DOCUMENT RESUME

ED 370 029 CG 025 402

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TITLE Interpersonal Problem Solving and Prevention in Urban School Children.
PUB DATE Aug 93
NOTE 15p.; Paper presented at the Annual Meeting of the American Psychological Association (101st, Toronto, Ontario, Canada, August 20-24, 1993).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Decision Making Skills; Elementary School Students; *Grade 5; *Grade 6; Intermediate Grades; *Interpersonal Competence; Interpersonal Relationship; Prosocial Behavior; *Urban Youth
IDENTIFIERS *Interpersonal Cognitive Problem Solving

ABSTRACT

Recognizing that enhancing the interpersonal problem solving skills of children as young as age four can reduce or prevent high-risk behaviors later on, researchers designed a competence-building model of primary prevention. The two criteria tested were: (1) the theory of interpersonal cognitive problem solving (ICPS) skills as mediators of social adjustment and psychological functioning in inner-city fifth and sixth graders; and (2) the impact of a full-scaled four month ICPS intervention on behavioral adjustment and psychological functioning in school. By comparing ICPS-trained subjects (interpersonal cognition) with a group trained in Critical Thinking (impersonal cognition), investigators examined cognitive and behavioral impact after one exposure in grade 5, and after two exposures in grades 5 and 6. Results suggest that for this age and socio-economic status (SES) group, one exposure to ICPS training enhances ICPS and prosocial behaviors, but it requires a second exposure to reduce negative, impulsive, and inhibited behaviors. With no such interpersonal or behavior gains in the Critical Thinking (CT) groups for either year (CT groups actually became more impulsive from grade 5 to grade 6) it appears that ICPS training is a viable model of prevention for this age and SES group. Full behavioral impact for latency-aged, low SES youngsters may take longer than the briefer one-time exposure required for youngsters in preschool and kindergarten. (RJM)

# Interpersonal Problem Solving and Prevention in Urban School Children



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Presented: American Psychological Association Annual Convention
Toronto, August 1993

## ABSTRACT

A competence-building model of primary prevention was designed to: 1) test the theory of interpersonal cognitive problem solving (ICPS) skills as mediators of social adjustment and psychological functioning in inner-city fifth- and sixth-graders, and 2) test the impact of a full-scaled four month ICPS intervention on behavioral adjustment and psychological functioning as observed in school. By comparing ICPS-trained Ss (interpersonal cognition) with a group trained in Critical Thinking (impersonal cognition), objectives were to examine cognitive and behavioral impact after one exposure in grade 5, and after two exposures, in grades 5 and 6. Results suggest that for this age and SES group, one exposure to ICPS training enhances interpersonal cognitive problem solving and positive, prosocial behaviors, but it required a second exposure (in grade 6) to reduce negative impulsive and inhibited behaviors. With no such interpersonal or behavior gains in the Critical Thinking(CT) groups either year (the CTs actually became more impulsive from grade 5 to grade 6), it appears that ICPS training is a viable model of prevention for this age and SES group. However, full behavioral impact for latency-aged, low SES youngsters may take longer than the briefer one-time exposure required for younger preschool and kindergarten aged-youngsters.

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## INTRODUCTION

With increasing violence in the nation's middle- and high schools, increasing substance-abuse, teen-pregnancy and sexual behaviors that could result in AIDS, as well as various forms of psychological dysfunction such as depression, there is now, more than ever an urgent need for prevention-- prevention that goes well beyond increased staff of security guards, metal detectors, and lectures about the ills of unsafe sex, etc.

There is evidence to suggest that sexually active teenagers who, for example, do engage in unsafe sex are less able than those who use contraceptives to think in more generic ways, including an inability to solve general interpersonal kinds of problems as how to make friends (Flaher . Marecek, Olsen, & Wilcove, 198?; Steinlauf, 1979). We believe that if youngsters can learn <u>how</u>, not just what to think earlier on, then when they approach junior high and high school they will more likely be able to think also about things like drugs, violence, and safe sex. We have learned that as young as age four, inner-city, low SES youngsters displaying early high-risk behaviors (such as: antisocial behavior, inability to cope with frustration and poor peer relations) now known to be predictors of the above-mentioned

Funded by the Prevention Research Branch, Grant #MH 35989, National Institute of Mental Health.

later, more serious outcomes (Parker & Asher, 1987) are also more deficient in their ability to think through and solve interpersonal problems (Spivack & Shure, 1974). Questions similar to those asked in studies with learning disabilities and mildly retarded elementary school students (Healey & Masterpasqua, 1992; Healey, 1987). Having also learned that enhancing interpersonal problem solving skills at that early age (through intervention) can reduce or prevent those high risk behaviors (Shure & Spivack, 1982), the new question was whether such training begun at a later age (in grade 5) could have some preventive impact.

