

**ADJUSTMENT TO CAREER TERMINATION
IN PROFESSIONAL HOCKEY PLAYERS**

by

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ABSTRACT

The adjustment of National Hockey League Players (NHL) to retirement from professional sport and factors associated with this adjustment were investigated. Mail-out questionnaire packages were completed by 157 active (24% response) and 81 retired (29% response) NHL players. The adjustment to retirement was assessed by sport-specific measures (Emotional Adjustment to Retirement and Functional Adjustment to Retirement; Baillie, 1992) and by general psychological measures [Center for Epidemiologic Studies – Depressed Mood Scale (CES-D; Radloff, 1977); Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988); Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griggin, 1985) and Life-as-a-Whole-Index (LAW; Andrews, & Withey, 1976)].

Factors related to adjustment to retirement were transition characteristics and institutional support (researcher generated), specific planning (Specific Planning for Retirement; Baillie, 1992), athletic identity [Athletic Identity Measurement Scale (AIMS; Brewer, Van Raalte, & Linder, 1993)], perceived social support [Social Support Questionnaire (SSQ6; Sarason, Sarason, Shearin, & Pierce, 1987)], alcohol problems [Brief Michigan Alcohol Screening Test (BMAST; Pokorny, Miller, & Kaplan, 1972)], and personality [NEO Five Factor Inventory (NEO-FFI; Costa, & McCrae, 1989)].

The majority of former NHL players did not experience significant adjustment problems following retirement from professional sport. A minority of former NHL players experienced significant problems with emotional adjustment to retirement (12.5%), functional adjustment to retirement (5.1%), depressive symptoms (12.6%), negative affect (6.4%), positive affect (2.6%), life satisfaction (1.3%) and subjective

well-being (1.3%). Characteristics of the transition, specific planning, and the personality trait, conscientiousness, were related to both emotional and functional adjustment to retirement from sport. Institutional support, perceived social support and athletic identity were related only to emotional adjustment to retirement. Alcohol problems were related only to functional adjustment to retirement. The personality trait of neuroticism was related to all of the general psychological adjustment measures and openness was related to life satisfaction and subjective well-being. Perceived social support was related to depressive symptoms, positive affect and life satisfaction. The need for intervention, particularly for players at risk for poor adjustment, is discussed.

DEDICATION

Dedicated to all the athletes who are generous with their time, insights and personal experience and choose to participate in research on adjustment to career termination. I am particularly indebted to the current and former National Hockey League players who participated in this study. Simply put, without their generous and thoughtful participation, this study would not exist.

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Introduction

Transition and change characterize our lives. Transition can be enriching or disabling, gradual or abrupt, planned or unexpected. It can produce joy, grief, anticipation, dread, and ambivalence; each transition has the potential to be a crisis, a relief or a combination of both (Schlossberg, 1981).

Retirement is a life transition that may occur at any point in the life of an individual and involves the transition from an activity in which there has been a commitment of time, energy and role identification (Baillie & Danish, 1992). Retirement from any profession can be a major transition for the individual with resulting negative and positive adjustments. The end of any career raises issues of changes in routine, identity, and role reevaluation. The focus of this paper is the retirement experience of a specific group of workers, professional ice hockey players.

The retirement of the professional athlete is a point of transition both similar to and dissimilar from the retirement experience of non-athletes. There are unique aspects of a professional (or elite amateur) athletic career that are relevant in understanding the risk factors, adjustment processes and interventions related to a smooth transition following career termination. There are some characteristics of the professional athlete's career that are atypical of most employment situations. These include the dedication to acquiring the job skills from a young age, the work schedule and structure, the demand for high levels of competitiveness, young age of retirement, the physicality of the job and the public and "elite" nature of the work.

Most elite athletes have participated in their sport since an early age; what began as play or recreational activity is now a career. High investment of time, energy, and focus

has been dedicated to athletics to reach an elite or professional level. Consider the not atypical career path of a professional hockey player from childhood. There is a commitment of a large number of hours to practice, travel, training and game time. For example, a minor league hockey player may spend between 5 (house leagues) to 40 (elite level) hours per week on hockey related activities. These hours increase to between 25 to 50 hours per week at the major junior levels and 25 to 40 hours per week at the college or university level. This time commitment occurs before reaching a level of professional play. In comparison, few other professionals, except performing arts, have spent this amount of time from an early age participating in an activity that is now an adult occupation. The termination of a professional athletic career marks the end of participation in an activity that has been central to the individual's life for many years and has likely utilized the individual's most significant skill.

The work schedule and structure of the professional hockey player is atypical, characterized by few "days off" during the hockey season. However, there is generally more "free time" on a typical workday than most workers enjoy, and two to four months of non-competition in the summer. This allows for significant "freedom" in the off-season. Although seniority has definite advantages, these are different from the regular work world. There is little or no job security and no tenure in the NHL; employment is on a contractual basis.

The defining characteristics of an NHL player's job are athletic ability, physical conditioning and competitiveness. A high level of physical performance and competition is demanded in the workplace of the professional athlete with high internal and external pressure to produce tangible results. These demands mean that minor consequences of

aging can assume critical importance for job performance. The career path peaks at a young age with most players facing retirement involuntarily and often unexpectedly by their mid thirties.

The professional hockey player's work occurs in the public eye and job performance is frequently under public scrutiny. There is membership in an elite social group, with attendant celebrity status and lucrative salaries. For example, the average NHL salary in the 1999-2000 season was about \$1.36 million US ("NHL Players", 2000). The end of the athlete's professional career affects the physical, psychological, family, social and financial aspects of an individual's life.

