

STRIDES

Year Two Evaluation: Executive Summary

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Copies of the full year two evaluation report as well as the report of first year results are available from:

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BACKGROUND

The STRIDES program is a collaborative effort of Alameda County Behavioral Health Care and Telecare Corporation to provide more cost-effective care for a small group of clients who have major functional impairments due to severe and persistent mental illness.

In 1995, Alameda County Behavioral Health discovered that 500 clients, representing 4 percent of all adult clients, were using 38 percent of service dollars. Most of these clients received very high amounts of acute inpatient and/or long-term subacute care. A capitated pilot project to serve members of this group in the community was jointly designed by the County and Telecare Corporation—a large provider of services in Alameda County and across California. The pilot project design called for the provider to use an Assertive Community Treatment (ACT) team to attempt early community placement with 30 of the high-utilizer clients then living in a locked subacute facility (a category of program known as an Institute for Mental Disease, or IMD). Services for the clients in the pilot project had averaged \$70,000 during the year before the pilot began, but in order to control costs the services were capitated at a rate of \$26,000 per client per year. A risk corridor was set up for inpatient services, with the County to assume the first \$60,000 in acute, long-term subacute or emergency room costs and Telecare to assume the next \$60,000 in these categories. The new program was called STRIDES (Steps Toward Reaching Independence, Dignity, Empowerment and Success).

Costs and client outcomes were the subject of a rigorous evaluation. Thirty clients were randomly assigned to STRIDES and 30 to a comparison group, drawing from a pool of high utilizing clients who were living in a subacute facility. The comparison group was subject to normal criteria and procedures for discharge and, upon discharge, received the “usual” services provided through the County. That is, the comparison group was treated exactly as the STRIDES clients would have been absent the pilot program.

The evaluation was designed to answer four questions, and this report follows this organization.

- Would it be possible to discharge the STRIDES clients to the community considerably earlier than the comparison clients were discharged and maintain them in the community over time through intensive community support services? In short, would STRIDES clients over time have greater tenure in the community?
- Would the ACT model of service provision counter any negative incentives inherent in capitation and produce a high level of community services of high quality?
- Would the intensive community-based services prove more effective in improving client functioning in the community?
- Would capitation lead to significant cost reductions for the STRIDES clients?

The first year study results showed STRIDES to be cost-effective, leading to an expansion of the program during the second year.

First year study results showed STRIDES clients spent much more time living in the community, cost considerably less, and had roughly comparable functioning levels when compared to the comparison group. Because of these favorable results the STRIDES program was expanded from 30 to 100 clients during its second year. The capitation arrangement was altered to an all inclusive \$25,175 which essentially put the provider at full risk. This lower overall capitation rate was negotiated because the larger numbers of clients allowed for some economies of scale and the new clients were not thought to have quite as high service needs as the original enrollees. During the second year, the larger program size allowed STRIDES to develop an employment program, hire a substance abuse specialist, and move to a new site with a large drop-in center. Other aspects of the program were unchanged.¹

¹ STRIDES staff in the second program year again filled out the Community Program Philosophy Scale which measures how close a program is in philosophy and operation to the Assertive Community Treatment programs after which STRIDES was modeled. Staff reported continued fidelity to the model but lower scores

The current report focuses on whether cost savings and other first year outcomes persisted into the second year of the program and provides a two year perspective on trends. The study results include only the original 30 study clients for which there was a randomly assigned control group.

COMMUNITY TENURE

STRIDES clients spent far more time in the community than did comparison clients throughout the two year study period.

All of the STRIDES clients had been discharged from their original placement in a locked subacute facility within four months of assignment to STRIDES, while five of the comparison clients still remained in the locked setting after 27 months. The days an average client spent in the community (not in any inpatient facility) was 314 for the STRIDES clients in year one and 99 for comparison clients. In year two, STRIDES clients were in the community for an average of 346 days and comparison clients an average of 263 days.

The greater community tenure for STRIDES clients was primarily a function of fewer locked subacute facility days. Figure 1 below shows the monthly use of long-term *subacute* facility days for both study groups over two study years. Comparison clients used 8,420 locked subacute days during the two years while STRIDES clients used 375. The difference was especially great in the first year, but even in the second study year the difference was 2,494 days for comparison clients and 299 for STRIDES clients.

