

Social Cognitive Theory: A Framework for Therapeutic Recreation Practice

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The purpose of this article is to demonstrate the ability of social cognitive theory to serve as a framework for therapeutic recreation practice. The theory is well suited for such a role due to a number of characteristics. First, findings from a vast number of studies have shown it to be an accurate explanation of behavior and behavior change. Second, underlying constructs and relationships among those constructs have been clearly identified. In addition, research has illuminated specific techniques that can be employed to alter the constructs, which in turn, enhances the likelihood clients adopt and maintain desired behaviors. Therapeutic recreation specialists will find these features extremely useful as they implement TR interventions.

KEY WORDS: *Disabling Conditions, Leisure, Outcome Expectancy, Reciprocal Determinism, Self-Efficacy, Self-Regulation*

Therapeutic recreation (TR) services frequently focus upon the adoption, maintenance, and generalization of desired behaviors with the ultimate goal of improved health (Austin, 1998; Van Andel, 1998; Wilhite, Keller, & Caldwell, 1999). While the specific behaviors may vary among clients, it is reasonable to

believe there is a common mechanism underlying behavior change. Thus, the TR profession should strive to identify theories that accurately explain behavior and provide guidance on the implementation of behavior change interventions. The purpose of this article is to demonstrate, through description and

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examples, that social cognitive theory (Bandura, 1986) is one such theory.

At this time, readers are alerted to two points. First, a comprehensive overview of the theory is beyond the scope of this article and those who desire such information are encouraged to consult Bandura's (1986, 1991, 1997) previous works. Second, though only one theory will be discussed, it is acknowledged that there are numerous theories of human behavior; some of which have been applied to TR. An extremely abbreviated list includes: attribution theory which served as the basis for the concept of perceived freedom in leisure (Ellis & Morris, 1993); self-determination theory which played a central role in the development of the self-determination and enjoyment enhancement practice model (Dattilo, Kleiber, & Williams, 1998); and planned behavior theory which guided the solicitation and understanding of aquatic instructors' beliefs toward teaching swimming to people with disabilities in an inclusion setting (Conatser & Block, 2001).

Social cognitive theory, or at least one component of it, is not new to TR. In the mid 1980s, therapeutic recreation specialists (TRSs) were encouraged to develop interventions aimed at strengthening clients' self-efficacy (Savell, 1986); the confidence people have in their abilities to perform specified behaviors (Bandura, 1986, 1997). Even with this explicit call for action, only a few therapeutic recreation interventions utilizing the self-efficacy portion of the theory have been reported in the TR literature (Ellis, Maughan-Pritchett, & Ruddell, 1993; Ferguson & Jones, 2001; Maughan & Ellis, 1991; Wise & Hale, 1999). With respect to the full theory, its potential applications for therapeutic recreation services remain largely unexplored.

Social Cognitive Theory

According to social cognitive theory (Bandura, 1986), human behavior results from the interaction of multiple factors: personal, environmental, and behavioral. Personal factors reside within an individual and include psy-

chological constructs such as self-efficacy and self-regulation and biological features such as hormones and height. The second set of factors, environmental, are characteristics of situations which reside outside of an individual and can include other people and weather conditions. The final set of factors consists of those behaviors performed by an individual.

These three sets of factors exert influence upon one another and the term for this interaction is reciprocal determinism (Bandura, 1986). For example, a personal factor such as self-efficacy toward one's ability to raise plants partially determines whether or not a person will plant a garden. The more efficacious a person is, the more likely he/she will plant a garden. However, personal factors are not the only consideration. Environmental factors also influence the final decision. Living in an apartment with people who think gardening is a waste of time will probably decrease the likelihood that person will plant a garden. However, if the person decides to start a garden and is successful, the actual performance of the behavior may cause perceptions of personal capability to be altered to reflect the person's increased confidence toward his/her ability to garden, regardless of environmental conditions. In another example, the decision whether or not to attempt a challenging snow ski run is often based upon a blend of personal, environmental, and behavioral factors. A person may be confident in his/her ability (personal factor) to successfully negotiate the run if the snow has been groomed but not if the slope is covered with ice (environmental factor). If the person attempts the run and falls numerous times (behavioral factor), he/she may alter personal perceptions of efficacy.

Although each of the three sets of factors is hypothesized to influence and in turn be influenced by the others, the absolute level of contribution each factor makes toward an action and the relationship of contributions among factors are not fixed. Instead, the strength and direction of influence varies across situations, people, and activities. In some cases, as with people with severely lim-

ited cognitive abilities, environmental factors are the most influential contributors to action and have a strong effect on personal and behavioral factors. In other cases, personal or behavioral factors emerge as the greatest influence on action.