At retirement, there is an end to identification with the role of professional athlete and to a life structured around training and competition. Career termination marks the beginning of a life focused on new interests, education or career. The adjustment to career termination may be difficult for professional athletes due to great ego involvement and personal investment and because this transition generally occurs outside the normal developmental process. The second career may require very different skills from those acquired and perfected as an athlete and it is unlikely the individual will reach the same level of achievement as they did in hockey. This transition, at a relatively young age, can engender identity crises and coping difficulties (Botterill, 1982; Ogilvie & Howe, 1986; Orlick & Werthner, 1987; Sinclair, 1990).

The term "retirement" is not a fully accurate descriptor of the process of transition from sports. In sport, retirement is often a hybrid between career termination and traditional retirement; it can occur unexpectedly and involuntarily at a relatively young age with the individual pursuing a second career. Ball (1976) suggests that the transition

from sport is similar to "forced" withdrawal from the labour force; both are age-related and involve loss of status, downward mobility, identity crisis and loss of sense of purpose. Bond (1976) defines retirement as any stepping down from an occupation, even if an individual moves to another type of work. This definition makes retirement synonymous with career change. The retired athlete may or may not move on to another career but will make a transition from focused professional athletic involvement in sport to other activities and relationships. This transition is referred to as sport retirement, career termination or career transition selectively throughout the following review.

The research on the career termination of athletes is limited. There are a number of reasons for minimal research interest including aspects of our general culture, aspects of the sport research culture and theoretical and research design limitations.

In our general culture, the ideas of "athlete" and "retirement" are antithetical. The stereotypic image of the professional athlete is one of youth, focused competitiveness, success, high salaries, high motivation, and athletic skill. The stereotypic image of retirement is one of aging, completion of career goals, relief to end work, an end of paid employment, and appropriate timing of this transition. The public and social science researcher alike share these attitudes.

The sport research culture has traditionally focused on performance enhancement, rather than issues of psychological problems, counseling and therapy (Klavora & Daniel, 1979; Staub, 1978; Suinn, 1980). Thus, the clinical and research focus is on issues relevant to active athletes; at career termination the athlete becomes an "ex-athlete" and moves outside the primary area of defined interest.

There are a number of theoretical and research design limitations that have influenced the scope and progress of research in athletic retirement. Rosenberg (1981) suggests that traditional retirement theory, with its emphasis on gerontology and thanatology, has failed to adequately address the issues most relevant to the adjustment of athletes to career termination. An important limitation is that much of the information is anecdotal, journalistic, limited in scope and dramatizes cases of poor adjustment following career termination (Jordan, 1975; Kahn, 1972; Plimpton, 1977).

The scholarly, but speculative writings (Broom, 1982; Hill & Lowe, 1974; McPherson, 1980; Ogilvie & Howe, 1986) provide rich detail based upon professional experience and insight but fail to provide empirical support for the adjustment of a larger group of athletes. However, many psychologists providing services to elite athletes are consistent in the concern that there may be a hidden, but significant, number of athletes reacting negatively to career termination (Ogilvie, 1987; Heyman, 1986; Pearson & Petitpas, 1990).

The questions remain: what proportion of elite and professional athletes experience adjustment difficulties upon career termination? and what enables some athletes to negotiate the change more successfully than others do? (Blinde & Greendorfer, 1985; Coakley, 1983; McPherson, 1984; Ogilvie & Taylor, 1993; Rosenberg, 1980). The present study focuses on professional hockey players with the goal of determining what proportion of retired NHL players experience adjustment problems upon career termination, to identify variables that are related to adjustment to career transition and to estimate the proportion of active professional hockey players that may be at risk for poor adjustment.

Literature review

Purpose

The purpose of this literature review is to delimit, describe, summarize and evaluate the empirical research on the transition experiences of elite and professional athletes following career termination. The extant literature has not produced widespread evidence of termination trauma at all levels of sport participation. Notably, those ending scholastic and collegiate careers have shown little evidence of identity crisis or serious adjustment problems. The responses to athletic career termination in these populations range from mild, transitory adjustment problems to positive feelings of relief (Curtis & Ennis, 1988; Greendorfer & Blinde, 1985; Hallden, 1965; Kleiber & Greendorfer, 1983; Sands, 1978; Snyder & Baber, 1979). This transition occurs at the same time as other transitions normally associated with young adulthood (Coakley, 1983). The other adjustments of late adolescence and early adulthood, such as graduation, seeking a new job, marriage, parenthood, and moving to new location, may obscure the effects of athletic retirement.

The literature on professional and elite level amateur athletes indicates that they experience problems in adjustment to career termination (Botterill, 1982; Broom, 1982; Haerle, 1975; Hill & Lowe, 1974; Lerch, 1982; McPherson, 1980; Mihovilovic, 1968; Ogilvie & Howe, 1982; Svoboda & Vanek, 1982; Werthner & Orlick, 1982). This literature review describes, summarizes and evaluates the research on the career termination of professional and elite level amateur athletes. A statement of the current research problem, research questions and design, and hypotheses follows the literature review.

Research on the transition to retirement of the professional or elite athlete

The empirical research assessing the incidence of psychological or social trauma caused by forced termination from sports is limited. This review will consider Eastern European empirical research, early sociological research in North America, and more recent sport psychology research.

The sport psychologists in Eastern Europe were the first to acknowledge the adjustment difficulties their athletes faced. This is due to long-term relationships with the athletes (Ogilvie & Howe, 1982) and the focus on educational and vocational counseling as an integral part of the athletes' development (Chartland & Lent, 1987).

