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## Social Problem Solving and Health

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Counseling psychology is committed to helping people meet the challenges and solve the problems they encounter in daily routines and in stressful circumstances. To a great extent, this holds true for other professional psychology specialties (including clinical, educational and health psychology) as clients usually seek professional assistance in solving the problems they face. Thus, the study of problem-solving abilities—their measurement and correlates—and efficient ways to improve these abilities is of keen interest to clinicians and researchers.

Counseling psychology has played an influential role in this area of inquiry. Historically guided by early cognitive-behavioral theorists (D’Zurilla & Goldfried, 1971), counseling psychology contributed essential theoretical refinements (Heppner & Krauskopf, 1987) and measurement tools (Heppner, 1988) that remain landmark events. However, related and subsequent theoretical and empirical contributions—appearing primarily in outlets associated with clinical and health psychology, and in the larger, multidisciplinary literature—have yet to be sufficiently integrated with contributions from counseling psychology. This lack of scholarly integration has not necessarily impeded advancements and applications, but it has thwarted a deeper theoretical understanding of the mechanisms at work in the learning and application of social problem-solving abilities.

### Historical Backdrop

The historical backdrop of theory and research must be considered for us to appreciate the subsequent developments in the current literature. The D’Zurilla and Goldfried (1971) is the intellectual wellspring for this area: In this paper, the authors described the elements that would eventually characterize the problem-solving process. Specifically, it was argued that successful problem-solving consists of identifying a problem, defining the characteristics and important aspects of the problem, generating possible solutions and alternatives for the problem, choosing a viable solution and implementing it, and then monitoring and evaluating the progress of the solution.

Two important features of this paper should be emphasized. First, as Nezu (2004) observes, the proposed model of this work was *prescriptive* rather than *descriptive*; that is, D’Zurilla and Goldfried construed effective problem solving principles as they should be and as they should operate, in theoretical terms. Second, the authors did not recommend a specific measure for assessing problem solving skills; their essay was primarily concerned with the ramifications of their straightforward model for cognitive-behavioral interventions.

The implications of this model for counseling psychology were spelled out in an important conceptual review by Heppner (1978) and demonstrated in an impressive intervention study by Richards and Perri (1978). These papers—both published in the same volume of *Journal of Counseling Psychology*—exemplified the two different approaches to the study of problem-solving abilities that persist to this day. In the former, Heppner considered the larger cognitive-behavioral framework in which problem solving was a part, drawing out implications for counseling practice and research. Eventually, Heppner’s work produced the Problem Solving Inventory (PSI; Heppner, 1988), accompanied by an impressive program of empirical research that demonstrated the correlates and properties of the PSI (for reviews of this work see Heppner & Baker, 1997; Heppner, Witty, & Dixon, 2004). In contrast, Richards and Perri took initiative

from the prescription of problem-solving abilities stipulated by D’Zurilla and Goldfried, developed an intervention based on these principles, and provided evidence of their utility in significantly improving self-management skills of undergraduates (Richards & Perri, 1978).

In surveying the current landscape, we find relevant research that extends from the Heppner research program. This influence is rather easy to identify, as most of this work relies on the PSI (perhaps the most frequently used problem solving measure). This work appears predominately in the counseling psychology literature. The most comprehensive theoretical commentary on this scholarship appears in Heppner and Krauskopf (1987), in which an information-processing model is used to help us understand how individuals learn, regulate, and execute problem-solving abilities.

Running parallel to this stream of work (with a few intriguing moments of empirical overlap) are studies that integrate the problem-solving principles into interventions with considerable success. Although D’Zurilla and colleagues were apparently uninterested in developing a measure of problem solving abilities at first—indeed, some of the initial intervention studies used Heppner’s PSI (Nezu & Perri, 1989)—this camp provided theoretical refinements of the cognitive-behavioral mechanisms of the problem-solving process (D’Zurilla & Nezu, 2007). A measure of social problem-solving abilities was eventually developed (featuring 70 items; D’Zurilla & Nezu, 1990) and empirically refined (52 items; D’Zurilla, Nezu, & Maydeu-Olivares, 2002). However, this research stream is best characterized by the number of intervention studies that appeared in journals associated with clinical and counseling psychology, and the far-reaching implications of this work are now being realized by multidisciplinary research teams across the health professions.