The remaining portion of this article will focus on personal factors, specifically self-efficacy, outcome expectancy, and self-regulation. This does not imply that the other two factors are unimportant. Rather, this article's restricted scope reflects the emphasis researchers have placed on the psychological constructs portion of the personal factor.

Self-Efficacy

The most frequently studied construct of social cognitive theory is self-efficacy. Perceptions of self-efficacy influence what activities people attempt, how much effort they expend on those activities, and how long they persevere when obstacles are encountered. Those who are efficacious try new activities, expend more effort, and persevere longer (Bandura, 1986, 1997).

Perceptions of self-efficacy can generalize across situations (Bandura, 1986, 1997). Bandura (1997) described five generalization processes but a more parsimonious explanation of generalization has been proposed by Cervone (1997, 1999, 2000). According to Cervone, efficacy generalizes across activities and situations where personal strengths and weaknesses are considered relevant. In other words, people are more efficacious toward situations where their strengths are necessary ingredients for success and less efficacious toward situations where personal weaknesses are believed to play an important role in determining success. For example, people who believe themselves to be shy will be less confident and tend to avoid situations that require them to speak before large groups or engage strangers in conversation. However, these same people may believe they are physically strong which enables them to successfully handle situations involving physical confrontations such as when returning a defective item for a refund or

telling someone not to cut in front of them while standing in a line (Holloway, Beuter, & Duda, 1988).

Outcome Expectancy

A second psychological construct, that has received considerably less attention from researchers, is outcome expectancy (Bandura, 1986). Outcome expectancy is the belief that the performance of a behavior will produce one or more consequences. Consequences can be categorized as social, physical, or self-evaluative. For instance, someone may believe that bicycling with his/her family will result in greater family unity (social), muscular soreness (physical), and enjoyment (self-evaluative). Consequences can be positive or negative but people tend to perform behaviors they believe will yield desired, positive outcomes.

Perceptions of efficacy and outcome expectancy can provide a more complete understanding of behavior when analyzed jointly rather than in isolation (Williams & Bond, 2002). The probability of performing a behavior is greatly diminished if the outcomes associated with the behavior are not valued or desired even if self-efficacy is high. Similarly, even though people may strongly desire the outcomes associated with a behavior, they are unlikely to perform the behavior if they lack the confidence in their abilities to attain the required level of performance. Although outcome expectancies can predict performance of health behaviors (O'Leary & The National Institute of Mental Health Multisite HIV Prevention Trial Group, 2001; Williams & Bond), of the two constructs, self-efficacy is more powerful (Bandura, 1986, 1997; Williams & Bond). With health promotion activities, self-efficacy has been shown to influence behavior directly and also indirectly through its effects on outcome expectancies (Anderson, Winett, & Wojcik, 2001; Anderson, Winett, Wojcik, Winett, & Bowden, 2001; Bandura, 1997, 1998; Conn, 1998; Dilorio, Dudley, Soet, Watkins, & Maibach, 2000). Those who are efficacious tend to focus on the positive outcomes of health promotion techniques.

Self-Regulation

A third psychological construct proposed by social cognitive theory is the self-regulatory system. The theory postulates that people regulate their behavior through a self-system composed of three subfunctions: (a) self-observation, (b) judgment, and (c) self-reaction (Bandura, 1986, 1991). First, people observe their actions and extract relevant performance feedback from the environment. Second, they judge the caliber of their performances against personally desired levels of achievement referred to as personal standards. Finally, they reward themselves based upon how well their performances measure up to corresponding personal standards. When performances are judged to have met or exceeded the corresponding standards, people reward themselves with intrinsic incentives such as positive self-evaluations (e.g., self-satisfaction, enjoyment) or external, tangible items (e.g., a bowl of ice cream, a new pair of snow skis). Conversely, when performances are judged as substandard, people punish themselves with negative self-evaluations (e.g., self-dissatisfaction, disappointment) or tangible actions (e.g., refrain from participating in the desired recreation activity of snow skiing). Self-reactions are based upon the relationship between performances and corresponding standards and not the absolute levels of performance. Therefore, even though two people may perform at a similar level, due to differences in personal standards, one may consider his/her performance successful while the other one may perceive failure (McAuley & Tammen, 1989).

The incentives people utilize, both positive and negative, serve as motivators. People strive to perform at levels that result in the self-administration of desired incentives. Likewise, they persevere until their performances match standards in order to avoid self-punishment.

