each relational domain by discarding items that did not discriminate well between multiple subscales (i.e., did not lend to the simple structure of the solution) or that loaded primarily on a subscale other than the one to which theorists had assigned it². From the final solution, the best three indicators of each subscale were selected within each relational domain. These items and the alpha coefficients associated with these items are reported in Table 2. The full text for these items is included in Appendix A. Generally, the alpha coefficients were acceptable for these abbreviated scales with a few exceptions (peer-differences, mentor-differences, and peer-empathy/engagement). Also, note that two of the differences subscales include only two

²In a few cases, items that cohered consistently to a set of items initially assigned to a different subscale were re-evaluated. In most of these cases, theorists had recommended inclusion of an item in more than one subscale, so we felt justified in reassigning those items to the subscale indicated by the data when this subscale represented a secondary assignment. In all, 4 of the 34 final items were reassigned.

items. Here, only these two items passed the selection criteria we imposed. In each relational domain, however, the internal consistency of the overall scale was well within acceptable limits.

Insert Table 1 here

Factor structure across domains. In order to determine how the items behave as a relational system, a confirmatory factor analysis (using LISREL 8; Jöreskog & Sörbom, 1996) was conducted with the final items in all three relational domains. With the exception of one loading per factor which defined the scale of the latent construct, the loadings of the items were estimated freely. In addition, none of the items were allowed to load onto more than one factor. The errors structure of this model was assumed to be heteroscedastic and independent.

This initial model showed evidence of difficulty converging. One of the estimates of error variance was negative and modification indices suggested that the mentor-differences factor was problematic. Therefore, this model was rerun, without the mentor-differences factor, yielding a much more satisfying solution. The goodness-of-fit index (GFI), which could range from 0.00 to 1.00, was .79, indicating that the model fit the data well. The standardized solution for this model is shown in Figure 1 in Appendix B. The parameter estimates for this model show that some items can be improved somewhat. Also, it appears that relational health in the peer and mentoring domains (dyadic relationships) are more strongly related to each other ($r = .44$) than with relational health in the community domain ($r = .25$ and $r = .21$, respectively).

Convergent and Concurrent Validity

Bivariate relationships. Scatterplots of the relationships between relational health and the various associated validity constructs were constructed and examined. These plots show that linear relationships could be expected. Several points were identified as outliers. These represented either extreme points in one of the marginal distributions, or, in one case, an influential point evident in the bivariate distribution. These outliers represented no more than 3 cases per scatterplot, many of these outliers were associated with the same respondent. Therefore, these outliers were discarded prior to calculating correlations between these variables. See Table 2 for correlation matrix.

As expected, RHI-Peer, RHI-Mentor, and RHI-Community relationships were all significantly positively correlated with self-esteem. Perceived stress was negatively correlated to community relationship; depression was negatively correlated with both RHI-P and RHI-C.

Loneliness was negatively correlated with RHI-P, RHI-M, and RHI-C. Furthermore, RHI-P was correlated with the composite QRI-F scale and each of its subscales, including QRI-F Conflict, QRI-F Depth, QRI-F Support. It was also correlated with the MSFR and the MPDQ-F. RHI-M was positively correlated with the QRI-M Depth and QRI-M Support subscales. It was also correlated with the MPDQ-M.

Insert Table 2 here

DISCUSSION

The current study provides evidence for the reliability, validity, and utility of the new Relational Health Indices in several ways. First, the principal components factor analysis confirms that individuals make distinctions based on four types of relational qualities: authenticity, engagement, empowerment/zest, conflict/difference. Second, the internal reliability investigation, which used Cronbach's alpha, suggests good internal consistency for each of the three composite indices, as well as for the Community subscales and most of the Mentor subscales. Internal reliability for the Peer Conflict/Difference and Engagement and Mentor Conflict/Difference subscales may be enhanced with the addition of reliable items to increase the alphas. Finally, further evidence of the RHI's validity was found in the intercorrelations of the RHI measures with related measures.

These data suggested that college-aged women with growth-fostering peer, mentor and community relationships are less likely to report feelings of loneliness. Furthermore, growth-fostering peer and mentor relationships are significantly associated with perceived mutuality within those relationships and perceived support adequacy. The quality of one's community connection was more predictive of lower depression and loneliness scores than were peer or mentor relationship. Self-esteem was associated with all three relationship types.

