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MEASURING ERIKSONIAN DEVELOPMENT IN THE ADULT: THE MODIFIED ERIKSON PSYCHOSOCIAL STAGE INVENTORY

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Summary.—To measure psychosocial attributes that arise from progression through Erik Erikson's eight stages of development, a new inventory was developed by modifying the Erikson Psychosocial Stage Inventory by Rosenthal, Gurney, and Moore, which assesses Erikson's first six stages of life cycle development. New scales were created to measure the last two stages. To conduct an empirically based revision and evaluate its psychometric qualities, the modified version and potential items for the two new scales were administered to a convenience sample of 168 men and women whose ages ranged from 19 to 86 yr. Alpha reliability coefficients for this 80-item instrument were trust .82, autonomy .84, initiative .78, industry .88, identity .85, intimacy .78, generativity .75, ego integrity .80, and .97 for the entire scale. The construct validity was indicated by positive correlations between chronological age and the attributes associated with adulthood, an increase in mean generativity and ego integrity levels with age, and an association between the strength of attributes and participation in regular exercise. Reliability and validity of this modified inventory were supported.

The first six stages of Eriksonian psychosocial development have been the focus of numerous studies of children and adolescents. To date, however, there has been little research describing Erikson's eight developmental stages in adults. This may be related to the scarcity of reliable and valid instruments to measure and test Erikson's theory in the adult population. The purpose of this investigation was to develop and evaluate an instrument, the Modified Erikson Psychosocial Stage Inventory (MEPSI), designed to measure the strength of attributes that arise from progression through Erikson's eight stages of psychosocial development.[2]

The modified version builds on an instrument developed by Rosenthal, Gurney, and Moore (1981), the Erikson Psychosocial Stage Inventory, which was designed to measure Erikson's first six stages of development. Each of the instrument's six scales was comprised of 12 short simple statements, six reflecting the attribute derived from successful resolution of a given crisis, and six

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reflecting the attribute derived from unsuccessful resolution. Items were developed by identifying key words and phrases from Erikson's writings (1959, 1963, 1968) that denoted characteristics of each stage through intimacy/isolation. The 72 statements were randomly ordered, each followed by a 5-point Likert scale (Almost Always True to Hardly Ever True). The instrument took approximately 15 minutes to complete.

The Erikson inventory was pilot tested on 107 Australian high school students and subsequently administered to a sample of 622 Australian adolescents for further testing. Alpha reliability coefficients ranged from .57 to .75. To assess the construct validity, the differences in adjustment scores between the older and younger respondents and between men and women were examined. As predicted, older students scored significantly higher on each subscale. Sex differences were also noted. Men had significantly higher autonomy, initiative, and industry scores and women had higher intimacy scores.

Despite the apparent reliability, validity, and ease of administration of the original inventory, there are several limitations to its use with adults. First, it was designed for young Australians, and several items reflect Australian colloquialisms and/or are not appropriate for an older age group. Second, the inventory was never tested on an adult sample and the final two stages of generativity/stagnation and ego integrity/despair were not included (D. Rosenthal, personal communication with T. MacLean, November 20, 1985). Given these constraints, the investigators modified the inventory by reducing the number of items to 10 per scale (5 per positive and 5 per negative attribute) and by adding 20 new items to reflect attributes associated with the stages of generativity/stagnation and ego identity/despair. This produced an 80-item questionnaire, the Modified Erikson Psychosocial Stage Inventory, that was comprehensive yet easy to administer.

METHOD

Instrument Development

To ensure maximum content validity of the new inventory, six experts in Eriksonian developmental psychology participated in the instrument's development. To measure attributes from Erikson's first six stages, 60 items (5 positive and 5 negative attributes associated with each stage; 10 per subscale) were selected from the original version. Each judge and the principal investigators reviewed the instrument and eliminated items that (1) were identified by Rosenthal, *et al.* as detracting from the subscale's reliability, (2) were repetitious, (3) reflected Australian or adolescent colloquialisms, (4) were less applicable to an adult, and (5) were judged to measure inadequately or inappropriately an Eriksonian construct in an adult. The wording of two items was also changed.