Perceptions of self-efficacy affect self-regulation (Bandura, 1986, 1997; Bandura & Cervone, 1983, 1986). First, if performances are severely deficient and people lack confidence

in their abilities to reach the desired levels of performance, they adopt lower standards that more accurately reflect their perceived capabilities. However, those who are dissatisfied because they fall short of expectations but who are efficacious exert more effort and persevere in the pursuit of their standards. It should be noted that with cognitively complex activities, high levels of dissatisfaction lead to an increase in effort and subsequent decrease in performance (Bandura & Jourden, 1991; Cervone, Jiwani, & Wood, 1991; Cervone & Wood, 1995). On these types of tasks, simply increasing effort is a poorly suited approach. Rather, the optimal tactic is to carefully consider and systematically apply potential strategies. Finally, if efficacious people meet or exceed internal standards but would be dissatisfied with a repeat performance, they develop more demanding standards.

Social Cognitive Theory and Disabling Conditions

TRs find the social cognitive theory framework useful when they work with individuals with disabling conditions. Some disabling conditions, even though physical in nature, can have an effect on psychological constructs. For example, the majority of people who experience spinal cord injuries are young, physically active males. Suddenly, these individuals, who were often at the peak of their physical powers, find themselves dependent upon others for assistance with basic, everyday activities. It seems reasonable to believe that the drastic change in physical capability would have a concomitant, negative impact on perceptions of personal efficacy. This belief receives support from studies that indicate those with more severe spinal cord injuries are less confident they can successfully perform activities that were once completed without a second thought (Horn, Yoels, Wallace, Macrina, & Wrigley, 1998; Wise, Ellis, & Trunnell, 2002).

Other conditions, such as substance abuse, have psychological as well as physical aspects

(Bandura, 1999). People may become dependent upon substances because they adopt personal standards that do not stress abstinence or moderation, believe use of the substance results in positive outcomes, or lack confidence in their ability to resist societal and peer pressures to indulge in substances. Even when they complete rehabilitation, there is no guarantee of life-long abstinence. Long after physical cravings and withdrawal symptoms have ceased, abusers often lapse into former patterns of use because of weak efficacy and poorly developed self-regulatory skills (Gwaltney et al., 2001). For example, they may continue to associate with drug users because they do not believe they can establish meaningful relationships with people who are not drug users. Also, they may lack the skills to monitor their efforts at abstinence (e.g., forget how many marijuana cigarettes they have smoked) or identify non-drug related rewards to be self-administered upon achievement of personal standards.

Interventions that strengthen self-efficacy, change outcome expectancies, and improve self-regulatory capabilities are effective in treating substance abuse (Bandura, 1999; Larimer, Palmer, & Marlatt, 1999; Marlatt & Gordon, 1985). A strong sense of self-efficacy toward initiating actions to overcome dependency, dealing with relapses, and maintaining abstinence over a long period of time are predictors of abstinence. The likelihood of maintaining abstinence is further enhanced when the inaccuracies regarding outcome expectancies associated with substance abuse are corrected. Finally, those who are efficacious self-regulators are able to observe their employment of coping skills, compare the effects of the coping skills against stringent personal standards of abstinence, and reward themselves with desired nonsubstance related incentives upon meeting personal standards.

Depression is another disabling condition correlated with social cognitive theory (Bandura, 1986, 1997). Throughout the lifespan, people with a weaker sense of efficacy report more depressive symptoms (Ehrenberg, Cox,

& Koopman, 1991; Holahan & Holahan, 1987a; Holahan & Holahan, 1987b; McFarlane, Bellissimo, Norman, & Lange, 1994). This relationship between self-efficacy and depression has also been noted in people with spinal cord injuries and multiple sclerosis (Shnek et al., 1997). Perceptions of self-efficacy contribute to depression through a variety of pathways. In some cases, efficacy is a direct contributor (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999; Maciejewski, Prigerson, & Mazure, 2000) while in other cases it mediates the effects of stressful life events (Maciejewski et al.) or affects depression indirectly through its impacts on other variables (Bandura et al., 1999).

Depressive symptoms are also associated with faulty execution in each of the self-regulation system's subfunctions (Bandura, 1986). An exclusive focus on the negative aspects of performance, adoption of standards that are too lofty, and self-administration of severe punishment when performances fall short of expectations can all contribute to depression. Cervone and his colleagues (Cervone, Kopp, Schaumann, & Scott, 1994; Tillema, Cervone, & Scott, 2001) found that people who were dysphoric or in a negative mood tended to raise their personal standards, believing that loftier accomplishments would result in personal satisfaction. The investigators found that while standards were raised, corresponding perceptions of self-efficacy were not. In other words, people believed they needed to achieve higher levels of performance but lacked the confidence they could attain the new levels. This discrepancy is likely to lead to substandard performances and further administration of self-dissatisfaction or punishment. Fortunately, treatments that focus on instillation of realistic standards, accurate observation of behavior, and improvement of self-rewarding abilities result in decreased levels of self-reported depression (Heiby, 1986; Jackson, 1972).