## METHOD

Subjects. At the end of grade 5, 112 boys and 110 girls trained in interpersonal cognitive problem solving (ICPS) and 49 boys, 48 girls (mean pretest age, 10 years, 4 months) who received a comparison impersonal critical thinking (CT) intervention were available for study. At the end of grade 6, there were 47 boys and 50 girls who received one year of interpersonal cognitive problem solving (ICPS) intervention (in grade 5) and 47 boys and 45 girls who received two years (in grades 5 and 6). In the comparison groups, 30 boys and 23 girls received one year of impersonal critical thinking (CT) skills in grade 5, and 17 boys and 22 girls in grades 5 and 6. No initial group differences were found in reading or math grade level, in California Achievement test scores, in WISC-vocabulary test scores, or in pretest interpersonal or impersonal thinking test scores.

Intervention: ICPS. Focusing upon interpersonal thinking skills, four months of thrice-weekly training consisted of the prerequisite problem solving skills of perspective-taking (an appreciation that someone else might have thoughts and feelings different from one's own), recognition of people's potential motivations for behavior (e.g., he didn't say hello because he didn't see me, not necessarily because he doesn't like me), sensitivity to the existence of a problem as interpersonal and its causes, and listening and awareness skills. These and other prerequisite skills enrich children's ability to generate alternative solutions to real life problems, anticipate potential consequences to an act, and plan sequenced steps to a stated interpersonal goal (means-ends thinking). ICPS, now also called I Can Problem Solve (Shure, 1992a, b, c) also trains teachers to engage in a problem solving style of communication (called ICPS dialoguing) when actual problems arise. Instead of telling, suggesting, or even explaining why a child should or should not do something, children were asked questions as, "What's the problem?" (to define the problem), "What happened when you [tore his paper]?" (to guide consequential thinking), "How did you feel when [he hit you]?" (to guide thought about the child's own feelings), and "How do you think he felt, when [you tore his paper]?" (to guide thought about the other child's feelings). The teacher then followed with statements as, "Tearing his paper is one way to solve your problem. Can you think of a different way so [Timmy] won't hit you and you both won't feel [angry]?" Given the skills and the freedom to think, children are more

likely to carry out their own ideas than if told what and what not to do, and why. This kind of problem solving dialoguing helps children associate how they think with what they do, and carries thought from fictitious situations to real life.

Intervention: CT. Focusing upon impersonal, critical thinking skills, four months of forty minute thrice-weekly training consisted of reasoning skills, deductive logic, generating impersonal alternative thinking (e.g., how water might have disappeared from a can taken to the desert; multiple usage for a newspaper) and generating means-end plans (e.g., finding the culprit in a detective story). Paralleling ICPS training, children learned to recognize: 1) there is more than way to view a problem, 2) there is more than one explanation for an event, 3) there is more than one way to solve a problem, and 4) ideas can be evaluated. Also paralleling the ICPS style of training, CT concepts were extended to daily use, such as in math lessons (e.g., how many ways can the numbers 1, 2, and 3 be used to total 10).

## RESULTS

Considering all Ss trained in grade 5, results reveal that with pretest ICPS and CT test scores, WISC-vocabulary IQ, and academic ability controlled, ICPS-trained Ss gained significantly more than impersonal-cognitive CT-trained Ss in all three trained ICPS skills. The most impressive behavioral gains of ICPS Ss, compared to CT Ss occurred for positive, prosocial behaviors and peer relationships. These differences emerged whether one examined teacher behavior ratings, peer sociometrics, or ratings

of independent observers. While one four month exposure did not decrease impulsive or inhibited behaviors at this age, these behaviors actually increased in the impersonal-cognitive CT-trained group in both sexes, especially as seen through the eyes of peers. Perhaps ICPS intervention helps to prevent any natural tendency for increased incidence of negative behaviors as youngsters move through the elementary grades. These findings emerged despite a significantly greater increase in measured CT skills by the CT-trained group (compared to the ICPS-trained group), suggesting that the content of the CT training program was taken seriously by both teachers and the children. Linkage analyses support the notion that ICPS skills, particularly solution skills are significant mediators of behavioral change, especially as rated by peers, and most powerfully for prosocial behaviors. That is, ICPS-trained Ss who most improved in solution skills also most improved in positive, prosocial cooperation, concern for others, and the extent to which they are liked by their peers.