Mihovilovic (1968) studied 44 former amateur male soccer players in the Yugoslavian and Croatian soccer federations. He considered reasons for retirement and measured adjustment to the transition by current levels of cigarette smoking, alcohol consumption and exercise. Mihovilovic (1968) found that 95% of the players had retirement imposed upon them through injury, age, family reasons, club politics or elimination by younger players; retirement was sudden and unanticipated by 52% of the players. The suddenness of retirement was related to injury, age or family factors. Mihovilovic (1968) concluded that players try to stay on the team as long as possible; if they do not pursue a new profession then retirement is painful, frustrating and results in increased smoking, drinking, and neglect of exercise. The former athlete feels abandoned and neglected, as evidenced by a diminished circle of friends and neglect by former club members.

Svoboda & Vanek (1982) investigated adjustment to career transition in a comprehensive retrospective study of 163 former male Czechoslovakian national team

members in 20 sports. They suggested that adjustment to retirement is influenced by preparation for the new situation, personality development and other factors and defined poor adjustment to retirement as greater reported negative affect and negative thoughts about the future.

Svoboda and Vanek (1982) reported that many athletes did not prepare for sport career termination: 41% had paid no attention to preparation for a career post-sport and 31% considered a future profession only immediately before their sport career ended. The personality traits of low extraversion and high neuroticism were related to poor adjustment in 10% of athletes. The authors concluded that 83% of the ex-athletes had a variety of psychological, social and vocational conflicts before, during or after retirement. One of the most significant stressors was the contradictory demand to prolong elite performance and to prepare for a life long profession; stress was greatest for those who anticipated they could not adequately respond to both demands. Other sources of stress were competition from younger team members, declines in physical power, the demands of training and the intrusive nature of injuries with increased periods of physical rehabilitation. In rating their adjustment to retirement, 38% of former athletes reported immediate adjustment, 15% took less than 6 months, 25% took 1 to 3 years, 3% over 3 years and 18% said they still were not coping. The athletes reported a shift in value orientations following career termination. As athletes, "to be first, travel, friends and family" were ranked in order of importance. After career termination, the ranking shifted to "family, friends, to be first and a quiet job." The need for achievement remained high but needs for family and friends had taken precedence. Svoboda and Vanek (1982)

concluded that successful coping includes a complete role change and that the best way to cope is through social and psychological preparation.

In North America, Haerle (1975) analyzed career patterns of 312 former professional baseball players, including adjustment to retirement. The occupational history after a baseball career was the major outcome measure of adjustment in this study: 90% of the respondents had little or no trouble obtaining their first post-baseball job and 75% had employment within a three-month period. Haerle (1975) found that baseball fame was a significant factor in the first post-playing job, but was of less importance than educational attainment in predicting eventual job status. He reported that 75% of former professional baseball players did not begin to prepare for retirement until they were in the last quarter of their active baseball careers. His respondents reported mixed reactions to retirement including regret, sadness and shock (50%), but also a sense of acceptance of the inevitable and strong self-confidence in future (25%). The most difficult part of retirement was the inability to replace aspects of the professional baseball life (33%).

Haerle (1975) suggested that most former athletes made the necessary social and psychological adjustments, despite reported socio-psychological problems following retirement. He concluded that due to salaries, pensions, education, investments and off-season careers, the economic and occupational adjustment might not be as severe as in the past. However, the loss of status and prestige may still be traumatic to those whose self-concepts and identities are built around the role of athlete.

Lerch (1981) mailed questionnaires to about 30% of former professional baseball players not active in the major leagues since 1970. His sample was divided into three groups: permanently retired; working and retired from baseball for over 20 years; and

working and retired from baseball for less than 20 years. He hypothesized that the better-adjusted respondents would have more education, positive pre-retirement attitudes, good health, shorter professional baseball careers and have been top performers. A life satisfaction scale measured adjustment. The variables related to current life satisfaction in the permanently retired group were present income, health and pre retirement attitude. The variables related to current life satisfaction in the working-and-retired-for-over-20-years group were present income, pre-retirement attitude and education. The variables related to life satisfaction for the working-and retired-for-less-than-20-years group were present income and level of education.

Lerch (1981) found no support for sport variables as predictive of adjustment: commitment to baseball, high performance levels and a short baseball career did not predict adjustment as measured by life satisfaction. Present income, pre-retirement attitude, health and education were most strongly associated with current life satisfaction, supportive of traditional retiree research. Analysis of the separate groups revealed that income was important for all three groups although the importance diminished as time away from the sport increased; education was important, especially for those still working; health mattered most to the permanent retirees; and attitude towards retirement was more important for those who were not recent retirees. The predictor variables explained more of the variance in life satisfaction for recent retirees than for the other two groups, suggesting more relevance to the career change situation than to permanent retirement. The variables in the model explained less than 20% of the life satisfaction for all groups, suggesting that additional variables need to be considered.

Reynolds (1981) studied the impact of sports participation on later job status and satisfaction of retired football players. The predictors of adjustment to retirement were the resources the individual brings and the resources the environment provides for the role transfer in athletic career termination. The relative contributions of these predictors (e.g., father's occupation, education, career length, fame, voluntary versus non-voluntary retirement, off-season job status, and time spent in off season job) to current job status and satisfaction were evaluated. The major influences on job status were father's occupation, education and off-season-job; none of the sport variables affected job status or job satisfaction. As with Lerch's (1981) study, Reynold's (1981) model explained only a small proportion of the variance in adjustment as measured by job satisfaction (15%) and job status (16%).