The generativity/stagnation and ego identity/despair subscales were developed using a process similar to Rosenthal, *et al.* (1981). Key words and phrases describing attributes associated with the four dimensions (generativity, stagnation, ego integrity, and despair) were compiled from Erikson's writing (1959, 1963, 1968, 1982). These were used to generate a wide variety of potential items. To maximize content validity, a pool of 52 items was submitted to the six experts who were asked to evaluate each item on the basis of clarity, conceptual precision, projected psychometric properties (e.g., distribution), and potential contribution to the validity and reliability of the subscale. The judges were directed to check the five items which best met the criteria for selection and delete those they strongly felt were not appropriate. To permit empirically based item elimination, 8 items from those recommended by the judges were selected to reflect each dimension (16 items per scale). These new items were added to the reduced version of the original inventory to form a 92-item inventory. This instrument and a short demographic survey took approximately 20 min. to complete.

Sample

The preliminary modified version of the inventory was administered to a convenience sample of 168 adults during a three-day community-based health screening program. The sample was comprised of 56 men and 112 women, 19 to 86 yr. of age ($M = 47.0$, $SD = 15.5$, $Mdn = 48$ yr.). The mean age of male ($M = 46.6$, $SD = 16.7$) and female ($M = 47.2$, $SD = 15.0$) participants was not significantly different ($t = -.27$, $p = .79$). The subjects were predominantly white (92%, $n = 150$). Most were married (61.8%, $n = 102$), with 18.8% ($n = 31$) single, and the remainder (15.1%, $n = 25$) either divorced, widowed, or separated. The majority had children (68.5% $n = 113$). The sample was well educated, with 46.1% ($n = 76$) reporting a minimum of a college education and 22.4% ($n = 37$) possessing a high school education or below. Thirty percent ($n = 45$) estimated their yearly income to be $30,000 and above, while 18.7% ($n = 28$) reported earnings of under $10,000. Over-all, on a scale of poor (1) to excellent (5), the respondents felt that their health was good ($M = 3.99$, $SD = .83$), with 28.7% ($n = 47$) rating their health as excellent. Fifty-three subjects (31.5%) reported having some form of chronic illness (i.e., arthritis, hypertension, diabetes, emphysema, heart disease).

Procedure

Item distributions and within subscale correlations of the 92 items were examined. Selection for inclusion in the final version of the modified inventory was based upon (1) response distribution, (2) relative interitem and item-total correlations (within each subscale), (3) the theoretical meaning of

the item, and (4) comments of the participants. Using these criteria, four of the original items were deleted. These were later replaced by four newly developed ones. Twenty items were selected to formulate the generativity/stagnation (10 items) and ego integrity/despair (10 items) subscales.

Scores were obtained by reversing the values of negative items and calculating subscale means for any subject answering a minimum of six of the ten items included in each subscale (three of the five positive items and three of the five negative items). Because one positive item was deleted from each of the autonomy, initiative, and intimacy subscales, and one negative item from the trust subscale, criteria for mean calculation was more stringent (three out of four) for these scales. A high score (4—5) reflected a predominance of positive attributes, a low score (1—2) reflected a predominance of negative attributes.

Results and Discussion

Sample means for the eight modified subscales may be seen in Table 1.

Cronbach's formula for coefficient alpha was used to calculate the reliability levels of the eight subscales contained within the modified inventory. The statistically conservative approach of using case-wise deletion of missing data to formulate the correlation matrices was used in the calculations. To maximize sample size, reliability coefficients were calculated using a separate correlation matrix for each subscale, hence the slight variation in sample size. Reliability coefficients for the eight subscales were: trust .82 ($n = 157$), autonomy .84 ($n = 160$), initiative .78 ($n = 153$), industry .88 ($n = 151$), identity .85 ($n = 157$), intimacy .78 ($n = 157$), generativity .75 ($n = 157$), and ego integrity .80 ($n = 159$). The coefficient for the entire scale was .97 ($n = 126$), indicating that a unidimensional construct was being measured and a single summative scale, reflecting the general strength of psychosocial attributes, could be used.