In grade 6, all ICPS-trained youngsters were superior to all CT-trained youngsters in solution and consequential thinking skills, with two year-trained ICPS girls most superior in alterative solutions skills (see Tables 1 & 2), and two year-trained ICPS girls also most superior in means-ends skills. With no bias in attrition, or among pretest levels of those receiving two years of training, two year-trained Ss were also superior to all other groups in all positive behaviors measured by teachers, by peers, and by independent observers. As rated by peers,

impulsive behaviors decreased in both trained ICPS groups by the end of grade 6 for girls (Table 3) and shy behaviors after the second year of intervention as rated by peers for both sexes (Table 4).

## DISCUSSION

That youngsters exposed to the ICPS and not the CT intervention improved in behaviors linked to interpersonal cognitive problem solving skills, the linkages found between specific ICPS and behavior gains, and the lack of relationship between the increased CT-tested skills and behavior in the CT-trained groups lend further support for the theoretical position that interpersonal and impersonal thinking skills are not guided by the same mental processes. It is ICPS skills which most predictably mediate behavior in latency-aged youngsters--especially solution skills. In addition, the results of the CT intervention lend further support for the ICPS/behavioral mediation theory in that ICPS-trained youngsters did not receive differential attention, negating the possibility that the positive results might have been due to influences on teachers not related to the ICPS program per se. Although it might take longer for the full impact of ICPS to take effect than we had found for preschool and kindergarten-aged youngsters, it appears that this kind of intervention can still have a positive preventive influence. Although training in the middle grades is probably not too late for youngsters experiencing behavioral difficulties, training at still earlier ages (4 and 5) does allow children to enjoy the school experience from a better behavioral

vantage point. It seems reasonable to assume that earlier ICPS training would greater solidify interpersonal thinking skills in a way that could decrease the probability of engaging in later, more serious behaviors as youngsters approach their adolescent years.

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Table 1

Means & SDs for Alternative Solution Skills

by Group by Time

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 |
| ICPS 2 Yrs. | | | | | | |
| $\bar{X}$ | 13.47 | 14.93 | 16.63 | 14.69 | 16.82 | 18.49 |
| SD | (3.93) | (3.38) | (3.50) | (3.99) | (3.28) | (3.24) |
| N | 47 | 47 | 47 | 45 | 45 | 45 |
| ICPS 1 Yr. | | | | | | |
| $\bar{X}$ | 13.32 | 16.57 | 16.60 | 14.48 | 17.08 | 16.14 |
| SD | (2.99) | (3.59) | (3.90) | (4.03) | (3.95) | (3.92) |
| N | 47 | 47 | 47 | 50 | 50 | 50 |
| CT 2 Yrs. | | | | | | |
| $\bar{X}$ | 14.29 | 14.00 | 14.71 | 14.77 | 13.41 | 12.64 |
| SD | (3.37) | (2.29) | (2.08) | (2.78) | (2.75) | (3.35) |
| N | 17 | 17 | 17 | 22 | 22 | 22 |
| CT 1 Yr. | | | | | | |
| $\bar{X}$ | 14.43 | 13.73 | 13.37 | 14.17 | 13.39 | 12.48 |
| SD | (3.40) | (2.85) | (2.93) | (3.93) | (3.24) | (3.54) |
| N | 30 | 30 | 30 | 23 | 23 | 23 |
| $Q_1$ Pretest diff | | | NO | $Q_1$ Pretest diff | | NO |
| $Q_2$ Time 3 diff, T1 controlled | | | YES | $Q_2$ Time 3 diff, T1 controlled | | YES |
| (ALL ICPS > ALL CT) | | | | (ALL ICPS > ALL CT) 2 yr. ICPS most superior | | |