### Theoretical Distinctions

Although these two streams of work often compliment the other, a few compelling theoretical distinctions should be noted. In the Heppner and Krauskopf (1987) model, for example, problem solving is construed as a metacognitive variable that has organizational properties. In a manner akin to Bandura’s self-efficacy model (Bandura, 1986), problem solving is a self-appraisal process, as behavior is influenced by subjective beliefs and perceptions of abilities, competencies, and potential. These cognitions regulate emotional experiences and expression, overt behavior, personal goals and goal-directed activity. The PSI features three empirically derived factors (Personal Control, Problem-Solving Confidence, and Approach-Avoidance), but it is not construed as a measure of actual problem-solving abilities, per se. The favored terminology emphasizes the phenomenological processes stipulated in this model (e.g., “problem-solving appraisal” and “self-appraised problem-solving abilities”).

The Social Problem-Solving Inventory-Revised (SPSI-R; D’Zurilla & Nezu, 1990) was developed as the authors recognized two broad functions of social problem-solving abilities they termed *problem orientation* and *problem-solving skills* (see Nezu & D’Zurilla, 1989). The problem orientation component, based on converging evidence from research at that time, served to regulate emotions, maintain a positive attitude necessary for solving problems, and motivate a person toward solving problems in routine and stressful circumstances. The problem-solving skills component encompassed the actual skills individuals use in solving problems, including rational skills, avoidance, and impulsive and careless styles. This model guided much of the contemporary research that has used this scale. The theoretical and clinical focus of this group centers on the prescriptive nature of the original model (D’Zurilla & Nezu, 1999; Nezu, 2004) and consistently uses the term “social problem-solving abilities.” Recently, D’Zurilla and colleagues recognize the strong associations that have occurred between the positive orientation scale on the SPSI-R measure and the rational-problem solving scale, and between the negative problem orientation scale and the impulsive/careless and the avoidance

scales (D’Zurilla, Nezu, & Maydeu-Olivares, 2004). They use the terms “constructive problem-solving style” and “dysfunctional problem-solving style” in their recent conceptualization.

## PERSONAL ADJUSTMENT AND HEALTH

We acknowledge that personal adjustment is an important aspect of “health,” generally, and it is a dubious enterprise to separate adjustment into dualistic notions of “mental” and “physical” health. The study of social problem-solving and emotional adjustment has largely dominated the relevant counseling literature, and only recently have we begun to appreciate the theoretical and clinical implications of social problem-solving abilities and physical health. From our perspective, we are fairly confident in the established associations between ineffective problem-solving abilities and depression, anxiety, and distress among people in general (Heppner, et al., 2004; Nezu, 2004). However, ineffective problem-solving abilities are inconsistently associated with indicators of health-compromising behaviors (e.g., sedentary behavior, substance abuse; Elliott et al., 2004). Social problem-solving abilities can be significantly predictive of important self-reported outcomes (e.g., disability, well-being; Elliott, et al., 2004) and with objectively-rated indicators of therapeutic adherence (although the directions of these relationships are not always clear; see Herrick & Elliott, 2001).

In the remainder of this chapter, we address recent advancements in our understanding of social problem-solving abilities from recent research in emotional, interpersonal and social adjustment associated with health, with health outcomes and secondary complications, and from problem-solving interventions among persons with various health conditions. We then turn our attention to major issues and findings raised in published reviews of the research to date, and conclude with a discussion of the problems we see in this work and offer our recommendations for future research. We use the term “social problem-solving abilities” in deference to the original model and in light of the currency of this concept in the larger multidisciplinary literature (in which much of the research relevant to our discussion has appeared).

