1. SOCIO-PSYCHOLOGICAL ASPECTS OF SPORT

1.1 UNDERSTANDING EXERCISE MOTIVATION: EXAMINING THE REVISED SOCIAL-COGNITIVE MODEL OF ACHIEVEMENT MOTIVATION

Despite the numerous proven physical and psychological benefits associated with regular physical activity, current statistics suggest that over 50% of the adult population in the United States do not engage in the recommended levels of physical activity (Centers for Disease Control, 2007). Worldwide, the World Health Organization (WHO) estimates that 2 million deaths can be attributed to physical inactivity (WHO, 2007). Hence, it is important to increase adult physical activity participation. To better understand achievement motivation, competence and achievement goals have dominated the study of physical activity motivation (Duda, 2005). These constructs from several similar achievement goal-based social-cognitive models (Ames, 1992; Dweck, 1986; Dweck & Leggett, 1988; Nicholls, 1984, 1989).

Dweck and Leggett's (1988) social cognitive mode l The term cognitive model can have basically two meanings. In cognitive psychology, a model is a simplified representation of reality. The essential quality of such a model is to help deciding the appropriate actions, i.e. of achievement motivation has been adapted from psychology and education based research to explain, and hopefully increase, leisure-time physical activity participation in adults as well as adolescents (e.g., Kasimatis, Miller, & Marcussen, 1996; Lochbaum, Bixby, Lutz, Parsons, & Akerhielm, 2006; Wang, Chatzisarantis, Spray, & Biddle, 2002). This model relies on three main constructs: implicit theories of ability, achievement goals and perceived competence. Recently, researchers have revised this model (Cury, Elliot, Da Fonseca, & Moiler, 2006). Hence, given the abysmal physical activity rates worldwide, the purpose of the present series of investigations was to examine the viability of the revised-social cognitive model of motivation to understand motivation for leisure time physical activity.

1.1.1 The social-cognitive model of achievement motivation

The social-cognitive model of achievement motivation differentiates between the way an individual interprets ability and success (Dweck, 1986; Dweck & Leggett, 1988). This theoretical approach allows researchers to explain the specific terms which underlie motivational processes and to characterize behaviors as adaptive or

Within this model, challenge seeking, high persistence exerted effort, enjoyment and task mastery characterize adaptive achievement striving behaviors. In contrast, maladaptive behavior is described as avoidance of challenging situations, low persistence when faced with obstacles, low enjoyment, and a performance orientation. Education based research strongly suggests that differences in adaptive and maladaptive behaviors do not imply differences in innate or learned ability for the task at hand (e.g., Dweck & Leggett, 1988). Instead, research over the last 20 years supports the fact that performance and motivational differences between individuals with the same innate or learned ability differ based on their implicit self-theory, perceptions of competence, and adopted achievement goal orientation (Dweck & Molden, 2005).

Historically, the implicit self-theory construct, the foundation of the original social-cognitive model, was proposed to understand learning and performance of cognitive tasks of children (Dweck, 1986; Dweck & Leggett, 1988; Erdley & Dweck, 1993). Individuals are theorized to differ in the degree to which they perceive intelligence as malleable

If an individual views intelligence as fixed, they are an entity theorist. If an individual views intelligence as malleable, they are an incremental theorist. An important aspect of the social-cognitive model of achievement motivation is the processing of the two self theories on motivational outcomes. Specifically, individuals holding an entity theory of intelligence are more likely to endorse a performance goal orientation, whereas individuals holding an incremental theory of intelligence are most likely to endorse a mastery goal orientation. Both of these pathways may be motivationally adaptive, except when individuals holding an entity theory, a performance orientation, and low perceptions of their competence are theorized to exhibited learned helpless behaviors.

Researchers have examined implicit self-theories for sport as stand alone constructs (Kasimatis et al., 1996; Ommundsen, 2003) as well as examining the entire model (Biddle, Soos, Chatzisarantis, 1999; Lochbaum et al., 2006; Spray, Wang, Biddle, Chatzisarantis, & Warburton, 2006; Wang & Biddle, 2003). Ommundsen (2003) examined the relationships among implicit self-theories

and metacognitive self-regulation strategies with regard to learning in physical education classes in a sample of 343 adolescents. Ommundsen reported that an incremental theory positively related to adaptive metacognitive strategies while the stable aspect of an entity theory was negatively related to adaptive metacognitive strategies. Kasimatis and colleagues (1996) reported in 50 college students that those being given an incremental framework reported increased motivation, self-efficacy, and less negative affect to viewing a difficult exercise routine compared to the participants in the entity theory condition.