In more recent research on athletic retirement, the focus has shifted to include psychological, as well as social and behavioural adjustment experiences. Koukouris (1991) evaluated the adjustment of 113 advanced and elite Greek amateur athletes to sport retirement through self-report of levels of smoking, drinking and weight gain following the end of an amateur sport career. He concluded that adjustment to sport career termination is not difficult for the majority of athletes.

Werthner and Orlick (1986) studied the retirement experiences of 28 of Canada's best male and female elite amateur athletes. The primary questions were "why do some athletes have a difficult time and others do not?" and "how prevalent is the stress of retirement?" They used the Elite Athlete Retirement Interview Schedule, an open-ended in-depth interview schedule designed to elicit qualitative information retrospectively. The results indicated that the majority of athletes faced some degree of difficulty in the

transition following the end of their sports career; 32% had a very difficult transition, 46% had a moderately difficult transition and 22 % had no real problems. The ratings of life satisfaction in general and feelings of self-confidence dropped during the transition period. The authors identified seven factors that played important roles in a smooth transition out of elite amateur sport. They were a new focus, a sense of accomplishment regarding sport goals, the relationship with the coach, injuries or health problems, politics and sport association problems, lack of adequate funding requiring the athlete to quit and support of family and friends.

Sinclair and Orlick (1993) studied the transition from sport of 119 male Canadian national team athletes. These individuals completed a 34-item Athlete Retirement Questionnaire that included reasons for retirement from sport, individual coping strategies, support networks and other variables that may have an impact on the transition. The most prevalent reasons for retirement from sport were "time to move on, achieved goals and problems with coaching staff." The time to adjust to career termination ranged from immediately (23%), through 6 to 12 months (32%), to more than 2 years (22%). The majority (60%) of the respondents felt they handled the transition well, although 15% felt they handled it poorly. Those reporting easier transitions had achieved sport related goals and had a focus after their sports career ended. The athletes with difficult transitions felt incompetent outside of sport, felt that keeping busy was not an effective coping strategy, reported missing the social aspect of the sport, and said that job and school pressures and finances were causing problems in transition. The most support during the transition out of sport was from a spouse or partner, then family

members and friends. The former athletes reported that sport institutions provided them with the least support.

Baillie (1992) studied 5 athlete populations (260 former athletes): members of Canadian Olympic teams; members of United States Olympic teams; student-athletes from the University of Southern California Trojan football teams; players from major league baseball; and players from the NHL. A questionnaire containing 81 multiple choice and open-ended questions was designed from previous research, which consisted of in-depth interviews with three former elite athletes. The items fit into a model with three predictor factors (mental preparation for retirement; specific plans for retirement; unfinished business in sport) and two outcome factors (emotional adjustment to retirement and functional adjustment to retirement). Baillie (1992) evaluated seven hypotheses describing the relationships between these variables; the primary hypothesis was that mental preparation and specific instrumental planning for retirement from sports participation could significantly reduce the negative effects of the adjustment process. Additional hypotheses were: preparation for retirement is most effective when begun before retirement; effective preparation must include attention to the psychological adjustment, beyond financial and occupational stability; retirement after an extended and fulfilling career will be less difficult than untimely retirement and voluntary retirement is less difficult.

Baillie (1992) reported that preparation for retirement, whether mental preparation or specific plans, did reduce the negative effects of retirement. This was fully supported in his sub-sample of 77 former NHL players. In the sub-sample of all professional athletes, early specific planning, but not mental preparation, resulted in better adjustment. For the

professional athletes, who have relatively higher rates of injury as the reason for retirement, there was a significant relationship between the reason for retirement and emotional adjustment. There was no relationship between the length of career and subsequent adjustment. Voluntary retirement, assessed by "unfinished business" in sport did not negatively influence adjustment. Only 13% of the athletes acknowledged any preparation for emotional adjustment to retirement and 50% indicated that their adjustment had been difficult. The professional athletes reported significantly lower scores on emotional and functional adjustment than elite amateur athletes.

Webb, Nasco, Riley and Headrick (1998) studied a mixed sample of 91 high school, college and professional athletes. They suggested that two aspects differentiate sport retirement from other retirement: the role of athletic identity and the unique circumstances of forced early retirement. The authors hypothesized that athletic identity would be negatively correlated with overall life satisfaction and positively correlated with psychological difficulties surrounding retirement from sport and that these correlations would be stronger for athletes who were forced to retire. The results indicated that athletic identity was related to retirement difficulties, but not to overall life satisfaction, and that those with injury-related retirements had the most difficulty with adjustment.

Summary of the research

The empirical and scholarly review literature is summarized in terms of empirical research and review article conclusions and the variables that emerge as potentially relevant to the present research on the adjustment to career termination in professional hockey players. The research on career termination in elite and professional athletes covers a wide range of time (1968 to 1998), cultures (Eastern European, North

American), athletic status (high school, amateur sport club, professional) and definitions of adjustment (occupational status to amount of exercise). A number of themes do emerge despite substantial heterogeneity in theoretical approach, research design and operational definitions of adjustment.

The empirical literature reviewed suggests the following themes or areas for further study. The first theme is that elite and professional athletes do have trouble following career termination (Baillie, 1992; Mihovilovic, 1968; Sinclair & Orlick, 1993; Svoboda & Vanek, 1982; Werthner & Orlick, 1986). Second, few athletes consider or prepare for their retirement from sport (Baillie, 1992; Haerle, 1975; Mihovilovic, 1968; Sinclair & Orlick, 1993; Svoboda & Vanek, 1982; Werthner & Orlick, 1986). Third, career termination is involuntary for the majority of athletes (Baillie, 1992; Mihovilovic, 1968; Reynolds, 1981; Sinclair & Orlick, 1993; Svoboda & Vanek, 1982; Werthner & Orlick, 1986). Fourth, sport variables such as length of career and fame as an athlete are not predictive of adjustment to career termination (Baillie, 1992; Haerle, 1975; Lerch, 1980; Reynolds, 1981). Fifth, adjustment to career termination takes time and athletes suggest the need for a more gradual and supportive transition (Baillie, 1992; Mihovilovic, 1968; Svoboda & Vanek, 1982; Werthner & Orlick, 1986). Sixth, in direct and indirect ways, the importance of athletic identity to the career transition is emphasized (Baillie, 1992; Mihovilovic, 1968; Sinclair & Orlick, 1993; Svoboda & Vanek, 1982; Werthner & Orlick, 1986).