### Emotional, Interpersonal, and Social Adjustment

In a previous survey of problem-solving abilities and health, the connections between dysfunctional social problem-solving styles and depression and distress were theoretically consistent across the relevant literature; data linking effective problem-solving abilities with optimal adjustment were decidedly mixed (Elliott, et al., 2004). Empirical research over the ensuing years has yielded similar results. A negative problem orientation has been associated with higher depression scores among older persons with vision loss (Dreer, Elliott, Fletcher, & Swanson, 2005) and among family caregivers of persons with severe disabilities (Grant et al., 2006; Rivera, Elliott et al., 2006). A dysfunctional problem-solving style—as measured by the SPSI-R—may be particularly characteristic of individuals who meet diagnostic criteria for a suspected major depressive disorder (Dreer, Elliott, Shewchuk, Berry, & Rivera, in press; Grant, Weaver, Elliott, Bartolucci, & Giger, 2004; Rivera, Elliott, Berry, Oswald, & Grant, 2007).

Indicators of function and quality of life among persons with debilitating conditions rely heavily on self-report measures of these constructs. These measures may be influenced by respondent problem-solving styles, independent of objectively-defined indicators of disability severity (Elliott, Godshall, Herrick, Witty, & Spruell, 1991; Shaw, Feuerstein, Haufler, Berkowitz, & Lopez, 2001). Consistent with these data, Rath and colleagues found ineffective problem-solving abilities were significantly associated with self-reported psychosocial impairment among persons with traumatic brain injuries (TBI; Rath, Langenbahn, Simon, Sheer, Fletcher, & Diller, 2004). Similar results have been found among persons in a chronic pain rehabilitation program (Witty, Heppner, Bernard, & Thoreson, 2001). A negative problem

orientation is a stronger predictor of psychosocial impairment than health locus of control variables (Shanmugham, Elliott & Palmatier, 2004).

In fact, among persons with TBI, there is evidence that social problem-solving abilities may be a better predictor of community integration following medical rehabilitation than several neuropsychological measures often used to predict adjustment in this population (Rath, Hennessy, & Diller, 2003). These results—consistent with prior evidence of the social adaptability associated with effective problem-solving (see Heppner, et al., 1982, and Neal & Heppner, 1986)—may prove particularly enlightening in our appreciation of interpersonal and social dynamics of adjustment following disease and disability.

Although the results from these studies have been largely consistent with previous research, the evidence linking social problem-solving abilities and optimal adjustment remains thin. For example, prospective research has found a positive orientation predictive of well-being among family caregivers of stroke survivors over thirteen weeks after discharge from an inpatient rehabilitation program (Grant et al., 2006). Cross-sectional research has found a negative orientation to be inversely associated with caregiver mental health and life satisfaction (Rivera et al., 2006), and Dreer et al. (2005) found elements of constructive and dysfunctional problem-solving styles were associated with the life satisfaction reported by individuals in an outpatient low vision rehabilitation program.

A more detailed analysis of subgroups within a large sample of individuals with disabilities suggests that the relationship of problem-solving abilities to measures of distress and well-being may be theoretically consistent at the extremes: Effective problem-solving abilities are associated with a more optimal profile, and ineffective abilities are associated with opposite clinical picture (Elliott, Shewchuk, Miller, & Richards, 2001). However, two other clusters revealed that some individuals who harbor a negative orientation and who report rational problem-solving skills also experience considerable distress. Our lack of insight into the actual mechanisms by which problem solving influences adjustment in routine, daily experiences hinders our interpretation of these data and their implications.

A similarly complicated pattern emerges in our understanding of self-reported health and social problem-solving abilities. Prospective research has found a negative orientation to be productive of family caregiver health complaints over the course of a year (Elliott, Shewchuk, & Richards, 2001). Yet cross-sectional study with family caregivers of persons with various disabilities did not replicate this finding (Rivera et al., 2006), and Grant et al. (2006) found a significant—albeit tenuous and diminishing—relationship between a positive orientation and general health over 13 weeks. Despite early evidence that a negative orientation is predictive of self-reported health complaints in cross-sectional and prospective designs (Elliott & Marmarosh, 1994), it appears that several unmeasured factors may account for these inconsistent findings.