Anxiety disorders and phobias have also been examined from the social cognitive theory perspective. According to the theory, peo-

ple feel anxious or fearful toward situations they believe they are ill equipped to deal with and which may result in aversive outcomes (Bandura, 1986). For instance, children diagnosed with social phobia, separation anxiety disorder, or generalized anxiety disorder are not confident they can effectively deal with situations involving people and view these situations as more dangerous than do children without such diagnoses (Bogels & Zigterman, 2000).

People who receive treatment designed to increase competence in the subfunctions of self-regulation become less anxious in social situations (Rehm & Marston, 1968). Likewise, treatments that focus on teaching coping skills and instilling the confidence to use the skills in a variety of situations have been effective in strengthening efficacy, increasing the performance of behaviors that were once avoided, and decreasing fear in people with phobias (Bandura, Adams, Hardy, & Howells, 1980; Bandura, Jeffery, & Gajdos, 1975; Williams, Kinney, & Falbo, 1989).

Altering Psychological Variables

To maximize the impact of TR interventions, the guiding theory must illuminate how the component constructs can be altered. With this knowledge, desired outcomes can be procured.

Self-Efficacy

Self-efficacy has been linked to numerous health related outcomes. A strong sense of self-efficacy predicts higher quality of life, greater psychological well being (Hampton, 2000), and shorter hospital stays (Horn et al., 1998; Lou, Dai, & Catanzaro, 1997) in people with spinal cord injuries. In addition, self-efficacy has been found to be an accurate predictor of recovery from surgery (Orbell, Johnston, Rowley, Davey, & Espley, 2001) and physical functioning in older adults (Rejeski, Miller, Foy, Messier, & Rapp, 2001; Resnik, 1999) and clients with chronic low back pain (Altmaier, Russell, Kao, Lehmann,

& Weinstein, 1993; Lackner, Carosella, & Feuerstein, 1996). Those with stronger perceptions of personal efficacy recovered quicker and exhibited higher levels of functioning. Efficaciousness has also been associated with improvements in cardiovascular endurance among clients with chronic obstructive pulmonary disease (Toshima, Kaplan, & Ries, 1990) and adherence to disability related self-care behaviors in people with diabetes (Hurley & Shea, 1992; Senecal, Nouwen, & White, 2000; Williams & Bond, 2002).

How can self-efficacy beliefs be modified? Perceptions of self-efficacy are affected by four sources of information: performance accomplishments, vicarious experiences, verbal persuasive messages, and physiological signals (Bandura, 1986, 1997). Information provided by each source, depending upon how it is perceived, weighted, and integrated into existing beliefs can either strengthen or weaken efficacy.

Performance accomplishments are the most powerful source of information because they provide direct evidence of personal capabilities. Generally, successful performance of a behavior strengthens efficacy while failure weakens it.

Because performance accomplishments are so influential, TRSs should concentrate on ensuring that clients successfully perform the desired behavior. Successful performances are more likely to occur when the behavior is task analyzed and an individualized teaching progression is developed. As clients attempt specific steps of the progression, they may require aids or physical assistance from TRSs (Bandura et al., 1980; Bandura et al., 1975). Aids can include adjustments to rules or equipment (e.g., use of a racquet with a large hitting surface; Pellett & Lox, 1998). As steps are mastered, aids and assistance are removed and clients practice the behavior independently (Bandura et al., 1975).

Vicarious experiences, the second source of information, occur when people observe a model. When the model, who possesses characteristics similar to observers (e.g., gender,

ability level, disability), is successful, observers think, "If that person can do it then so can I" and their efficacy strengthens. Conversely, if the same model is not successful, observers think, "If that person cannot do it then how can I?" and their efficacy weakens.

Vicarious experiences can be powerful, especially when actual performance of a behavior is not possible due to injury or lack of necessary equipment (Wise & Trunnell, 2001). The models used to demonstrate behaviors can come from a variety of sources. TRSs or peers can act as models. To maximize their impact, models should verbally describe their actions, strategies, and how they overcome problems (Gould & Weiss, 1981). Modeling performances may be live or on videotape (Feltz, Landers, & Raeder, 1979; George, Feltz, & Chase, 1992; Lirgg & Feltz, 1991; McCullagh, 1987). Clients themselves, through mental imagery, can be another source of models (Bandura et al., 1980; Ellis et al., 1993; Feltz & Riessinger, 1990). In this technique, clients are taught to mentally visualize themselves successfully performing behaviors.