Note - possible range 10 per 3 stories or 0 - 30

Groups: ICPS = Interpersonal Cognitive Problem Solving
CT = Critical Thinking

Table 2

Means & SDs for Consequential Thinking Skills

by Group by Time

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 |
| ICPS 2 Yrs. | | | | | | |
| $\bar{X}$ | 13.15 | 15.62 | 17.43 | 14.40 | 18.20 | 17.87 |
| SD | (3.58) | (4.58) | (3.66) | (3.90) | (4.68) | (3.51) |
| N | 47 | 47 | 47 | 45 | 45 | 45 |
| ICPS 1 Yr. | | | | | | |
| $\bar{X}$ | 12.91 | 17.06 | 18.32 | 13.50 | 16.54 | 16.98 |
| SD | (4.69) | (4.44) | (5.06) | (4.40) | (4.60) | (3.68) |
| N | 47 | 47 | 47 | 50 | 50 | 50 |
| CT 2 Yrs. | | | | | | |
| $\bar{X}$ | 13.94 | 15.41 | 15.65 | 14.27 | 16.14 | 14.95 |
| SD | (2.41) | (3.06) | (3.30) | (3.87) | (5.08) | (3.50) |
| N | 17 | 17 | 17 | 22 | 22 | 22 |
| CT1 Yr. | | | | | | |
| $\bar{X}$ | 13.93 | 14.87 | 14.87 | 13.52 | 14.30 | 15.04 |
| SD | (3.56) | (3.18) | (3.95) | (3.22) | (3.13) | (4.35) |
| N | 30 | 30 | 30 | 23 | 23 | 23 |
| $Q_1$ Pretest diff | | | NO | $Q_1$ Pretest diff | | NO |
| $Q_2$ Time 3 diff, T1 controlled | | | YES | $Q_2$ Time 3 diff, T1 controlled | | YES |
| (ALL ICPS > ALL CT) | | | | (ALL ICPS > ALL CT) | | |

Note - possible range 10 per 3 stories or 0 - 30

Groups: ICPS = Interpersonal Cognitive Problem Solving
CT = Critical Thinking

Table 3

Means & SDs for Peer Ratings for Impulsivity

by Group by Time

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 |
| ICPS 2 Yrs. | | | | | | |
| $\bar{X}$ | .99 | 1.01 | .79 | .80 | .75 | .65 |
| SD | (.45) | (.48) | (.46) | (.47) | (.46) | (.44) |
| N | 33 | 33 | 33 | 30 | 30 | 30 |
| ICPS 1 Yr. | | | | | | |
| $\bar{X}$ | .95 | .94 | .89 | .85 | .81 | .68 |
| SD | (.46) | (.44) | (.52) | (.57) | (.50) | (.52) |
| N | 35 | 35 | 35 | 37 | 37 | 37 |
| CT 2 Yrs. | | | | | | |
| $\bar{X}$ | .96 | 1.07 | .96 | .89 | .94 | .79 |
| SD | (.57) | (.39) | (.48) | (.51) | (.38) | (.36) |
| N | 15 | 15 | 15 | 18 | 18 | 18 |
| CT 1 Yr. | | | | | | |
| $\bar{X}$ | .99 | 1.00 | .92 | .82 | 1.02 | 1.04 |
| SD | (.49) | (.25) | (.51) | (.51) | (.45) | (.54) |
| N | 15 | 15 | 15 | 16 | 16 | 16 |
| $Q_1$ Pretest diff | | | NO | $Q_1$ Pretest diff | | NO |
| $Q_2$ Time 3 diff, T1, controlled | | | NO | $Q_2$ Time 3 diff, T1, controlled | | YES |
| | | | | (ALL ICPS < ALL CT) | | |

Note - possible range 0 - 2

Table 4

Means & SDs for Peer Ratings for Shy

by Group by Time

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 | $T_1$ Fall Gr 5 | $T_2$ Spring Gr 5 | $T_3$ Spring Gr 6 |
| ICPS 2 Yrs. | | | | | | |
| $\bar{X}$ | .77 | .47 | .33 | .82 | .67 | .39 |
| SD | (.47) | (.40) | (.31) | (.59) | (.57) | (.42) |
| N | 36 | 36 | 36 | 37 | 37 | 37 |
| ICPs 1 Yr. | | | | | | |
| $\bar{X}$ | .49 | .39 | .51 | .55 | .41 | .60 |
| SD | (.43) | (.43) | (.44) | (.49) | (.44) | (.40) |
| N | 31 | 31 | 31 | 32 | 32 | 32 |
| CT 2 Yrs. | | | | | | |
| $\bar{X}$ | .71 | .83 | .71 | .70 | .45 | .59 |
| SD | (.39) | (.39) | (.42) | (.61) | (.48) | (.54) |
| N | 12 | 12 | 12 | 18 | 18 | 18 |
| CT 1 Yr. | | | | | | |
| $\bar{X}$ | .64 | .51 | .56 | .60 | .50 | .60 |
| SD | (.53) | (.44) | (.36) | (.34) | (.46) | (.28) |
| N | 14 | 14 | 14 | 13 | 13 | 13 |
| $Q_1$ Pretest diff | | | NO | $Q_1$ Pretest diff | | NO |
| $Q_2$ Time 3 diff, T1, controlled | | | YES | $Q_2$ Time 3 diff, T1, controlled | | YES |
| 2 yr. ICPS < ALL other groups<br>2 yr. CT > ALL other groups | | | | 2 yr. ICPS < ALL other groups | | |