It is interesting to note that the RHI Peer and Mentor scales are most highly correlated with one another and that the Community scale functions in a somewhat more independent manner. This pattern suggests that relationship with a community is experienced differently from a relationship with a close peer and a close mentor. One explanation may be that the dynamics of dyadic relationships are subjectively distinct from group dynamics. For instance, individuals who are able

to form intimate one-to-one relationships may still have difficulty feeling a sense of belonging in a larger social context.

In another aspect, results of confirmatory analyses revealed that mentor relationships might contrast with peer and community relationships. Specifically, findings indicated that the mentor difference/conflict subscale did not seem to be compatible with the other mentor subscales. Inspection of the subscale items revealed that the difference/conflict subscale items in the peer and community domains reflect two facets of difference--difference as a *foundational* quality (e.g., different ethnic background) and as a *dynamic/affectional* quality (e.g., active conflict/discord). The mentor items reflect only the latter, that is, the conflict or affectional quality of difference. By definition, the mentor relationship is predicated on differences in such areas as skill-level, age, expertise, and education. Key examples are relationships between students and teachers, and coaches and young athletes. Our findings suggest that these more role-bound and restrictive relationships may actually be less tolerant of conflict. Because peer relationships (and often-times community relationships) are predicated on sameness, they may be less threatening, less bounded, and paradoxically more tolerant or resilient in the face of difference or conflict. Thus, an interesting, logical distillation of this argument would be that a relationship initially founded on sameness may be more resilient and more open to difference, and may therefore have potential for a richer combination of these relational constructs. In order for a mentor relationship to become more enduring of difference or conflict it may need to evolve toward greater mutuality or sameness over time as growth in the relationship takes place. In the meantime, we may need alternatively worded items to reflect the kind of difference/conflict that is tolerable and relevant in mentor relationships.

As illustrated thus far, the new Relational Health indices have great potential for enriching our understanding of important subtle qualities and complex dynamics of both dyadic and group relationships. The two measures of relationship quality employed in our validity analyses, the Mutual Psychological Development Questionnaire (Genero, et. al, 1992) and the Quality of Relationship Inventory (Pierce, Sarason, Sarason, & Solky-Butzel, 1997), include a number of concepts that may be similar to those assessed by the RHI. The RHI is, however, distinct and additive in a number of ways. First, the RHI is designed to assess three specific types of relationships, and therefore contains items that are designed to reflect these specific relationships. Furthermore, whereas the MPDQ is an assessment based on impressions during *verbal interaction* with a partner, the RHI allows for a broader assessment of relational quality not limited to that evidenced in verbal interaction, and including self-reported attitudinal and behavioral assessments in more general context (e.g., I can be genuinely myself with my mentor). This is particularly useful in assessing mentor relationships whose growth-fostering impact may occur through various modes (other than dyadic, verbal interaction), such as classroom or group instruction, coaching on a sports team, role-modeling, or advocacy. In the same way, growth-fostering community or group interaction may be manifest in ways other than in verbal communication, such as, through shared physical activities. Furthermore, the RHI items reflect four empirically distinct attributes of growth-fostering relationships or relational health, whereas the MPDQ empirically reflects a more unitary concept. Finally, the RHI adds to the previous measures by having the capacity to assess non-dyadic or group relationships.

Limitations

Although we expect our overall results to be generalizable to college-aged women, they should be interpreted within the limitations of our study. Two potential sampling biases should be taken into account. First, because we plan to do both a cross-sectional comparison of first year and fourth year students, as well as a longitudinal follow-up study of the first year students, we limited our sample of college students to first and fourth year students. Therefore, our sample may not be fully representative of students in their middle years of college, who are not subject to the same transitional stresses of students starting college and those leaving college. Second, there may be a sampling bias due to self-selection (because the response rate was approximately 50 percent), in that those who chose not to complete the survey may have represented a subsample of students who were particularly *disconnected in their relationships*. Such a bias would serve to underestimate the reliability of the measures by decreasing the variance of the scores; the measures may perform even *better* with a sample from the full range of relatedness. An additional bias may be related to our method of analyses. Specifically, the sequence of item selection steps was conducted on the entire sample rather than selecting items based on a subsample and cross-validating the results in a second subsample. The implication of this is that these results may be too closely tailored to the idiosyncracies of these data. For these reasons, our results should be further confirmed by replication in other samples. Furthermore, internal reliability for subscales such as peer differences and peer engagement may be strengthened after further testing.