The third source of efficacy information, verbal persuasion statements, tends to transform efficacy expectations when someone who is respected and considered competent and knowledgeable about the behavior expresses his/her belief in an individual's ability to be successful. If the expert is optimistic, then efficacy should be strengthened. However, if the expert expresses doubt, efficacy is likely to be weakened.

For verbal persuasive messages to be effective, TRSs need to be competent in the behaviors they teach so they can be recognized as conveyers of accurate information. To enhance the credibility of their messages, TRSs should furnish other sources of concurring evidence (e.g., completed skills checklist, finished craft project). Messages should follow performances (Ewart, Taylor, Reese, & DeBusk, 1983; Taylor, Bandura, Ewart, Miller, & DeBusk, 1985; Wise, Posner, & Walker, 2002; Wise & Trunnell, 2001) and provide specific feedback (Schunk, 1995; Schunk & Swartz,

1993; Wise, Posner et al.). When performances are successful, messages should indicate that success was due to internal and stable personal factors such as ability and competence (Ellis et al., 1993; Wise, Posner et al.; Wise & Trunnell). For example, "Jim, you used correct technique in performing that behavior." When performances are unsuccessful, messages should attribute failure to factors that reside outside of the individual. For example, "Jim, the wind was blowing hard and that is why you weren't able to hit the target." Messages are also delivered prior to performances. To strengthen efficacy, these messages should convey the TRSs' confidence in clients' capabilities to perform the behaviors (Wise & Trunnell).

The final source of efficacy information is the interpretation of physiological signals. Increases in heart rate and sweat production may be interpreted two ways, each with very different effects on perceptions of efficacy. Efficacy can be weakened when the increases are viewed as indicators of impending poor performance. Efficacy can be strengthened however, when the same signals are believed to herald the body's preparation for performance.

Not many techniques to alter self-efficacy through physiological arousal have been described in research literature. But, it seems plausible that TRSs should become knowledgeable about various, possible causes of physiological signals such as fatigue, aches, pains, sweaty palms, racing heart rates, and "butterflies" in the stomach. Then, when clients receive signals that may be interpreted in a manner that results in weakened efficacy, professionals should be adept at convincingly presenting plausible alternative explanations so as to minimize the negative impacts (Wise, Ellis et al., 2002). For example, while participating in a TR session the day following a weight training workout, Jane may mention to the TRS that she feels weak. The TRS could respond with, "Jane, it is perfectly normal to feel weaker the day after a strenuous workout because your body is still recovering. Recovering is what makes you stronger. In a day or

so you will have completely recovered and be stronger than you were before the workout.”

Efficacy Generalization

It is common for TRSs to strive for generalization from therapeutic activities and settings to activities and situations outside of the treatment milieu. Much of the research on efficacy generalization has involved health care professionals and clients with disabling conditions (Ewart et al., 1983; Kelley, Coursey, & Selby, 1997; Taylor et al., 1985; Wise, Ellis et al., 2002). In these studies, efficacy generalized from running on treadmills to having sexual intercourse; negotiating rock climbing routes to completing job interviews; and lifting weights to performing activities of daily living.

The study by Wise, Ellis et al. (2002) examined the effects of an intervention designed to generalize efficacy from weight training exercises to activities of daily living (ADL) among adults with spinal injuries. The lead author, a certified therapeutic recreation specialist, developed and implemented the intervention. A variety of techniques were incorporated into the intervention to promote the generalization of efficacy. First, weight training exercises that mimicked ADL were selected. For example, dips and triceps push-downs were chosen because they involve muscle groups and movement patterns similar to those used in the activities of transferring and pushing a wheelchair, respectively. Second, strength was promoted as a coping skill. Many ADL such as transferring or carrying large bags of groceries require strength to perform and therefore, an increase in muscular strength should make the activities easier to perform. Third, the therapeutic recreation specialist helped participants recognize that if they could lift more than a ton of weight cumulatively during a workout, then they should be able to do things like lift full baskets of laundry. Finally, participants were encouraged to openly share the positive impacts weight training had on their daily lives. Those who received the intervention became more

confident in their abilities to perform ADL while those who did not receive the intervention reported no significant changes in ADL efficacy.