There is reason to believe that social problem-solving abilities operate within interpersonal and social contexts to exert an influence on adjustment. An effective problem-solving style has been associated with greater relationship satisfaction among family caregivers of stroke survivors (Shanmugham, et al., 2007). Related research suggests that children of families that rely on problem-solving coping fare better over time than families who rely less on these strategies (Kinsella, Ong, Murtagh, Prior, & Sawyer, 1999; Rivara, Jaffe, Polissar, Fay, Liao, & Martin, 1996). Furthermore, persons living with severe disability and with family caregivers who have impulsive and careless ways of solving problems were more likely to have a pressure sore within the first year of acquired disability than other individuals (Elliott, Shewchuk, & Richards, 1999). Caregiver dysfunctional styles have also been implicated in the distress and

decreased life satisfaction reported by patients with congestive heart failure (Kurylo, Elliott, DeVivo, & Dreer, 2004).

A comprehensive study by Johnson and colleagues (2006) suggests that the effects of problem solving on distress may be defined by several adaptive correlates of social problem-solving abilities. In this study, distress—as a latent construct—was composed of decreased social support, elevations in depression and negative mood, and high stress among 545 HIV+ adults, and distress was predicted by constructive and dysfunctional problem-solving styles (accounting for over 60% of the variance). Although prior research has indicated that social problem-solving abilities are usually related to these separate variables in a theoretically consistent fashion, this was the first study to demonstrate these relationships in a comprehensive model, and the associations were best understood within the context of this model.

### Health Outcomes and Secondary Complications

In many respects, social problem-solving abilities have demonstrated considerable utility as a predictor of important health outcomes in several studies of depression among persons living with chronic health conditions. Depression is often conceptualized as an important health outcome because it is associated with increased health care costs and it compromises the overall health of persons with conditions as varied as diabetes, paralysis, and congestive heart failure.

It has been difficult to ascertain the ways in which problem-solving abilities might influence other, more objectively-defined health outcomes. Data concerning the relations of problem solving to substance use, exercise, and other health behaviors have been mixed (see Elliott et al., 2004), although among individuals who live with a disability there is some indication that a dysfunctional style may be associated with health-compromising behaviors (Dreer, Elliott, & Tucker, 2004).

The Johnson et al. (2006) study again informs us of the ways in which problem-solving abilities may influence health outcomes. In this attempt to predict adherence to antiretroviral therapy (assessed by a survey of the number of pills skipped during a 3-day period), the final model revealed no significant, direct paths from the two social problem-solving latent variables (constructive, dysfunctional) to adherence. Rather, social problem-solving exerted significant indirect effects to adherence through its substantive effects on distress. Thus, social problem-solving abilities were significantly associated with therapeutic adherence through its palliative, beneficial (and perhaps, regulatory) effects on personal stress, distress and social support.

Studies that demonstrate connections between social problem-solving abilities and objectively diagnosed biomedical variables are particularly impressive, but the lack of clarity (or, in some cases, theory) raise intrigue and speculation about the nature of these relationships. Social problem-solving abilities were significantly predictive of pressure sores diagnosed over the first 3 years of traumatically acquired spinal cord injury (SCI), and these associations were more influential than clinically important variables like severity of disability and demographic characteristics (e.g., race, gender, age; Elliott, Bush, & Chen, 2006). These data are among the first to document the potential of social problem-solving abilities to prospectively predict individuals who may be at risk for expensive and often preventable health complications, above and beyond the predictive value of variables deemed medically important. Nevertheless, the exact mechanisms by which problem solving exerted this observed effect cannot be determined from this study.