Finally, it is important to keep in mind that these correlational data do not imply directionality of cause in the negative relationships between RHI scales and depression, perceived stress, and

loneliness; nor the positive correlations between the RHI scales and self-esteem. Subsequent studies should be conducted, perhaps using longitudinal designs, to address causality.

Future Directions

The study of relational health of growth-fostering relationships represents an exciting direction for future research as it elaborates our understanding of the beneficial qualities of relationships. Whereas existing social support measures have tended to focus on structure, quantity, tangible and general functions of support, Relational Health represents more nuanced aspects of interpersonal connections that are thought to be fundamental to psychological development. Although Relational Theory emerged from the study of women, we intend to validate the RHI across gender, ethnic groups, and other diverse populations to expand our understanding of the complexity of relational health and its impact on other areas of biopsychosocial adjustment. For example, the RHI will be administered to a population of low-income, ethnically diverse women enrolling at an urban housing project, adolescents with chronic abdominal pain, and women in sports.

REFERENCES

- Barrera, M., Jr, & Ainley, S. (1983). The structure of social support: A conceptual and empirical analysis. *Journal of Community Psychology, 11*, 133-143.
- Beck, L. (1989). Mentorships: Benefits and effects on career development. *Gifted Child Quarterly, 33*(1), 22-28.
- Beeber, L.S. (1998). Social support, self-esteem, and depressive symptoms in young American women. *Image-the Journal of Nursing Scholarship, 30*, 91-92.
- Belle, D. (1987) Gender differences in the social moderators of stress. In R. Barnett, L. Biener, & G. Baruch (Eds.), *Gender and Stress* (pp. 257-277). New York: Free Press.
- Blyth, D. A., & Foster-Clark, F. S. (1987). Gender differences in perceived intimacy with different members of adolescent's social networks, *Sex Roles, 17*, 689-718.
- Blyth, D. A., Hill, J. P., & Smith, T. K. (1982) . Early adolescents' significant others: Grade and gender differences in perceived relationships with familial and nonfamilial adults and young people. *Journal of Youth and Adolescence. 11*, 425-450.

Bolton, E. B. (1980). A conceptual analysis of the mentor relationship in the career development of women. *Adult Education, 4*, 195-207.

Boyce, P., Harris, M., Silove, D., Morgan, A., Wilhelm, K., & Hadzi-Pavlovic, D. (1998). Psychosocial factors associated with depression: A study of socially disadvantaged women with young children. *Journal of Nervous and Mental Disease, 186*, 3-11.

Bryant, B. K. (1985). The neighborhood walk: Sources of support in middle childhood. *Monographs of the Society for Research in Child Development, 50*(3, Serial No. 210).

Buhrmaster, D., & Furman, W. (1987). The development of companionship and intimacy. *Child Development, 58*, 1101-1113.

Burnett, P. C., & Demnar, W.J. (1996). The relationship between closeness to significant others and self-esteem. *Journal of Family Studies, 2*, 121-129.

Burton, A. (1977). The mentoring dynamic in therapeutic transformation. *American Journal of Psychoanalysis, 37*, 115-122.

Candy, S. G., Troll, L. W., & Levy, S. G. (1981). A developmental exploration of friendship functions in women. *Psychology of Women Quarterly, 5*, 456-572.

Carden, A. D. (1990). Mentoring and adult career development: The evolution of a theory.

Counseling Psychologist, 18, 275-299.

Cauce, A. M., Felner, R. D., & Primavera, J. (1982). Social support in high-risk adolescents:

Structural components and adaptive impact. *American Journal of Community*

Psychology, 10(4), 417-428.

Cohen, S., & Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress.

Journal of Health & Social Behavior, 24, 385-396.

Connor, K. A., Powers, E. A., & Bultena, G. L. (1979). Social interaction and life satisfaction:

An empirical assessment of late life patterns. *Journal of Gerontology, 34, 116-121.*

Fiore, J., Becker, J., & Coppel, D. B. (1983). Social network interactions: A buffer or a stress?

American Journal of Community Psychology, 11, 423-439.

Galbo, J. J. (1986). Adolescents perceptions of significant adults: Implications for the family

and the school and youth serving agencies. *Children and Youth Services Review, 8, 35-51*

Garbarino, J. J., Burston, N., Raber, S., Russell, R., & Crouter, A. (1978). The social maps of children approaching adolescence: Studying the ecology of youth development. *Journal of Youth and Adolescence*, 7, 417-428.