However, STRIDES clients also had fewer acute inpatient days, indicating that added supports permitted STRIDES clients greater stability in the community. During the first study year, *acute* days per year of being at risk (being in the community) were 5.71 for demonstration clients; the comparison clients had 6.27 days per year of exposure. During year two, STRIDES clients had a rate of 9.43 inpatient days per client year in the

on staff clarity about role, supervisory support, job involvement, and staff cohesion; the sense that STRIDES is an innovative program was also less.

community compared to 17.2 days for comparison clients. Figure 2 shows the second year average number of inpatient days both unadjusted and adjusted for being at risk.

Figure 1: Total number of days in locked subacute facility each month, by study group

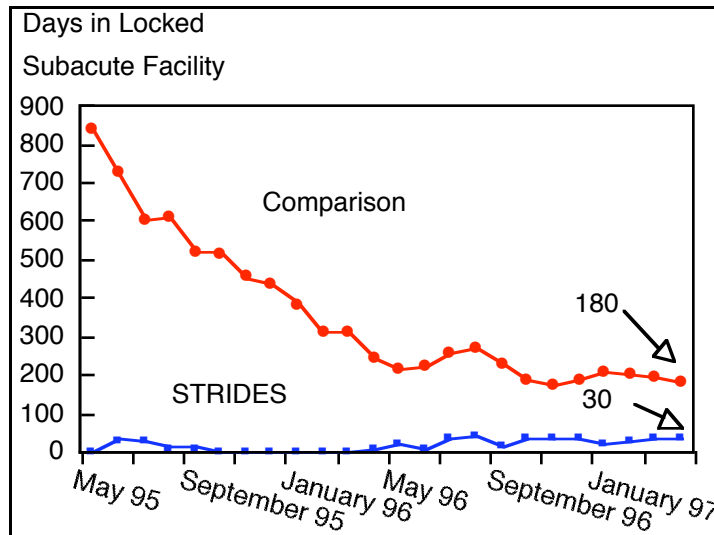
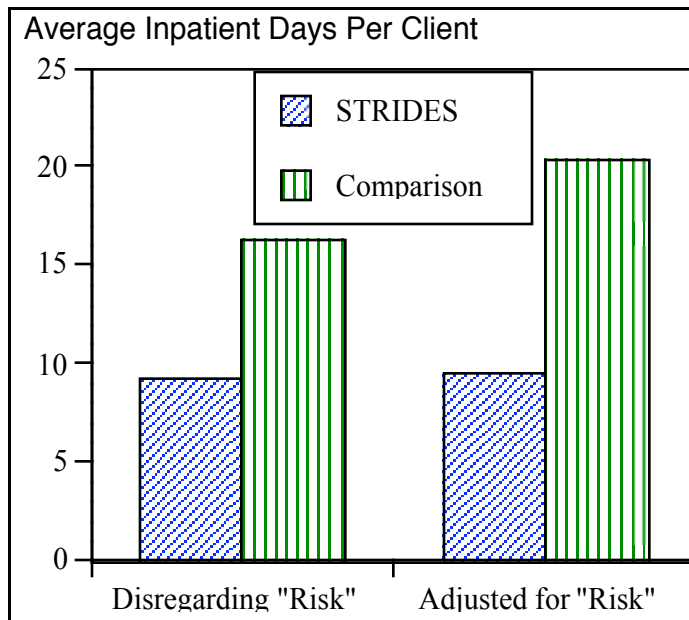


Figure 2: Average inpatient days per client during year two, by study group, unadjusted and adjusted for "risk" (time not in a locked subacute facility)



Thus, the amount of time STRIDES clients spent in the community (not in a long-term facility, or acute unit, or psychiatric emergency room) was far greater than that spent in the community by comparison clients. The answer to the first question is clearly that the ACT-based intensive community support program *was* able to move these very impaired clients to the community early and maintain them there with minimal recidivism to the inpatient level.