We can speculate from other relevant studies that problem-solving abilities may have prevented pressure sores (and promoted healthier skin) among participants in the Elliott et al. (2006) study in a couple of ways. Effective problem-solvers may have had fewer health compromising



behaviors than persons who had dysfunctional styles (e.g., less sedentary, inactive behaviors, less alcohol intake; Godshall & Elliott, 1997); perhaps they were more successful in regulating their emotions and stress levels so they were more likely to attend to recommended regimens for skin care and maintenance (i.e., therapeutic adherence; Johnson, et al., 2006). However, a compelling study of glycemic control among African American men raises other possibilities.

In a study of 65 African American men with diabetes, Hill-Briggs and colleagues (2006) found avoidant and impulsive/careless styles (as measured by a short form of the SPSI-R) were significantly predictive of elevated hemoglobin A1C levels, indicative of poor glycemic control. The relationship between avoidant scores and A1C levels was not mediated by participant depression. These data are further supported by focus group research, in which a group of persons with poor glycemic control reported more avoidant and impulsive/careless responses to a problem-solving task than a group of individuals with good glycemic control (Hill-Briggs, Cooper, Loman, Brancati, & Cooper, 2003). It is possible that a dysfunctional problem solving style—in the context of chronic disease and stress—may have definite correlates with impaired immune system functioning (these correlations do not permit causal explanations; glycemic control may have been influenced by unmeasured variables such as diet, exercise and distress that may, too, be influenced by problem-solving abilities).

### Lessons Learned from Intervention Research

Problem-solving therapy (or training; PST) has promulgated as an attractive therapeutic option in many multidisciplinary health care settings. Indeed, the broader concept of “problem solving” is considered an essential element in chronic disease education and self-management programs (Hill-Briggs, 2003). PST grounded explicitly in the principles espoused by D’Zurilla and Goldfried has been applied with notable success in alleviating distress among persons with cancer (Nezu, Felgoise, McClure, & Houts, 2003; Nezu, Nezu, Friedman, & Faddis, 1998) and in improving coping and self-regulation skills among persons with TBI (Rath, Simon, Langenbahn, Sherr, & Diller, 2003). Problem-solving interventions have documented success in individual sessions provided in primary care settings (Mynors-Wallis, Garth, Lloyd-Thomas, & Tomlinson, 1995), in structured group therapy (Rath, et al., 2003), in telephone sessions with community-residing adults (Grant, Elliott, Weaver, Bartolucci, & Giger, 2002), and in online Web sessions for parents of children with TBI (Wade, Corey, & Wolfe, 2006a; and with observed benefits on child functioning, Wade, Corey, & Wolfe, 2006b). When null effects have appeared in the peer-review literature, these may be attributable in part to a perceived lack of relevance or lack of “tailoring” of the intervention to problems—as they are perceived and experienced—of immediate concern to participants (Shanmugham, et al., 2004; Study 2).

The positive effects of PST are usually ascribed to the treatment, particularly when significant increases are observed on self-appraised (Grant et al., 2002) and observed problem-solving abilities (Rath et al., 2003). There is some evidence that decreases in dysfunctional styles may be particularly essential in realizing significant decreases in depression (Rivera, Elliott, Berry, & Grant, 2007). Participants may display increased skills in finding more solutions to their problems following PST than persons assigned to a control group (Lesley, 2007). In one impressive multisite clinical trial, Sahler et al. (2005) found the beneficial effects of PST on lowering negative affect among mothers of children with cancer were pronounced among young, single mothers; Spanish-speaking mothers demonstrated continued improvements over a 3-month period. Nevertheless, there is perplexing evidence that PST can be associated with lower depression scores over time with no corresponding changes in social problem-solving abilities (Elliott, Brossart, Berry, & Fine, 2007).

Critical reviews point out that this work has recurring problems with the theoretical integrity of interventions, a lack of methodological details, and a lack of clarity regarding the “dosage” sufficient for therapeutic change. Nezu (2004) has been especially critical of the lack of

theoretical integrity, as the general flexibility of the original D’Zurilla and Goldfried model may be melded into or added on to any loosely defined cognitive-behavioral intervention. In some cases, it may appear that a published report used a “problem solving intervention” but there is no elaboration of principles of the model or how these were implemented in any replicable fashion (e.g., Smeets et al., in press). There are some high-profile trials in which training in “problem solving” was presented as a marquee feature of the multisite intervention, and this evidently meant training in rational, instrumental ways to cope with certain problems, but there is no mention or recognition of the problem orientation component and its theoretical function in self-regulation and motivation (e.g., Project REACH, Wisniewski et al., 2003). Nezu (2004) adamantly argues that PST must address issues germane to the problem orientation component, and strategies that strictly address the problem solving skills component will not be successful.