Gawronski, I., & Privette, G. (1997) Empathy and reactive depression. *Psychological Reports*, 80, 1043-1049

Genero, N. P., Miller, J. B., Surrey, J., & Baldwin, L.M. (1992). Measuring perceived mutuality in close relationships: Validation of the Mutual Psychological Development Questionnaire. *Journal of Family Psychology*, 6, 36-48.

Gottlieb, B. H. (1992). *Social support strategies: Guidelines for mental health practice*. Beverly Hills, CA: Sage.

Graham, J.W., Hofer, S.M., & MacKinnon, D. P. (1996). Maximizing the usefulness of data obtained with planned missing value patterns: An application of maximum likelihood procedures. *Multivariate Behavioral Research*, 31, 197-218.

Graham, J.W., Hofer, S.M., Donaldson, S.I., MacKinnon, D.P., & Schafer, J.L. (1997).

Analysis with missing data in prevention research. In K. Bryant, M. Windle, & S. West (Eds.), *The science of prevention: Methodological advances from alcohol and substance abuse research* (pp. 325-366). Washington, D.C.: American Psychological Association.

Hagerty, B. M. K., Lynch-Sauer, J., Patusky, K., Bouwsema, M. & Collier, P. (1992), Sense of belonging: A vital mental health concept. *Archives of Psychiatric Nursing*, 6, 172-177.

Hagerty, B.M., Williams, R.A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of Psychiatric Nursing*, 10, 235-244.

Hall, C.B., & Nelson, G. (1996) Social networks, social support, personal empowerment, and the adaptation of psychiatric consumers/survivors: Path analytic models. *Social Science & Medicine*, 43, 1743-1754.

Hamilton, S.F., & Darling, N. (1996). Mentors in adolescents' lives. In K. Hurrelman & S. Hamilton (Eds.), *Social problems and social contexts in adolescence: Perspectives across boundaries* (pp. 199-215). New York, NY, USA.

Hammer, M., (1981). Social supports, social networks and schizophrenia, *Schizophrenia Bulletin*, 7, 45-47.

Healy, C. C., & Welchert, A. J. (1990). Mentoring relationships: A definition to advance research and practice. *Educational Researcher*, 12, 17-21.

House, J. S., (1981). *Work, stress and social support*. Reading, Ma: Addison-Wesley.

Jordan, J. V., Kaplan, A. G., Miller, J. B., Stiver, I. P., & Surrey, J. L. (1991). *Women's growth in connection*. New York: Guilford Press.

Jordan, J. V. (1997). The Relational Model is a source of empowerment for women. In M. R. Walsh (Ed.) *Women, Men and Gender: Ongoing Debates*. New Haven: Yale.

Joreskog, K.G. & Sorbom, D. (1996). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Kashani, J.H., Burbach, D.J., & Rosenberg, T.K. (1988). Perception of family conflict resolution and depressive symptomatology in adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, 27, 42-48.

Kay, B., & Christophel, D.M. (1995). The relationships among manager communication openness, nonverbal immediacy, and subordinate motivation. *Communication Research Reports*, 12, 200-205.

- Komproe, I.H., Rijken, M., Ros, W.J.G., Winnubst, J.A.M., & et al. (1997). Available support and recieved support: Different effects under stressful circumstances. *Journal of Social and Personal Relationships, 14*, 59-77.
- Kram, K. E. (1985). *Mentoring at work: Developmental relationships in organizational life*. Glenview, IL: Scott Foresman.
- Lee, C. (1997). Social context, depression, and the transition to motherhood. *British Journal of Health and Psychology, 2*, 93-108.
- Leveton, L. B., Griffin, R. M., & Douglas, T. J. (1979). *Social supports and well being in urban elderly*. Unpublished manuscript
- Levinson, D. (1978). Major tasks of the novice phase. In *The seasons of a man's life* (pp.97-101). New York: Knopf.
- Lin, N. (1986). Conceptualizing social support. In N. Lin, A. Dean, & W. Ensel (Eds.), *Social support, life events, and depression* (pp. 129-152). San Diego, CA: Academic Press.

Logsdon, M.C., & Usui, W.M., & Cronin, S.N., & Miracle, V.A. (1998). Social support and adjustment in women following coronary artery bypass surgery. *Health Care for Women International, 19*, 61-70.

Merriam, S. (1983). Mentors and proteges: A critical review of the literature. *Adult Education Quarterly, 33*, 161-175.