SERVICE LEVEL AND QUALITY

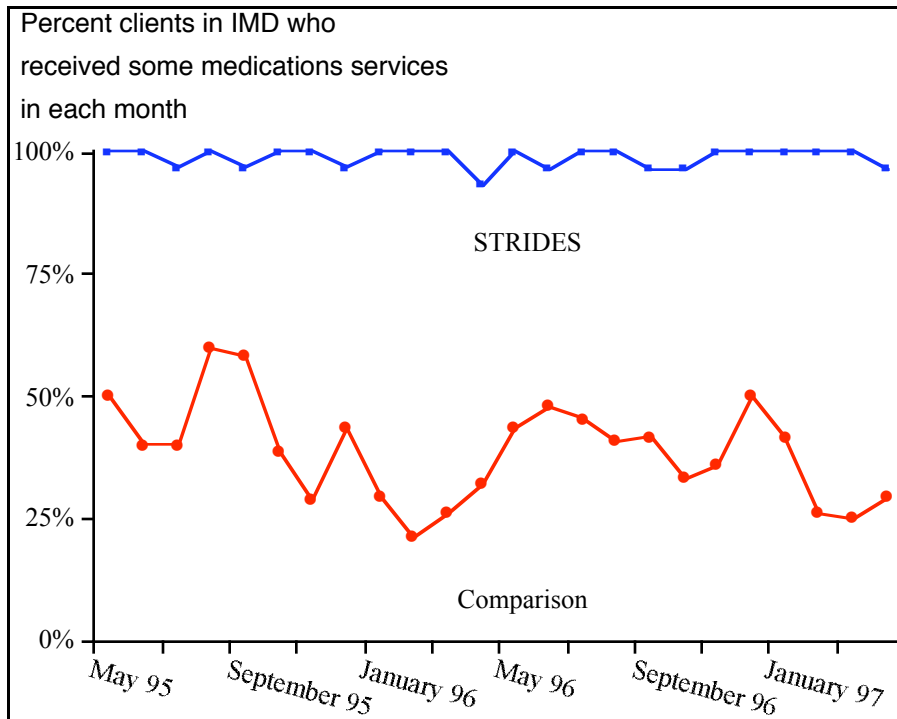
STRIDES clients received significantly more medications and support services than did comparison clients.

A potential danger of capitated arrangements is a financial incentive for the provision of too low an overall level of services in order to maximize profits. In the STRIDES model, it was hypothesized that this danger could be avoided by wedding an ACT model to capitation: the treatment model should counter any negative incentives and result in provision of all needed services, including the extensive outreach necessary for keeping high-risk clients out of the hospital. In fact, STRIDES clients received three to four times as many outpatient/case management hours of contact as did comparison clients. During year one, the average number of outpatient and case management hours (combined) received by STRIDES clients per client month in the community was 14.5—in sharp contrast to the average of 2.5 received by comparison clients per month in the community. In the second year the STRIDES average was nearly identical, 14.7, while the comparison clients increased to an average of 4.6 hours—about one third the STRIDES amount.

STRIDES clients received almost eight times as much medications support services per client as did comparison clients in the second year. Adjusting for time in the community, STRIDES clients received an average of 55.8 medications support hours during the second study year. By contrast the comparison clients received an average of 7.1 hours. Much of this medication support service was delivered at the clients' residence. Figure 3 shows the

percent of clients receiving at least one unit of medications services in each of the 24 study months, excluding those in the locked subacute facility during any given month.

Figure 3: Percent of clients living in the community who received some medications services over two study years, by study group by month



Continuity of care—around hospitalizations and in a more global sense—strongly favored STRIDES clients.

Continuity of care can be thought of in a narrow sense as services delivered immediately before and after episodes of hospitalization. In year one, during the 30 days prior to an episode of hospitalization, STRIDES clients had an average of 24.9 units of service versus 1.9 for comparison clients. STRIDES clients received an average of 32.4 visits in the 30 days *after* hospitalization compared to the mean of 3.3 visits for comparison clients. During the second year, the STRIDES clients received on average 21.4 units of service in the 30 days prior to hospitalization versus 4.5 for comparison clients. In the 30 days after hospitalization, the respective number of units of service received were 17.7 and 5.6. Thus

the disparity was reduced in the second year, but STRIDES clients still received three to four times as many units of service both before and after hospitalization.

A more global notion of continuity of care concerns consistent rather than episodic receipt of community-based support services. In the first study year, the smallest amount of service, exclusive of acute or emergency services, received by any demonstration client in any of the 357 months during which clients were not in an IMD was \$216 (two outpatient units). In contrast, in 21 (15 percent) of the 139 comparison client months when no IMD costs were incurred, there were *no* community service costs at all—excluding inpatient and emergency services.