The broad range in the number of sessions across studies frustrates our ability to determine the dosage sufficient for therapeutic change. Some studies report clinical success with after a few sessions (Mynor-Wallis, et al., 1995) but other work shows no effects after two sessions administered six months apart (Elliott & Berry, 2007). Weekly sessions seem to have considerable benefits over several weeks (Grant et al., 2002; Rath, et al., 2003; Sahler et al., 2005). In some clinical scenarios, however, therapeutic change may occur with monthly sessions over the course of a year (Rivera, Elliott, Berry & Grant, 2007). Currently, we cannot conclude from the extant literature the minimal dosage of PST sufficient to effect beneficial, therapeutic changes. This is an issue that should be addressed in future work.

A critical review of problem solving interventions for family caregivers of stroke survivors concluded that the inconsistent use of a theoretical framework and concepts, and a recurring neglect in measuring participant problem-solving abilities limits our understanding of PST in this area (Lui, Ross, & Thompson, 2005). Very few of the studies reviewed used standardized measures of problem solving abilities despite their availability; many studies use the term without regard to the prevailing theoretical models and corresponding directives for training and assessment. Multidisciplinary research teams are often unfriendly to psychological theories. The Lui et al. critique reveals a high regard for cognitive-behavioral theories and a considerable respect for conducting theory-driven research and service. In particular, this critique conveys a premium on theory for organizing and interpreting multidisciplinary research, and for guiding service programs and their evaluation.

The most critical and informative review of this literature appeared in a recent meta-analysis of 31 studies of PST (Malouff, Thorsteinsson, & Schutte, 2007). This paper stayed true to the basic, organizing principles of the social problem-solving model and recognized the theoretical fidelity of authors across studies. PST demonstrated a significant effect size across studies, indicating a superiority over no treatment and treatment-as-usual. Although no moderating effects were found by mode of delivery (group, individual) or in the number of hours of PST (further confounding our ability to determine adequate “dosage”), these colleagues found significant effects for the presence of problem orientation training (consistent with the Nezu position) and homework assignments. Unfortunately, they also found an “investigator” effect: Studies conducted by one of the developers of PST had a significant contribution to the overall effects of PST. This contribution was stronger than the contributions of homework assignment and problem orientation training. Finally, PST was not significantly different from bona fide treatment alternatives.

### **Identifying and Solving Problems in the Research Base**

As these recent reviews and preceding comments attest, there are several problems that have lingered in this literature that impede our appreciation of social problem-solving abilities and the mechanisms by which they have beneficial effects on health. Yet the available research is

generally supportive, as we continue to see positive and theoretically consistent findings in multidisciplinary outlets (e.g., *Stroke*, *Journal of Behavioral Medicine*, *Pain*, *British Medical Journal*, *Patient Education and Counseling*) that signify an acceptance of social problem solving far beyond the usual confines of counseling psychology research (which also may signify the far-reaching impact of counseling psychology research). With these optimistic thoughts in mind, we assert the following issues should receive greater theoretical and empirical scrutiny in future work.

### **Utilize and Promote Theory-Driven Research and Instrumentation**

Exploratory studies are unquestionably compelling and intriguing, and they arguably broaden our vision and stoke our intellectual curiosity (e.g., Hill-Briggs et al., 2006). But the ordinary, rank-and-file, “stopgap” studies do not advance our understanding of social problem-solving abilities if they fail to make explicit ties to the prevailing theoretical models, ignore instruments tied to these models (PSI, SPSI-R), or make vague, obscure references to “problem solving” with no appreciation for the implications of prior work, subsequently squandering the opportunity for informed, relevant research that advances existing knowledge. It is frustrating to read studies that ignore prior work, and wonder how the results could have differed if proper attention had been given to the implications of previous theory-driven research (e.g., De Vliegu, et al., 2006).