Miller, J.B. (1988). Connections, Disconnections, and Violations. *Work in Progress 33*. Wellesley, Mass.: Stone Center Working Paper Series.

Miller, J.B., & Stiver, I. & Jordan, J.V., & Surrey, J.L. (1995). The psychology of women: A relational approach. In J Fadiman & R. Frager (Eds.), *Personality and personal growth*, (pp. 159-179). New York: Harper Collins.

Miller, J. B. & Stiver, I. P. (1997). *The Healing Connection*. Beacon Press: Boston.

Mitchell, R.E., & Hodson, C.A. (1983). Coping with domestic violence: Social support and psychological health among battered women. *American Journal of Community Psychology, 11*, 629-654.

- Parks, S. H., & Pillisuk, M. (1984). Personal support systems of former mental patients residing in board-and-care facilities. *Journal of Community Psychology, 12*, 230-244.
- Pierce, G. G., Sarason, I. G., Sarason, B. R., & Solky-Butzel, J. A., et al. (1997). Assessing the quality of personal relationships. *Journal of Social and Personal Relationship, 14*, 3, 339-356.
- Radloff, L.S.(1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Riley, D., & Cochran, M. (1987). Children's relationships with non-parental adults: Sex specific connections to early school success. *Sex Roles, 17*(11/12), 637-655.
- Russell, D., Cutrona, C. E., Rose, J., & Yurko, K. (1984). Sound and emotional loneliness: An examination of Weiss's typology of loneliness. *Journal of Personality and Social Psychology, 46*, 1313-1321.
- Russell, D., Peplau, L.A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality & Social Psychology, 39*, 472-480.

- Schaefer, C., Coyne, J. C. & Lazarus, R. S. (1981). The health related functions of social support. *Journal of Behavioral Medicine*, 4, 381-406.
- Schafer, J.L. (in press). *Analysis of incomplete multivariate data*. London: Chapman & Hall.
- Schreurs, K.M.G., & Buunk, B.P. (1996). Closeness, autonomy, equity, and relationship satisfaction in lesbian couples. *Psychology of Women Quarterly*, 20, 577-592.
- Sheffield, M., Carey, J., Patenaude, W., & Lambert, M.J. (1995). An exploration of the relationship between interpersonal problems and psychological health. *Psychological Reports*, 76, 947-956.
- Shulman, S., & Knafo, D. (1997). Balancing closeness and individuality in adolescent close relationships. *International Journal of Behavioral Development*, 21, 687-702.
- Spreitzer, G.M. (1995). An empirical test of a comprehensive model of intrapersonal empowerment in the workplace. *American Journal of Community Psychology*, 23, 601-629.
- Stewart, J.A., & Clarke, V.A. (1995). The role of social support in ameliorating stress in separated women with children. *Australian Journal of Psychology*, 47, 164-170.

- Stokes, J. P., & Wilson, D. G. (1984) The inventory of socially supportive behaviors: Dimensionality, prediction, and gender differences. *American Journal of Community Psychology, 12*, 53-70.
- Surrey, J. (1985). The "self-in-relation": A theory of women's development. *Work in Progress 84:02*. Wellesley, Mass.: Stone Center Working Paper Series.
- Testa, M., Miller, B.A., Downs, W.R., & Panek, D. (1992). The moderating impact of social support following childhood sexual abuse. *Violence & Victims, 7*, 173-186.
- Valentine, L., & Feinauer, L. L. (1993). Resilience factors associated with female survivors of childhood sexual abuse. *American Journal of Family Therapy, 21*, 216-224.
- Vaux, A., Riedl, S., & Stuart, D. (1987). Modes of social support: The Social Support Behaviors (SS-B) Scale. *American Journal of Community Psychology, 53*, 30-41.
- Waldrop, M., & Halverson, C. (1975). Intensive and extensive peer-behavior: Longitudinal and cross-sectional analysis. *Child Development, 46*, 19-26.
- Warren, B.J. (1997). Depression, stressful life events, social support, and self-esteem in middle class African American women. *Archives of Psychiatric Nursing, 11*, 107-117.

Westkott, M.C. (1997). On the new psychology of women: A cautionary view. In M.R. Walsh (Ed.) *Women, Men, and Gender: Ongoing Debates*. New Haven: Yale.

Zimet, G.D., Dahlem, N.W., Zimet, S.G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52, 30-41.

Zhang, Q. (1994). An intervention model of constructive conflict resolution and cooperative learning. *Journal of Social Issues*, 50, 99-116.