The second year showed a similar pattern. Excluding those in locked facilities, the lowest month of any STRIDES client was \$328 in ambulatory services—with only four clients having any month in which they received less than \$500 in ambulatory services. In only one percent of the aggregate months did STRIDES clients have a monthly ambulatory service cost of less than \$500. Among comparison clients, 12 percent of all service months (excluding those clients in IMDs 24 days or more) had zero ambulatory service costs, and 21 percent of the aggregate service months had less than \$100 in costs.

FUNCTIONING IN THE COMMUNITY

In both years, STRIDES clients living in the community were somewhat more independent in living situation than comparison clients living in the community. In year two, they were also more likely to be involved in educational or work activity.

Of those clients *living in the community* at the time of the year one interview, seven (27 percent) of the STRIDES clients lived in independent living situations vs. one (18 percent) of the comparison clients. At the year two interview (at the close of the study year), ten (36 percent) of the STRIDES clients were classed as living independently versus two (11 percent) of comparison clients. Another three of the comparison clients were living in supported housing.

During year one, few clients from either group were involved with school or work. At the end of the second year, interview respondents (caretakers or case managers) reported over one third of STRIDES clients had some such involvement—about twice the percentage of comparison clients.

On other outcome measures based on caretaker interviews there was no significant difference between the two groups at the end of year two.

Other measures of community functioning were changed from year one to year two of the study because we believed the year one measures lacked reliability. In the second year, client functioning data was gathered by an Alameda County psychiatric nurse conducting structured interviews with caretakers or case managers and by case manager ratings of functioning using standard instruments.

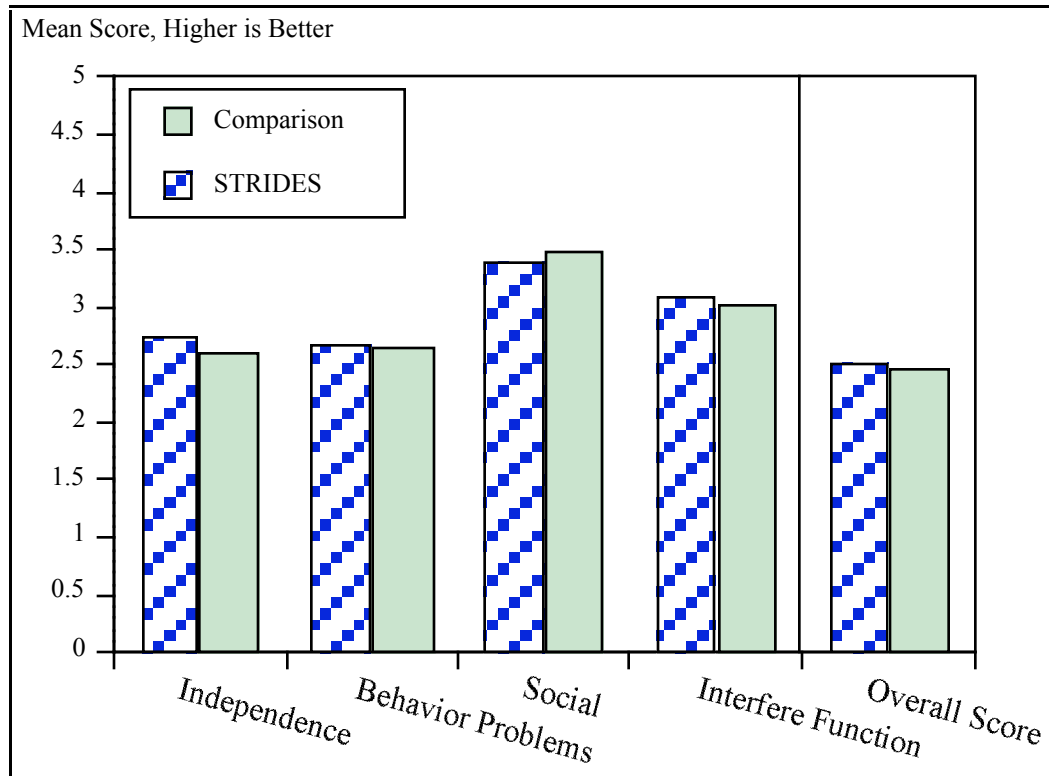
According to interview respondents at the end of the second year, members of both groups still had multiple problems, and neither group appeared substantially better in coping with them. Though STRIDES clients appeared to interviewees to be doing somewhat better on problems that were a focus of treatment, respondents listed more problems in total for STRIDES clients.