These are not trivial matters: The most egregious and harmful incidents occur in large, multisite clinical trials that purport to use “problem solving interventions” with no ties to relevant theory-driven research, and then report null effects for their intervention (as in the case of Project REACH). For those invested in policy-relevant research, small-scale studies that yield positive results are held in suspicion because smaller samples often overestimate actual treatment effects (and thereby dismiss the convergence of data across methodologically diverse studies); large-scale, multisite randomized controlled trials (like Project REACH) are assumed to be more robust, generalizable, and necessary for determining the true efficacy of an intervention (Califf, 2002). Consequently, a perceived lack of evidence from a multisite clinical trial can irreparably smear the reputation of theory-driven PST, and cultivate unjustified disinterest among funding sources and policymakers for further study of PST.

There is some concern that the primary measures of problem-solving abilities—the PSI and the SPSI-R—may be too time-consuming and cumbersome for use in many clinical settings. Interestingly, a shorter, 25-item form of the SPSI-R has been used successfully in several studies (e.g. Grant et al., 2002) and some researchers have read the SPSI-R aloud to participants to ensure administration (with theoretical consistently results among persons with visual impairments, Dreer et al., 2005, and with disabling mobility impairments, Elliott, 1999). This may be asking too much for everyday clinical applications and shorter versions should be developed for telehealth applications and in primary care clinics. Preliminary item analysis of the SPSI-R suggests that a briefer version for greater use may be possible, with results generally consistent with contemporary reformulations of the social problem-solving model (Dreer et al., 2007).

### **Broaden the Scope of PST across Research Teams and Clinical Settings**

The effects of PST on depression and distress permeate the literature (Malouff et al., 2007). Recent applications have unsuccessfully tried to use PST to elevate life satisfaction (Rivera, Elliott, Berry, & Grant, 2007). More promising areas include the use of PST principles to promote healthier diets and lifestyles (Lesley, 2007; Perri et al., 2001) and to facilitate the use of problem-solving strategies in social interactions (essential for community reintegration; Rath et al., 2003). Although much of this work is hampered by the lack of specificity about the actual implementation of PST and relevant theory (rendering the results suspect and thwarting



generalizability and replicability; e.g., Van den Hout et al., 2003), these studies collectively illustrate the potential of PST in various applications. Other colleagues, for example, incorporate PST in promoting healthier lifestyles (including matters of impulse control, adherence, mood regulation) among persons who are HIV+ (the Health Living project, Gore-Felton et al., 2005) and who have substance abuse histories (Latimer, Winters, D’Zurilla, & Nichols, 2003). PST may prove to be quite adaptable in long-distance, community-based telehealth programs, in which ongoing services may be provided to underserved people and to those in remote areas (e.g., Grant et al., 2002; Wade et al., 2006a).

### **Identify the Mechanisms of Therapeutic Change**

It appears that there is no clear evidence of the “dosage” of PST necessary to effect change. Moreover, when change occurs, it is unclear if the changes are uniquely attributable to PST. One persistent issue concerns the intricate relationship between a negative orientation and self-report measures of distress. Even when we find evidence linking effective problem-solving abilities with objectively defined outcomes (e.g., skin ulcers), we do not know if effective problem-solving abilities influenced greater behavioral adherence to therapeutic regimens, or if the problem orientation component was instrumental in regulating emotional adjustment and prevented distress that could have compromised health. We do know that PST is more successful when the issues germane to the problem orientation component are addressed, and there is evidence that decreases in negative orientation and dysfunctional problem-solving styles can be associated with decreases in depression in response to PST (Rivera, Elliott, Berry, & Grant, 2007).