Appendix A. Final selection of items for Relational Health Indices.

(0=never; 1=seldom; 2=sometimes; 3=often; 4=always)

PEER

ZEST/EMPOWERMENT:

- 16. I feel positively changed by my friend.
- 18. After a conversation with my friend, I feel uplifted.
- 19. I feel as though I know myself better through my connection with my friend.

AUTHENTICITY:

- 29. Even when I have difficult things to share, I can be honest and real with my friend.
- 31. I am truthful with my friend even when it might hurt his/her feelings.
- 32. I can tell my friend when he/she has hurt my feelings.

DIFFERENCES:

- 14. I accept the differences between my friend and myself.
- 15. Even when we argue, I try to understand how he/she feels about the subject.

EMPATHY/ ENGAGEMENT:

- 10. It is important to us to make our friendship grow.
- 23. The more time I spend with my friend, the closer I feel to him/her.
- 25. My friendship inspires me to seek other friendships like this one.

COMMUNITY

ZEST/EMPOWERMENT:

4. Being a member of this community gives me a better sense of who I am.
5. I feel better about myself after my interactions with this community.
6. I feel mobilized to personal action after meetings within this community.

AUTHENTICITY:

13. It doesn't feel comfortable to be genuinely myself in this community.
24. Members of this community are not free to just be themselves.
25. There are parts of myself I feel I must hide from this community.

DIFFERENCES:

20. Differences of opinion among members are accepted within this community.
21. Members of this community can express different opinions without feeling judged and rejected.
27. Differences of background among members are not accepted within this community.

EMPATHY/ ENGAGEMENT:

7. I feel understood by members of this community.
8. If members of this community know something is bothering me, they ask me about it.
9. It seems as if people in this community really like me as a person.

MENTOR

ZEST/EMPOWERMENT:

12. I feel uplifted and energized by conversations with my mentor.
13. My mentor helps me to feel I can do things I didn't think I could do.
14. I feel as though I know myself better because of my mentor.

AUTHENTICITY:

21. I can be genuinely myself with my mentor.
22. I believe my mentor values me as a whole person (e.g., professionally/academically and personally).
23. My mentor gives me constructive and honest feedback.

DIFFERENCES:

28. My mentor makes me feel responsible for meeting his/her needs.
29. My mentor places excessive demands on me.

EMPATHY/ ENGAGEMENT:

18. My mentor shares personal experiences, feelings, and thoughts with me.
19. It is important to me to foster the growth of this relationship.
34. My mentor shares stories about his/her own experiences with me in a way that enhances my life.

Table 1. Alpha coefficient by relational domain.

	PEER (N~440)	COMMUNITY (N~440)	MENTOR (N~300)
ZEST/ EMPOWERMENT	$\alpha=.7530$	$\alpha=.8436$	$\alpha=.7479$
AUTHENTICITY	$\alpha=.7480$	$\alpha=.7800$	$\alpha=.7525$
CONFLICT/DIFFERENCES	$\alpha=.5425$	$\alpha=.7663$	$\alpha=.6429$
EMPATHY/ ENGAGEMENT	$\alpha=.6258$	$\alpha=.7983$	$\alpha=.7974$
OVERALL	$\alpha=.8243$	$\alpha=.8727$	$\alpha=.7645$

Table 2. Zero-Order Pearson Product-Moment correlations for construct validity testing.

	RHI-Peer	RHI-Mentor	RHI-Community
Concurrent Validity Scales			
1) Depression	-.12 ^a	-.08	-.40 ^b
2) Self-esteem	.18 ^b	.21 ^b	.23 ^b
3) Percieved stress	-.08	-.05	-.33 ^b
Convergent Validity Scales			
1) Loneliness	-.36 ^b	-.20 ^b	-.46 ^b
2) QRI-Peer/Mentor Composite	.17 ^b	.08	NA
a) Support subscale	.38 ^b	.20 ^b	NA
b) Depth subscale	.34 ^b	.14 ^b	NA
c) Conflict subscale	-.22 ^b	-.11	NA
3) MPDQ-Peer/Mentor	.52 ^b	NA	NA
4) MSPSS-Friend Subscale	.51 ^b	NA	NA

^a $p < .05$, ^b $p < .001$.

Figure 1. Standardized parameter estimates for the Relational Health model with second-order latent variables.

Fig. 1: Standardized parameter estimates for the cross-domain confirmatory factor analysis.