Rating by case managers showed STRIDES and comparison clients living in the community to have similar levels of functioning in the second year.

Case manager ratings on the widely used Multnomah Community Abilities scale showed that the functioning of STRIDES and comparison clients in four domains, from symptoms to behavior problems, was very similar. (See Figure 4 above.) The overall scale average for STRIDES clients was 2.49 out of a maximum positive score of 4.0. Comparison clients scored 2.44. Both these scores indicate very low functioning.²

² Despite the very similar average scores, on two of the domains STRIDES clients differed significantly by virtue of having no very low ratings.

Figure 4: Case manager ratings on the Multnomah Community Abilities Scale



COSTS

STRIDES continued to produce significant cost savings in year two—both in gross and net County costs.

In the baseline year, calendar year 1994, mean per client service gross cost for the comparison group was \$72,607 while for STRIDES clients it was \$68,311. In the first study year, the gross cost for comparison clients was \$42,535 versus \$31,808 for STRIDES clients. Net cost to the County (after subtracting Medicaid federal financial participation dollars) showed even greater savings: \$39,396 for comparison clients versus \$12,359 for STRIDES clients.

The gross cost to the County for the comparison group for the second capitated year averaged \$39,151 per member. The gross county cost for STRIDES clients was the amount

of the capitation payment, or \$25,175 per client. The average *net* cost for the comparison group was \$29,776. The average net cost for the STRIDES clients was \$12,197—or 59 percent less than the net for comparison clients.

Using standardized billing rates rather than the capitation rate, second year resource consumption was slightly lower for STRIDES clients than comparison clients and net costs were one-third lower.

The cost that the County paid in the second year—the capitation rate—does not necessarily reflect the actual level of resources expended on the STRIDES study clients. The crucial aspect of a capitation rate is that the provider receives the same amount of money no matter what level of expenditures they make; so Telecare could have expended more or less resources on these clients than was supported by the capitation rate. The submission of claims to the County (for the purpose of the County’s billing for the federal Medicaid dollars) allows for an estimation of the actual level of expenditures on the STRIDES clients in a way that can be compared to the comparison group. Thus, as a conservative approach to comparing costs *disregarding savings due to capitation*, we have used standardized unit costs and multiplied the claimed units of service for both STRIDES and comparison clients by these unit costs.³ Using this approach, the comparison clients had a gross average resource consumption of \$39,150, and the STRIDES clients an average of \$37,105—or five percent less. Average *net* cost (after subtracting federal Medicaid revenues) for the comparison clients was \$29,776 versus \$19,740 for STRIDES clients. Thus in the second year, the net resource consumption saving per client was \$10,036, or 34 percent less for the STRIDES clients.

³ These billing rates overstate the costs of services provided by the STRIDES program itself. Although the amount of overstatement cannot be determined for the second year, we know that these standardized rates resulted in a claimed cost during the first year at least 16 percent higher than the actual costs. Costs for other services such as locked subacute or acute hospital services are comparable for the study groups.

Net savings for the County due to the STRIDES program exceeded one million dollars in the two year study period.

The two-year net average annual cost for comparison clients was \$69,172. The STRIDES client annual net cost to the County was \$25,238 (actual cost based on capitation). Thus, the STRIDES services cost \$43,934 per client less than comparison services during the two years—or 63.5 percent less. The savings amount to \$1,261,045 using the capitation method of costing STRIDES for both years. Even using the very conservative standard cost method for year two, the savings would be \$1,079,815 over the two years.

DISCUSSION

The STRIDES program, over the two study years, was cost effective.

Cost effectiveness from the purchaser's perspective takes on a new slant in a capitated system where costs are fixed for the demonstration group. A capitated program is cost-effective if costs are statistically significantly lower and quality of life and other clinical outcomes are *at least* "equivalent." Table 1 and 2 at the end of this section present the "equivalence" of each of the major year one and year two outcome measures for the study groups.