The scholarly review articles suggest the following themes or areas for further study. Although these writings are lacking clear empirical support, suggestions resulting from theoretical considerations, immediate practical experiences with athletes and

anecdotal evidence have utility. Hill and Lowe (1974) concluded that the retired athlete faces an identity crisis and that retirement is a negative experience due to reduction in income, devalued status and the need for new skills and roles. The crisis is due to damage to self-identity and a lack of preparation for a new career. Ogilvie and Howe (1986) suggested that commitment to sport might result in a one-dimensional personality structure since the committed athlete usually lacks the opportunity to develop a multifaceted personality. The athletes who make an exclusive focus of emotion, time and energy to sport may suffer most from career termination particularly if self worth is based on only athletic ability. Orlick (1980) suggested that for most excellent athletes sport is the most important focus in their lives and that "those who emerge as most well-adjusted during their retirement years are those who were able to balance their lives during their competitive years" (p.273). Crook and Robertson (1991) concluded that most athletes do not prepare for retirement, that a significant number of athletes experience some kind of adjustment problem at career termination and a two-year adjustment period is required. Ogilvie and Taylor (1993) suggested that three primary resources appear to have the greatest influence on transition following career termination: social support, preparation for retirement and general ability to cope cognitively and emotionally with the transition.

Several factors emerge from the empirical and scholarly review literature as potentially relevant to the adjustment of professional athletes to career termination. These factors include reasons for the career termination, emotional preparation and practical planning for retirement, personality and general coping abilities, athletic identity, and social support systems.

First, the reasons for and timing of sport career termination are relevant to the process of adjustment. Athletes who have experienced a sudden, involuntary and unwelcome career termination report poorer adjustment than those who have chosen to retire (Baillie, 1992; Mihovilovic, 1968; Werthner & Orlick, 1986). In particular, athletes suffering a career-ending injury have lower scores on life satisfaction measures than retired athletes who had not had such an injury (Kleiber, Greendorfer, Blinde, & Samdahl, 1987; Webb, Nasco, Riley & Headrick, 1998).

Second, there is consistent support that emotional preparation and practical planning (anticipatory socialization) for retirement affects the athlete's retirement adjustment (Baillie, 1992; Botterill, 1982; Crook & Robertson, 1991; Gorbett, 1985; Orlick, 1980; Svoboda & Vanek, 1982; Werthner & Orlick, 1986). Anticipatory socialization can be psychological preparation, concrete financial planning, education or training in other potential career areas while still an active athlete.

Third, the personality and general coping abilities of the retiring athlete are important influences on adjustment (Botterill, 1982; Gorbett, 1985; Hill & Lowe, 1974; Werthner & Orlick, 1986). It has been suggested that the sport environment fosters dependency, rather than independence, in athletes in terms of decision-making (Botterill, 1982). This deficit becomes apparent and detrimental at career termination when the athlete needs to use self-management skills that may be underdeveloped. This has not been adequately addressed in the sport retirement empirical literature but general coping research supports the importance of coping abilities to successful life transitions.

Fourth, the athlete's dependence on sport for identity and self-esteem may be associated with a difficult adjustment to career termination. There has been strong

support in the theoretical and review literature for the development of a narrow athletic identity to the exclusion of other aspects of the personality (Botterill, 1982; Ogilvie & Howe, 1981). It is postulated that this dependence on sport for identity and self esteem makes the athlete vulnerable to any changes in athletic performance; the more closely the athlete is identified with sport, the more traumatic will be the transition at career termination (Broom, 1982; Harris & Eisen, 1978; Ogilvie & Howe, 1982). The review literature postulates a relationship between athletic identity and adjustment but this has not been adequately explored in the empirical literature.

Fifth, the literature suggests that social support facilitates the adjustment to career termination (Sinclair & Orlick, 1993; Svoboda & Vanek, 1982; Werthner & Orlick, 1986). The spouse or immediate family becomes the most important source of social support through the transition. The support from former sport institutions is consistently described as inadequate and athletes express a need for more support in this area (Baillie, 1992; Mihovilovic, 1968; Sinclair & Orlick, 1993; Svoboda & Vanek, 1982; Werthner & Orlick, 1986).

Evaluation of the research

The literature on career termination of athletes is incomplete. Fundamental questions about the transition from an elite or professional sports career remain largely unanswered including, "what proportion of professional athletes experience adjustment problems?", "what kinds of adjustment problems are prevalent?" and "what factors are associated with successful adjustment?" An analysis of strengths and weaknesses in the empirical literature on career termination in athletes provides guidelines for the present research design.