TABLE 1

Sample Means and Standard Deviations for Subscales of Modified Version of the Erikson Psychosocial Stage Inventory

Subscale and Total	*n*	*M*	*SD*	*Mdn*
Modified Inventory	163	4.04	.55	4.10
Trust	166	3.98	.68	4.10
Autonomy	166	4.19	.63	4.33
Initiative	164	4.10	.62	4.15
Industry	165	4.16	.69	4.30
Identity	167	4.11	.71	4.30
Intimacy	165	3.83	.66	3.96
Generativity	165	3.95	.63	4.10
Ego Integrity	165	3.99	.66	4.10

Demographic characteristics of the sample seemed to have little effect on the scores of the modified inventory. No Pearson correlation was found between income and total attributes ($r = .07$), and a significant, but not substantive, correlation was found between education and attributes ($r = .17$, $p < .05$). The relationship between employment status and psychosocial attributes was also examined. As expected, the ages among the groups were significantly different (full-time, $M = 39.22$, $n = 78$; part-time, $M = 47.45$, $n = 47$; and unemployed, $M = 61.87$, $n = 38$; $F_{2,162} = 40.57$, $p < .00001$). No relationship was found between employment status and either total attributes or seven of the instrument's eight subscales, including initiative and industry, even when age was not controlled. A significant difference was found between the groups on generativity ($F_{2,160} = 7.23$, $p < .001$). This effect disappeared when age was entered into the equation ($F_{2,159} = 1.31$, $p = .27$). Finally, no significant differences in subscale or total attributes were found between those reporting a chronic illness ($n = 51$) and those free of illness ($n = 112$), a finding which persisted when controlling for age. These results suggest that the new inventory did not appear to be influenced by situational factors or demographic characteristics of the sample.

In contrast to research involving adolescents and young adults (Constantinople, 1969; Rosenthal, *et al.*, 1981; Scheidel & Marcia, 1985; Whitbourne & Waterman, 1979), no significant sex effects were found in the modified inventory as a single dimension or among the first six subscales (see Table 2). Consistent with findings of Ryff and Heincke (1983), no sex differences were found in the generativity/stagnation subscale. Although the variance of ego integrity/despair scores was significantly higher for women ($n = 112$) than men ($n = 53$, $F_{111,52} = 1.80$, $p < .01$), no significant difference in sample distribution between men and women was found (Kruskal-Wallace, $KW = .65$,

TABLE 2

SEX DIFFERENCES WITHIN THE MODIFIED VERSION AND SUBSCALES OF THE ERIKSON PSYCHOSOCIAL STAGE INVENTORY

Dimension	Men		Women	
	M	*SD*	*M*	*SD*
Total Score	4.03	.53	4.04	.56
Trust	3.98	.64	3.98	.70
Autonomy	4.22	.61	4.17	.65
Initiative	4.11	.63	4.09	.61
Industry	4.16	.70	4.16	.68
Identity	4.09	.65	4.11	.74
Intimacy	3.76	.64	3.86	.67
Generativity	3.93	.64	3.96	.63
Ego Integrity	3.99	.53	3.99	.71*

*$F_{111,52} = 1.80$, $p < .01$.

$p = .42$). These data suggest that the modified inventory is free of sex bias or that any developmental sex differences which may exist during childhood or adolescence seem to converge during adulthood.