There is legitimate concern that—with respect to social problem-solving abilities—the “absence of the negative” may be more powerful than the “presence of the positive.” It is important for us to understand how and why a negative, dysfunctional style is associated with negative outcomes (and a greater likelihood of a positive outcome), and why and under what conditions a constructive problem-solving style proves uniquely beneficial. This could entail studies of social problem solving abilities and biomedical indicators of stress and adjustment. We believe this is a pressing issue given current interest in social problem-solving as an important variable in positive psychology (Heppner & Wang, 2003).

### **Attend to Matters of Diversity**

Few cognitive-behavioral variables appear to be as culturally resilient as social problem-solving abilities (Heppner et al., 2004). Large-scale studies that have controlled for possible effects of ethnicity have shown the relationships of social problem-solving abilities to distress and adherence (Johnson et al., 2006) and to health outcomes (Elliott et al., 2006) are not mediated by race. Studies of race-specific issues have yielded some of the most intriguing data to date among problem-solving and biomedical markers of health (among African-American men; Hill-Briggs, et al., 2006); other work has shown some effects for PST tailored to address health promotion issues among African Americans with hypertension (Lesley, 2007). There is also some indication that Spanish-speaking participants may experience greater benefits from PST than others (Sahler, et al., 2005).

There are many health problems that are disproportionately experienced by ethnic minorities in the United States (e.g., diabetes, stroke, disability incurred in acts of violence). Collectively, available evidence suggests that PST may be used in prevention and remedial programs to assist persons from minority backgrounds who live with these conditions. Although this work is promising, we have yet to see robust effects of PST across health conditions and research has yet to be conducted in any substantive fashion with certain ethnic groups (e.g., Chinese, although initial work has been consistent with extant theoretical models; see Siu & Shek,

2005). Ideally, the next wave of intervention research will document effects of PST among people across ethnic groups and cultures.

### **Problem Solving for the People**

Research to date suggests that PST can be effectively provided by psychologists, physicians, nurses and counselors. As the needs of our society demand greater attention to and support for the increasing number of people who live with a chronic health conditions that necessitates routine adherence to prescribed regimens (and currently this number constitutes almost 50% of the population of the United States; Partnerships for Solutions, 2004), health promotion programs will increasingly rely on paraprofessionals and community health workers to reach a larger number of individuals. These public health efforts already work with community groups (schools, churches) and with respected paraprofessionals within certain communities (e.g., promotoras in Latino communities) to educate people about health and health promotion skills. We believe problem-solving principles can be taught in public health interventions to reach a greater percentage of people who are affected by chronic health conditions (including family members of an individual with a diagnosable condition). We also know that PST can be effectively provided in the community via telehealth, so a greater use of existing technologies is expected in community-based programs. PST can be a useful modality for prevention programs for teaching health promotion skills (e.g., nutrition, sexual health and behaviors, exercise and activity) to individuals, generally.

A real concern lurking in this sea of possibility is the difficulty in determining when and how to best apply PST: People experience a wide range of problems in our communities, and paraprofessionals may be overwhelmed by the depth and severity of certain problems they will inevitably encounter in their clientele. Furthermore, we know that some individuals live with considerable distress and face many problems that have a restricted range of options and solutions. In these clinical scenarios, a strict reliance on the rather linear application of PST principles may be frustrating to paraprofessionals and clients. Research is needed to determine the best and optimal use of PST by paraprofessionals in public health interventions, and when doctoral-level providers are best suited for using PST in more complex cases that demand greater clinical expertise.

### **SUMMARY**

The study and application of social problem-solving abilities has matured beyond its early years in the counseling psychology literature to be embraced by a larger, multidisciplinary audience. Many theoretical issues remain for counseling psychologists to examine and refine, and an influx of new researchers would do much to assuage concerns of “investigator” effects in PST research. Perhaps the next wave of PST research will be conducted in public health programs. It behooves counseling psychology to be involved in this activity so that the theoretical tenets of social problem-solving are accurately integrated and realized in this work, and in the process, ensure a more accurate realization of the effects and applicability of social problem-solving theory and research for the public good.

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