The general literature on the retirement experience of athletes relies disproportionately on analyses of anecdotal and literary accounts (Bouton, 1971; Kramer, 1969; Plimpton, 1973). These are usually dramatized case studies of poor adjustment in an individual athlete and support the popular belief that career termination is a traumatic event. Some media presentations are more balanced and touch on core issues including the continued denial of an inevitable and approaching transition, the need for pre-retirement planning versus sport management's requirement of focused productivity, and the desire to remain in professional sport for too long, even as this decreases post-playing possibilities (Jordan, 1975; Kahn, 1972; Kramer, 1969; Plimpton, 1977). These biased accounts are a good source of ideas, persuasive and motivational. However, an uncritical generalization of information from these sources is unwarranted. The academic review literature also relies on case study material based on clinical experience with retiring athletes. The ability to generalize these observations to larger populations of elite and professional athletes remains suspect.

There is an overwhelming use of retrospective designs in the literature. The significant practical constraints dictating this approach are understandable, but selection biases, recall difficulties, maturation and history effects cannot be discounted. These threats to the internal validity of the results increase with the use of mail-out questionnaires and attendant low return rates suggestive of response bias. The samples of participants are often small and heterogeneous. Factors that may influence the adjustment to career termination such as age, time since retirement, level of competition, career changers or permanent retirees and reason for retirement are not always delineated.

A major limitation is that psychosocial adjustment to retirement from sport is not clearly defined or measured. The operational definition of adjustment is influenced by academic allegiance and has been variably defined as occupation following career termination, satisfaction with life, increased smoking and drinking, decreased exercise, negative attitudes towards sport, time to adjust and self-reported ratings of adjustment.

The measurement of adjustment has been almost exclusively by researcher-generated "questionnaires." With few exceptions, (notably, Baillie, 1992), the researcher-developed items do not appear to have been evaluated using accepted test development procedures. The measurement of adjustment could benefit from the use of established, norm-referenced psychometric measures. Headey, Kelley and Wearing (1993) suggest that four dimensions are worth measuring to assess psychological well-being and psychological distress in the general population: life satisfaction, positive affect, anxiety and depression.

A final limitation of the empirical research is unsupported conclusions. For example, Mihovilovic's (1968) much-quoted study concludes that adjustment is poor following career termination. The conclusions, which may be tempered by personal experience and qualitative information not detected in the questionnaire, are not supported by the data that indicated that adjustment problems were not pervasive. These unsupported conclusions, small sample size, amateur status of the players and the controlled sports environment of eastern Europe limit the ability to generalize this specific study, yet it is constantly and uncritically referenced. In conclusion, the strengths and weaknesses of previous research provide guidelines for the present study.

Theoretical considerations

A consideration of the theoretical bases of previous athletic retirement research and associated assumptions of previous research is central to an evaluation of the adequacy of the research in examining the issue of career termination in professional athletes. The theoretical models applied to research on athletes and career termination include social gerontology, thanatology and adult transition models.

Social Gerontological Theory

The underlying implicit assumption of social gerontological theory is that sport retirement is a termination requiring social and psychological adjustment to role withdrawal. This traditional retirement model looks at aging and retirement synonymously and relies upon theories that were developed and tested in older individuals. Hill and Lowe (1974) suggested that social gerontological theory addresses the process of aging that usually forces the athlete to leave a sport career. McPherson (1980) suggested that insight into occupational and psychological adjustment problems in athletes might be gained by using social gerontological theories, including disengagement, activity, subculture, continuity and social breakdown theories.

Disengagement theory proposes that society and aging individuals mutually withdraw from each other for the benefit and satisfaction of both (Cumming & Henry 1961). This theory of permanent, mutual withdrawal is not relevant to most athletes since the athlete and the sport organizations rarely mutually agree to disengage from each other. Indeed, anecdotal accounts indicate the tendency for athletes to hang onto the sport after skills have begun to decline (Jordan, 1975; Kahn, 1971; Kramer, 1969; Plimpton, 1973).

Activity theory maintains that the lost role is substituted with other activities and total activity levels remain the same (Friedman & Havighurst, 1954; Havighurst & Albrecht, 1953). This may be appropriate in explaining one aspect of athletic retirement: the role of decreased physical activity levels to adjustment to career termination. A smoother transition occurs when the level of activity does not change substantially.

Subculture theory suggests that subcultural norms for the elderly are different from the main culture and so it is possible to be less active and still well adjusted (Rose, 1965). Rosenberg (1980) suggested that this might explain the existence of mechanisms in professional sport that deny or obscure retirement. The theory does not have great relevance for research focused on factors that effect the adjustment to career termination in professional athletes.

Continuity theory suggests that substitution is not necessary for the lost career role as long as the individual has sufficiently varied roles in other areas. The time and energy given to the work role can be redistributed (Atchley, 1981). The theory suggests that the athlete will have poor adjustment if the role of athlete was a major role and if new roles are less meaningful. Continuity theory provides insight into the tendency for players to stay in the game despite declining abilities since staying in a diminished role is preferable to totally losing the athletic role.

Social breakdown theory proposes that role loss (retirement) results in susceptibility to external labeling (Kuypers & Bengtson, 1973). When a new status label is unfavourable, the individual withdraws and eliminates certain activities starting a negative spiral of withdrawal. This model has implications for career termination of professional athletes. The role of athlete may define the social self to such a degree that

any new role after career termination is perceived negatively. The focus on athletic achievement may have limited the athlete in other areas. The ex-athlete becomes aware of a disparity with age peers regarding education, career advancement, and work related skills.

The analogy between athletic career termination and traditional retirement may not be appropriate. The athlete is "old" only in the sense that "old" comes early in sport. The retired athlete still has a great deal of life ahead and needs to develop new interests and life focus. The use of the social gerontology models of retirement may be appropriate if the definition of retirement is widened to include transition from one career to another. Cox (1994, personal communication) suggests that the phenomenon of early career termination is becoming more prevalent in society and the situation faced by the "retiring" athlete has broad implications outside of sport. The social gerontological models were not tested stringently or adequately in the research. The models were not specifically related to research designs, particularly in terms of operational definitions. The utility of these models needs further testing; to date they have not been adequate to answer the questions surrounding adjustment to career termination in athletes.