Construct validity of the modified version was evident in the relationships found between chronological age and the total score ($r = .19$, $p < .05$, $n = 163$) and the eight subscales. A weak but significant relationship ($p < .05$) existed between age and trust ($r = .16$), autonomy ($r = .17$), and identity ($r = .19$). This suggests that, although there may be some enhancement of these attributes with advancing age, the dimensions appear to be relatively stable. As expected, increased effects were found between age and generativity ($r = .31$, $p < .01$) and age and ego integrity ($r = .26$, $p < .01$), suggesting somewhat stronger attributes along these evolving dimensions in the older subjects. No correlations were found between age and initiative ($r = .10$), industry ($r = .09$), and intimacy ($r = .01$), attributes that might be expected to remain relatively stable following their critical developmental period. Clearly, a longitudinal study is needed to validate these findings and eliminate any possible cohort effect.

Additional exploration of the age effect observed within the generativity and ego integrity subscales was conducted by partitioning the data into three groups based upon the ages during which the final two stages of adult development might be differentially pertinent (young, 19 to 39 yr., $n = 67$; middle, 40 to 54 yr., $n = 35$; and older, 55 yr. and above, $n = 63$). No relationship existed between sex of the respondents and age group. It was interesting and important to note that the mean attribute levels of these dimensions increased and the variance decreased with age, indicating progression toward resolution of these developmental crises; see Table 3. The relationship between age and generativity (Kruskal-Wallis, $KW = 21.61$, $p < .00001$) and age and ego integrity ($KW = 14.88$, $p < .0001$) was significant.

The relationships between the first six developmental attribute subscales and generativity and ego integrity dimensions provided additional support for

TABLE 3

GENERATIVITY AND EGO INTEGRITY BY AGE

Group	*n*	*M*	*SD*
Generativity			
Young	67	3.72	.65
Middle Age	35	3.93	.61
Older	63	4.27	.52
Ego Integrity			
Young	67	3.77	.69
Middle Age	35	4.04	.68
Older	63	4.20	.54

the construct validity of the two new subscales and the use of the modified version with adults. Strong correlations existed between generativity and identity ($r = .68, p < .01$), autonomy ($r = .68, p < .01$), and initiative ($r = .63, p < .01$), the three dimensions one would expect to be the best predictors of level of generativity. Industry ($r = .62, p < .01$), trust ($r = .60, p < .01$), and intimacy ($r = .51, p < .01$) were also good predictors of this dimension. As one might also expect, strong correlations were found between ego integrity and trust ($r = .72, p < .01$), identity ($r = .71, p < .01$), and autonomy ($r = .68, p < .01$). Industry ($r = .63, p < .01$), initiative ($r = .57, p < .01$), and intimacy ($r = .47, p < .01$) were also significantly related to ego integrity. These findings support the construct validity of the new measure as well as the theoretical contention that identity versus role diffusion, a strong predictor of both dimensions, is a central nuclear crisis in the evolution and expression of psychosocial attributes in the adult.

As a final indicator of construct validity, subjects who reported exercising regularly ($n = 83$) had significantly stronger psychosocial attributes ($M = 4.17, t = 3.27, p < .005$) than subjects who did not exercise ($M = 3.90, n = 78$). The differences in mean persisted when the effect of age was controlled ($M_{adj} = 4.15$ and $M_{adj} = 3.91$, respectively; $F = 8.52, p < .005$). These observations were consistent with literature which suggests that regular exercise can enhance self-esteem and confidence, facilitate positive mood, improve integrative functioning, stimulate creative thinking, and decrease anxiety (Hammer & Wilmore, 1973; Sharp & Reilley, 1975; Young & Ismail, 1976; Vezina & Ruegger, 1980), factors which are evidence of, and conducive to, personal growth. Alternatively, those with predominance of positive psychosocial attributes may have a greater capacity (e.g., will and energy) to engage in a program of regular exercise. Regardless of the underlying model, this finding was supportive of Eriksonian developmental constructs.

In summary, the Modified Erikson Psychosocial Stage Inventory is a new instrument designed to measure Erikson's eight stages of life cycle development in the adult. The present results indicated that this easily-administered inventory is both reliable and valid. Further research is needed to replicate these findings and evaluate the instrument's stability across various populations. The results of this study suggest that the modified inventory can provide a means by which investigators may quantitatively appraise Eriksonian development among adults.

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