Besides involving health care professionals and people with disabilities, the previous four studies (Ewart et al., 1983; Kelley et al., 1997; Taylor et al., 1985; Wise, Ellis et al., 2002) share another similarity; researchers promoted the generalization of efficacy through counseling/discussion sessions. The purpose of these sessions was to, within a short period of time, have participants recognize that their personal strengths (i.e., cardiac capability, ability to surmount challenges, muscular strength) were applicable in many situations. The interventions by Ewart et al. and Taylor et al. achieved generalization of efficacy after one session. Wise, Ellis et al.'s and Kelley et al.'s interventions took slightly longer; 6 and 9 sessions, respectively. When counseling/discussion sessions are not employed, generalization takes much longer (Holloway et al., 1988; Paxton, 1998; Rejeski, Ettinger, Martin, & Morgan, 1998) or does not occur (Wise, Ellis et al.).

A variety of techniques (Cervone, 1997, 1999; Wise, Ellis et al., 2002) can be incorporated into a counseling/discussion session or applied throughout an intervention to increase the probability of efficacy generalization. These include selecting intervention behaviors that are similar to the behaviors toward which generalization is aimed, explicitly identifying the similarities for clients, and periodically asking clients to describe the similarities. Three other techniques are having clients recognize that they gained a new personal strength or transformed a personal weakness into strength as a result of the intervention, listing situations where intervention behaviors are relevant, and encouraging clients to share, with each other, the positive impacts interventions have had upon different aspects of their lives.

Outcome Expectancy

The construct of outcome expectancy has been connected to the performance of health

behaviors. In a study by Clark and Dodge (1999), self-efficacy and outcome expectancy predicted the degree to which women with heart disease followed prescribed recommendations to manage their disease. Those with stronger self-efficacy and who believed the behaviors would benefit their health adhered more closely to the recommendations.

Compared to self-efficacy, relatively little research exists regarding the alteration of outcome expectancies. However, some general guidelines can be proposed (Bandura, 1986, 1998). Outcome expectancy has two aspects: beliefs that certain consequences are associated with a behavior and the evaluation, positive or negative, of those consequences. Therefore, interventions should strive to: increase awareness of the positive consequences associated with performance of the desired behavior (e.g., reading books can be fun, new people can be met by joining a local book club); change negatively evaluated consequences (e.g., pointing out that books are not always expensive—used books can often be purchased for less than \$1 at library sponsored book sales); and correct any factual errors clients may possess (e.g., reading is the answer to all of my problems, reading causes eye problems). Also, because self-efficacy has a positive, direct effect on outcome expectancy (Bandura, 1986, 1997, 1998; Conn, 1998; Dilorio et al., 2000), self-efficacy should be strengthened.

Self-Regulation

The benefits of many health-promoting behaviors are only realized as long as the behaviors are performed. For example, benefits of exercise quickly vanish upon cessation of involvement. Long-term involvement in exercise is marked by a strong sense of self-efficacy (Bock, Marcus, Pinto, & Forsyth, 2001; Rimal, 2001) while a weak sense of efficacy is associated with relapse (Hovell et al., 1990). Improved adherence to physical exercise programs has been a consistent product of interventions based upon social cognitive theory (Belisle, Roskies, & Levesque,

1987; King, Taylor, Haskell, & DeBusk, 1988; McAuley, 1993; McAuley, Courneya, Rudolph, & Lox, 1994; McAuley & Jacobson, 1991; Oman & McAuley, 1993).

Weight loss is another behavior that requires a long-term commitment. People who keep the weight off are characterized by the ability to self-regulate their behavior (Kitsantas, 2000). They set weight loss goals, employ strategies to increase the likelihood of goal achievement, monitor their behavior, and reward themselves upon achievement of goals.

In a similar vein, when individuals have chronic disabling conditions (e.g., lung disease, stroke, heart disease, arthritis), managing one's behavior to minimize associated negative effects and prevent complications calls for consistent, sustained, self-motivation (Clark & Zimmerman, 1990). Patients with chronic conditions who learn how to establish realistic standards, develop and employ coping strategies, and self-reward, experience fewer visits to health care providers, hospitalizations, and number of days spent in hospitals as well as decreases in pain and joint impairment (Dougherty, Johnson-Crowley, Lewis, & Thompson, 2001; Lorig et al., 1999; Lorig et al., 2001; O'Leary, Shoor, Lorig, & Holman, 1988). Besides being effective, self-regulation interventions are relatively inexpensive to implement, result in significant, yearly, health care cost savings (Groessel & Cronan, 2000; Lorig et al., 2001), and can have concomitant, positive effects on self-efficacy, outcome expectancies, and performance (Anderson, Winnett, Wojcik et al., 2001; Frayne & Geringer, 2000; Frayne & Latham, 1987).