Thanatology Theory

The career termination process of athletes has been studied in the conceptual framework of thanatology, the study of death and dying. Rosenberg (1984) suggested that if knowledge about psychological adjustment to death and dying can be adapted to athletic career termination, counseling strategies could be adapted as well. Kubler-Ross's (1969) stages of dying are based on her experience with the reactions of terminal patients as they come to accept death. Patients use a variety of coping mechanisms to deal with

death and these coping mechanisms appear to be inevitable although patients and their families will pass through these stages at different rates.

Career termination may be considered a form of social death; not the biological death of an individual but social isolation and ostracism from a group (Lerch, 1982; Rosenberg, 1984). A parallel can be drawn between Kubler-Ross's stages of coping with terminal illness and coping with social death. Oglivie & Howe (1986) suggest that the reaction to career termination follows a predictable course of several stages analogous to Kubler-Ross' stage theory of dying. At the core of termination stress reactions is the loss of something that seems to be vital to the athlete's existence. The reaction is analogous to a mourning or grief reaction with common characteristics. It is postulated that first, the athlete experiences shock and numbness. Second, the athlete experiences denial, including the behavioral manifestations of arguing with the coach, persistent attempts at re-training and competing at a lower level. Third, anger occurs and may be directed towards peers, management, coaches, family, God, fate or oneself through self-destructive behaviours such as substance abuse. Fourth, the symptoms of reactive depression including withdrawal, loneliness and helplessness are experienced.

The analogy between dying patients and athletes experiencing career termination appears based on fictional, anecdotal and clinical experience since empirical support is lacking. The model is not invalid but must be considered as a starting point for inquiry and not an answer. Most empirical studies of retirement have either not noted or not discussed this analogy. For example, in Lerch's (1981) study of 511 retired baseball players, the former athletes did not once mention death, social or otherwise. There is no

empirical research on career termination in athletes that has assessed the progression through these stages.

In conclusion, the comparison of physical and social death is on tenuous theoretical ground since the outcomes of the two are so different. In the final stage of Kubler-Ross's (1969) theory an acceptance of the inevitability of death occurs. For the athlete, social life continues, albeit in a different form. The universality of stages is a criticism of stage theories and one that needs to be addressed empirically in the sports retirement literature before the concept of social death can be considered an appropriate model.

Adult Transition Theory

Transition characterizes human life and is precipitated by change in physical, social or psychological domains. A single transition may involve change in all domains and all transitions result in some degree of stress and loss that varies according to the nature of the event and the demands placed on an individual (Brammer & Abrego, 1981).

Schlossberg (1981) states that a transition has occurred if "an event or non-event results in a change in assumptions about oneself and the world and thus requires a corresponding change in one's behaviour and relationships" (p. 5). There is an extensive body of theoretical and empirical literature tracing the characteristics, dynamics and impact of both normal life transitions (e.g., marriage) and less common transitions (e.g., incarceration). This research indicates that individuals differ greatly in the ability to adapt to change. Schlossberg (1981) has theorized that there are three factors that influence adaptation to a transition. These are the characteristics of the transition, the characteristics of the pre- and post-transition period, and the characteristics of the individual. These interact to cause successful or unsuccessful adaptation to change.

Schlossberg's (1981) model of adult transition views adaptation to a particular transition as a dynamic process that can be assessed by considering these three sets of factors.

The characteristics of a particular transition include role change (gain or loss), affect (positive, negative or mixed), source (internal or external; voluntary or involuntary), timing (on-time or off-time), onset (gradual or sudden), expectation (anticipated or unanticipated), novelty (new or previously experienced) and duration (permanent, temporary or uncertain). The characteristics of the pre and post-transition environment include internal support systems (intimate relationships, family unit, network of friends), institutional supports (former employer, professional association) and physical setting. The characteristics of the individual include age, sex, health, race or ethnicity, socioeconomic status, psychosocial competence, personality and previous experience with a similar transition.

An evaluation of the social gerontology, thanatology and adult transition models of retirement indicates possible theoretical frameworks for the study of career termination in professional athletes. The gerontological model stresses the importance of establishing new roles. Its strengths are hypotheses about athlete avoidance of preparation for retirement and negative reactions to retirement. The social-death model focuses on the tremendous sense of loss that follows career termination and trepidation about the future. Both social gerontological and social death theories are oriented towards disengagement from sport.

Schlossberg's Adult Transition Model and Retirement from Professional Sport

It has been suggested (Crook & Robertson, 1991) that a transition model may be the most adequate model to analyze and explain athletic responses to career termination.

Schlossberg's (1981) transition model provides a flexible, multidimensional template within which factors identified as potentially important to adjustment to career termination in professional athletes can be arranged. The adult transition model is useful for looking at the process of transition from sport and the factors that affect the success of the transition. The strength of this dynamic model is the potential to both describe and explain the transition process and to suggest therapeutic interventions following career termination. As mentioned, there are three broad factors postulated to influence adaptation to a transition: the characteristics of the transition, the characteristics of the pre- and post-transition period, and the characteristics of the individual. Each of these is considered in light of previous studies and scholarly ideas about the retirement of elite and professional athletes.