During the first year there was a significant cost savings favoring STRIDES. However, other results were mixed. Service-related measures (like continuity of care) favored STRIDES as did independence of housing level for clients in the community. The client interview results tended to favor the comparison clients—although effect sizes were small and only one finding (on social activities) was statistically significant. Thus the program overall was cost effective as the cost was much lower for STRIDES clients and their outcomes were *at least as good* as those of the comparison clients overall.

In year two, there are substantial costs savings *and* there are no measures that favor the comparison group, though there are a number where both groups appear very similar. All of the service variables greatly favor the STRIDES clients as does community tenure. Less

convincing evidence favors STRIDES clients regarding housing independence, social activities, vocational services and some level of functioning ratings. Clearly, though, STRIDES remained cost-effective during the second study year.

Future savings depend on unknown factors.

Future savings will depend on two independent factors. The first is whether STRIDES clients will continue to need such high levels of services. ACT-like programs across the country are facing the issue of when and how to “discharge” clients who are doing well. They are also exploring alternatives that involve on-going membership in the program but at greatly reduced service intensity.

The second factor is the future costs for comparison clients. During the second year, comparison clients used more locked subacute and acute services than did STRIDES clients and far fewer ambulatory and rehabilitative services. If the higher comparison client inpatient and locked subacute use stays constant or increases, then future savings are likely.

Although the formal cost-effectiveness study ends with the second year of services, further study of how to predict which clients (both STRIDES and comparison) will do well with less intensive services would be useful as would continued monitoring of comparison group costs.

Table 1: Costs and other outcomes in study year one

OUTCOME	RESULTS FAVOR WHICH GROUP	SIGNIFICANCE ⁺	EFFECT SIZE [*]
Gross cost	Favors STRIDES	Significant **	.42
Net cost	Favors STRIDES	Significant ***	1.10
Time to community placement	Favors STRIDES	Significant***	Not applicable
Community tenure (Total days out of locked subacute or acute)	Favors STRIDES	Significant***	1.46
Continuity of care	Strongly favors STRIDES but test of significance not appropriate	Not applicable	Not applicable
Client satisfaction with:			
• Overall life	• Favors comparison	• Not significant	• .23
• Living in Community	• Favors comparison	• Not significant	• .18
• Quality of life	• Favors comparison	• Not significant	• .04
• Services	• Favors comparison	• Not significant	• .18
Vocational	Cannot be determined but minimal for both groups	Not applicable	Not applicable
Social activities	Favors comparison	Significant*	.55
Independence of housing for those in community	Favors STRIDES	Significant*	.71
Criminal Justice	Minimal for both but not directly comparable	Not applicable	Not applicable

⁺Statistical significance: .01 or less=***, .01 to .05=**, .06 to .10=*

* Effect size: Effect size is computed by dividing the difference between the means by the pooled standard deviation; by convention a “small” effect size is .20, medium is .50 and large is .80 or greater.

Table 2: Costs and other outcomes in study year two

OUTCOME	RESULTS FAVOR WHICH GROUP	SIGNIFICANCE	EFFECT SIZE
Gross cost	Favors STRIDES: Gross (capitated)	Significant*	.36
	Gross (MIS)	Not Significant	.06
Net cost	Favors STRIDES: Net (capitated)	Significant***	.50
	Net (MIS)	Not significant	.40
Time to community placement	Favors STRIDES	Significant***	Not applicable
Community tenure (Total days out of locked subacute or acute)	Favors STRIDES	Significant***	.74
Continuity of care	Favors STRIDES	Not applicable	Not applicable
Vocational	Favors STRIDES	Not significant from interview	Cannot be determined
Social activities	Favors STRIDES	Not significant	Not applicable
Level of functioning ratings	Partially favors STRIDES: • Interference with functioning • Social competence • Other scales	• Significant*	.07
		• Significant*	.05
		• Not-significant	.NA
Independent living	Favors STRIDES (independent vs. all other)	Significant*	1.04
Behavior problems	Some measures favor STRIDES rest neutral	Not significant	Not applicable
Criminal Justice	Minimal for both	Not significant	Not applicable
Substance abuse	Favors comparison but may be measurement difference	Not significant	No applicable

⁺Statistical significance: .01 or less=***, .01 to .05=**, .06 to .10=*

* Effect size: Effect size is computed by dividing the difference between the means by the pooled standard deviation; by convention a “small” effect size is .20, medium is .50 and large is .80 or greater.