Self-observation. In order to motivate themselves, people must first determine how they are doing (Bandura, 1986, 1991). Although there are numerous elements that comprise any situation, many of these do not provide relevant information so people must learn where to focus their attention. One method is to inspect personal standards. For example, inspection may reveal that standards stress the use of correct technique. If so, then technique should be the focus of attention. In a second

method, TRSs serve as formal identifiers. Each behavior is composed of numerous subskills that must be blended together to create the final action. Many people would quickly become confused, frustrated, and discouraged if they had to observe every subskill of every new behavior. TRSs can streamline the observation process by explicitly pointing out the most critical subskills of each behavior. Clients then focus their attention on the critical subskills.

Even though clients may know what features to observe, for some behaviors, it may be physically impossible for them to do so or they may forget or distort, over time, what they observed. In the first case, TRSs can verbally supply an accurate description of performances, videotape clients, or strategically position mirrors to provide visual feedback (Berger, 1999). In the second case, simple, unobtrusive, and convenient, recording instruments (e.g., small audiotape recorders, hand held counters, stop watches) and techniques (e.g., moving pennies from one pocket to another pocket) can be employed with the collected information eventually transferred to a tally sheet, time diary, or chart for future reference (Frayne & Latham, 1987; Kanfer & Gaelick-Buys, 1991; Kanfer & Schefft, 1988).

Judgment. People judge the adequacy of their performances against personal standards (Bandura, 1986, 1991). TRSs can collaborate with clients to ensure that clients' standards are challenging, realistic, specific, and personally important; stress personal mastery of skills; and incorporate a short-term time frame (Bandura, 1986, 1997; Bandura & Cervone, 1983, 1986; Bandura & Schunk, 1981; Kavus-sanu & Roberts, 1996; Locke & Latham, 1990).

Besides assisting clients with the formulation of personal standards, TRSs can supply information upon which to base standards. Information can be conveyed through modeling, direct teaching, and social reactions (Bandura, 1986, 1991). First, TRSs can influence clients' standards by acting as models themselves or using the clients' peers as models.

When models demonstrate an activity, they provide visual images of how a properly executed activity appears. These images become the criteria by which clients judge the adequacy of their own performances. Another way professionals model standards is through personal behavior. When professionals consistently subscribe to demanding personal standards, clients are more apt to adopt demanding standards as well.

Professionals also influence clients' standards through direct teaching. For example, professionals may instruct clients that at least one hour a day must be devoted to playing chess in order to become a proficient player. Clients then fashion this schedule into a standard.

The final way professionals influence standards is through their reactions to clients' performances. When professionals congratulate clients for outstanding performances or express disappointment in mediocre performances, clients develop more challenging standards.

Self-reactions. Lastly, people reward or punish themselves depending on the adequacy of their performances (Bandura, 1986, 1991). The self-evaluations people administer can have a direct effect on performance (Bandura & Jourden, 1991; Cervone & Wood, 1995). When engaging in physical exercise, the self-evaluations people experience motivate them to intensify their efforts and improve performance (Bandura & Cervone, 1983, 1986).

There are several methods that can be applied to help people become more effective self-administrators of rewards and punishments. First, TRSs can assist clients with the identification of personally important rewards and punishments. Rewards and punishments can be intrinsic or extrinsic in nature (Bandura, 1986). Intrinsic is exemplified by self-evaluations such as satisfaction or dissatisfaction. Extrinsic consequences are those that originate outside of an individual. Money, praise from others, and socially imposed penalties are some examples. Whether intrinsic or extrinsic, consequences must be strongly liked or dis-

liked and easily self-administered (Frayne & Latham, 1987).

A second method is direct tuition (Bandura, Grusec, & Menlove, 1967; Bandura & Perloff, 1967; Jackson, 1972; Rehm & Marston, 1968). In this method, TRSs explain how self-reaction works and its role in the adoption and maintenance of behaviors. Then, when clients achieve or fall short of personal standards, they are instructed to reward or punish themselves, respectively.

Modeling is a final method TRSs can employ. With this method, clients observe a model administering him/herself a reward for achieving a standard or punishment when a performance falls short (Bandura et al., 1967; Jackson, 1972).

Besides the techniques listed in the preceding paragraphs on self-regulation, competency in each subfunction can be enhanced through behavioral contracts (Frayne & Latham, 1987). In behavioral contracts, clients specify personal standards, method(s) of data collection, the process and dates by which standards are to be met, and consequences for adequate and inadequate performances. The contracts are periodically reviewed to note clients' progress and if necessary, make adjustments. Two additional techniques are homework assignments and role-playing (Kanfer & Gaelick-Buys, 1991). Homework assignments can be tailored to the needs of each client and role-playing allows them to gain immediate experience with the skills that have been presented by TRSs.