Investigations examining the entire social-cognitive model of achievement motivation have been more mixed in their support of the implicit theories (Biddle et al., 1999; Lochbaum et al., 2006; Wang & Biddle, 2003). For instance, Biddle and colleagues (1999) examined the ability of the social-cognitive model of achievement motivation to predict physical activity intentions in a large (N = 723) sample of Hungarian adolescents. Their results indicated a good fit for the model as it accounted for 20.8% of the variance intentions, but implicit theory beliefs were not strongly associated with goal orientations (r range for ego -.01 to. 17; r range for task -.04 to .32). Wang and Biddle (2003) tested the ability of the social-cognitive model to explain variance in intrinsic motivation in a moderately sized sample (N = 155) of undergraduate and graduate students in Singapore. Though they reported overall that their data fit the socialcognitive model well, they also reported a very weak correlation (r =. 18) between entity theory and an ego orientation. The correlation between incremental theory and a task orientation was strong (r =.54).

Most recently, Lochbaum et al. (2006) examined the social-cognitive model of achievement motivation with regards to explaining self-reported participation in and moderate intensity physical as well as affect for engagement in physical activity in a large sample (N = 539) of university undergraduates. Participants were split on their perceptions of physical ability, high or low. The models accounted for 29.5% and 21.1% of affect and 15.3% and 7.0% in strenuous and moderate intensity exercise for high and low perceived ability participants, respectively. Unfortunately, in the initial stages, the social-cognitive model was not a good fit for the data in a smaller sample (n = 100). As with Biddle et al. (1999) and Wang and Biddle (2003) the relationship between an entity theory and ego orientation was very weak. Only Spray et al. (2006) have demonstrated more conclusive Determinative; beyond dispute or question. That which is conclusive is manifest, clear, or obvious. It is a legal inference made so peremptorily that it cannot be overthrown or contradicted.support for the social-cognitive model in an examination of sport ability beliefs and achievement goals in 123 English adolescents. With failure

feedback experimentally manipulated, the entity group was more orientated towards ego goal while the incremental group was more orientated towards a task goal. In summary, besides Spray and colleague (2006), it appears that original social-cognitive model has not been fully supported because the entity theory--ego goal orientation relationship has been weak to non-existent.

1.1.2 The revised social-cognitive model of achievement motivation

Educational researchers have also noted various weaknesses in the original social cognitive model of achievement motivation (Cury et al., 2006; Elliot & Dweck, 2005). Specifically, Elliot and Dweck (2005) suggested one major weakness involving the competence construct. Competence has long been viewed as a moderator of consequences in achievement settings (Dweck, 1986; Elliot & Church, 1997) as it provides an evaluation that energizes or directs behavior. Elliot and Dweck (2005) suggested that research in achievement motivation literature should emphasize perceived competence as a central tenet to any social-cognitive framework. Thus, within the revised social-cognitive model of achievement motivation, competence is represented as an antecedent to achievement motivation, not as a moderator of the ensuing effects (Elliot & Church, 1997; Cury et al., 2006).

In addition to reexamining the placement of competence in social-cognitive models, Cury et al. (2006) strongly suggested the need for the 2 X 2 achievement goal framework (Elliot, 1999; Elliot &McGregor, 2001; Elliot & Thrash 2002). The 2 X 2 framework revises the classic mastery and performance goal dichotomy to incorporate valence (approach, avoidance). The 2 X 2 framework incorporates the following two dimensions based relative to perceived competence: how competence is defined (mastery or performance) and how it is valenced (approach or avoid). Hence, in the 2 X 2 goal framework there are four types of goals: mastery-approach, mastery-avoid, performance-approach, and performance-avoid as these represent the most prevalent goal orientations (Conroy & Elliot, 2004; Elliot, 1999; Elliot & Thrash, 2001; 2002).

In mastery goals, an individual is concerned with mastery of a skill or task, and is self-referenced. A performance based goal is one in which the outcome of the goals is the focal point,and is other referenced. An approach valence indicates a behavior, which is initiated by a positive or desirable event or possibility. In contrast, an avoidance valence indicates a behavior, which is initiated by a negative or undesirable event or possibility (Elliot, 1999). Conducting two investigations on school achievement in French adolescent with the above discussed modifications to the social-cognitive model of achievement motivation, Cury and colleagues (2006) supported the placement of competence as an antecedent to goal adoption as well as the 2 X 2 achievement

goal framework as a useful substitution for the classic dichotomous goal framework. Hence, this new model may hold promise for understanding leisure-time exercise motivation.