Conclusion

It is hoped this article stimulates the TR profession to consider adopting social cognitive theory as a framework for TR practice. The theory provides a comprehensive explanation of behavior and guidance on how to elicit desired behavior changes in clients. Furthermore, the theory has successfully directed therapeutic efforts with a variety of behaviors, in a variety of populations, in a variety of settings (Bandura, 1986, 1997).

Some TR professionals may believe it too

difficult to implement components of the theory into practice. Not so. Most TRSs probably already incorporate many elements of social cognitive theory into their programs. To illustrate, professionals are encouraged to keep track of those techniques mentioned in the following scenario that they use in their own practices.

Earlier in this paper, an intervention program designed to generalize efficacy from weight training exercises to ADL among people with spinal injuries was introduced (Wise, Ellis et al., 2002). Although the focus of that discussion was efficacy generalization, the intervention program addressed several additional psychological concepts from social cognitive theory. For example, during the initial session, participants identified outcomes they expected as a result of taking part in the program. Outcomes included enjoyment, increased physical strength and knowledge of how to weight train with their disabilities, and opportunities to socialize with other people who were facing similar personal challenges. The therapeutic recreation specialist reinforced that these outcomes were likely and mentioned other potential outcomes (e.g., learning how to develop personalized weight training routines).

As with many therapeutic recreation interventions, continuation of the behavior (i.e., weight training) beyond cessation of the formal intervention program was desired. Therefore, to strengthen weight training efficacy, information from all four sources (i.e., vicarious experiences, performance accomplishments, verbal messages, physiological arousal) was supplied through multiple techniques. For instance, the therapeutic recreation specialist and some of the participants modeled each weight training exercise and then all participants practiced each exercise and received verbal feedback. When appropriate, feedback focused on what lifters could do to improve their performances. Other times, it stressed specific things they were doing correctly. Also, whenever the lifters said they were sore and this adversely affected their achievement

levels, the therapeutic recreation specialist explained how these were natural outcomes of beginning a weight training program and not indicators of personal inability.

To generalize efficacy from the exercises to ADL, exercises that mimicked the movements of targeted ADL were incorporated into workouts. Furthermore, the CTRS facilitated discussion/processing sessions where participants came to recognize how outcomes of weight training (e.g., increased physical strength) could be assets in many situations outside the weight room. This recognition was fostered, in a group format, through sharing the results of homework assignments (e.g., between now and the next workout, note three situations where an increase in muscular strength could be beneficial) and responses to questions raised by the CTRS (e.g., how are the triceps pushdown exercise and wheelchair transfer similar?).

The three subfunctions of self-regulation received attention throughout the intervention program. To aid with self-observation, lifters maintained a written record of the number of sets and repetitions they performed and weights they lifted during each workout. Periodically, the records from initial workouts were compared against those of later workouts. It was not uncommon for lifters to make verbal comments about how many more repetitions they were completing or how much more weight they were lifting as the program progressed. Also during these comparisons, they frequently expressed how much they enjoyed lifting weights and becoming stronger.

How many of the techniques described in the intervention program do you employ in your TR interventions? One? two? more? It is likely you recognized at least one technique and probably many more. Besides demonstrating the ease with which TRSs could incorporate theory-based techniques into practice, the preceding illustration displays how a theory, when it is understood, can guide practice in a manner that increases the likelihood of eliciting desired changes in clients.

Post intervention analyses revealed that the

intervention program produced significantly stronger perceptions of efficacy toward continuing to weight train and performing ADL. Unfortunately, the long-term effects of the program are not fully known. However, one participant reported strong weight training and ADL efficacy values and continued involvement in weight training eight months post treatment (Wise & Hale, 1999). This report provides limited, yet promising, evidence of the robustness of the psychological and behavioral changes caused by an intervention program based upon social cognitive theory.

If the profession decides to adopt social cognitive theory, this paper can only serve as a partial examination of how the theory can impact TR practice. Further explanation and investigation are needed to clarify the theory's implications for TR. For example, how is the theory to be applied by professionals who work with people with severe cognitive impairments? Most likely, this group of professionals would focus more on the environmental factors aspect of the theory rather than the psychological constructs highlighted in this paper. TR services delivered to this population would be more concerned with the availability of adapted equipment and presence of supportive others rather than the alteration of efficacy perceptions or development of self-regulation skills.

Also, because this paper dealt exclusively with the personal factors aspect of the theory, a thorough review of the other two aspects, environmental and behavioral factors, should be a future goal. The review could cover how environmental and behavioral factors influence each other as well as personal factors.

Finally, assessment and evaluation, two fundamental elements of TR, were not part of the present discussion. Social cognitive theory has implications for both of these phases of the TR process. Future efforts should include a review of the related literature and subsequent development of assessment and evaluation tools using a social cognitive framework.

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