The characteristics of the transition are relevant to an athlete's response and adjustment to career termination. The characteristics of the transition considered in this study are: affective response to retirement (positive, negative or mixed), source (voluntary or involuntary), onset (gradual or sudden), and expectation (anticipated or unanticipated). The reasons for career termination include injury, deselection due to declining skills, politics, and own choice. Some consider injury the "worst" reason for career termination (Baillie, 1992); others suggest declining skills (Sinclair & Orlick, 1993). The individual's perception of the "worst" reason for a career to end may be the most valuable assessment. The reason for career termination influences other transition characteristics. For example, a career-ending injury for a rookie may be experienced as involuntary, unanticipated, sudden, and negative. An on-time life event (such as death of a parent in late adulthood), however difficult, usually is less stressful than the same event

occurring at a developmentally atypical time (Pearson & Petitpas, 1990). Most professional athletes leave sport involuntarily and this may account for difficulty in adjusting to the transition (Andrews, 1981; McPherson, 1980; Reynolds, 1981).

The characteristics of the pre- and post-transition environment considered in this study are: internal support systems and institutional supports. Social support relationships can provide emotional, material and informational support that can ease the impact of transition. The most cited moderator as a buffer against unhealthy consequences of stress is social support (Antonucci & Israel, 1986; Cassel, 1976; Sandler & Barrera, 1984). The typical social support systems are friendship groups, kinship networks, marital, inheritance and work systems (Hill & Lowe, 1974).

At career termination the athlete is cut off from the friendship and work systems that have provided much of his social network. The athlete may be part of a dense social system; dense social systems are associated with member homogeneity and have a large proportion of members who are in contact with each other. Supporter similarity can reduce the range of skills and information available to provide assistance (Mitchell, Billings & Moos, 1982) and the athletes may have few social support resources outside the sports setting.

Two types of support may facilitate the transition; emotional support from family and friends that acts as a buffer against the stressors of termination (Botterill, 1982; Coakley, 1983; Reynolds, 1981; Svoboda & Vanek, 1982; Werthner & Orlick, 1986) and institutional support before, during and after career termination (Gorbett, 1985; Schlossberg, 1981). The importance of support from the sport institutions cannot be under-estimated since this system has been central in the retired athlete's life. During the

transition following career termination individuals report feeling isolated, ignored, used or forgotten. Institutional support, through contact with former athletes, involvement in other capacities in the sport, retaining contact through newsletters, and retirement education programs, (Baillie, 1992; Botterill, 1982; Sinclair & Orlick, 1993) may be beneficial. The provision of organizational endorsement and support can include continued education, off-season job training, financial planning and services offered at the time of career termination. Schlossberg and Leibowitz (1981) studied a job counseling and training program instituted by NASA for those whose jobs had been eliminated. The program provided support and a place to express feelings of anger and resentment at being laid off as well as counseling, job-seeking and problem-solving skills. Individuals involved in the program reported a stable adjustment process.

The characteristics of the individual that may influence adjustment to career termination considered in this study are: self-identity, anticipatory socialization (planning and preparation for retirement) and personality. The construct of self-identity is central to an understanding of the reactions to career termination. Linville (1987) suggests that individual differences in vulnerability to critical life events are due, in part, to differences in cognitive representations of the self, specifically, differences in the complexity of self-representations. Greater complexity of self-representations occurs when there are a number of different self-aspects, distinct from each other (Linville, 1987). For example, a man's concept of self may include the distinct and well-defined "selves" of father, tennis player, community volunteer and successful author. Greater self-complexity serves to moderate the adverse physical and mental health effects of stressful life events. When self-aspects are few and undifferentiated, a stressful event in one area tends to spill

over and colour thoughts and feelings in other areas. With greater self-complexity the impact of a negative event is likely to be confined to a smaller part of the self-representation and the individual is able to maintain positive thoughts and feelings about themselves.

The development of complex self-representations depends on personality, intelligence, and increased experience in varied roles, relationships, and situations. This increases the opportunity for self-differentiation, and the actual number of roles and relationships may be important in developing self-complexity (Linville, 1987). The typical athletic experience for those who reach the elite or professional level in sport is an increased narrowing of one's focus; it is necessary to make sport a primary, if not exclusive, focus of attention (Broom, 1982). Baillie and Danish (1992) suggest that this process is a major reason for the adjustment problems experienced at career termination.

The process of identifying with the role of athlete begins early in a society in which sport holds status and permeates many levels of consciousness (Reppucci, 1987). Early sport participation may help accomplish physical and psychological developmental tasks including development of autonomy, achievement and initiative. In adolescence, the primary developmental task is establishing identity and this requires active exploration of the various alternative possibilities of adult life (Erikson, 1959; Marcia 1966). The need for active questioning and exploration may not be compatible with an athletic system that promotes conformity and requires a continuing commitment of large amounts of physical and psychological energy. The athlete may not engage in exploratory behaviour that would expand personal and social identities because the athletic life is busy, regulated, rewarding and, often, privileged. The focus on athletics may inhibit development of

important life skills and the acquisition of varied life experiences that can be useful in subsequent career and personal planning (Blann, 1985; Sowa & Gressard, 1983).

The degree to which athletes derive an identity from the athletic role may determine the intensity of the adjustment problems at career termination (Botterill, 1982; Brewer, Van Raalte & Linder, 1993; Crook & Robertson, 1991; Ogilvie & Howe, 1986; Pearson & Petitpas, 1990). The athletic self-concept may be positive, but if narrow, it may produce psychological vulnerability to changes in athletic status (Ogilvie & Howe, 1982). There may be anger, bitterness or mourning around the loss of the athlete identity. A lack of anticipatory socialization for career termination may be related to high athletic identity. The athlete is so focused on a sport career that he may not consider the inevitability of a relatively short career and the need to develop interests and abilities other than athletic performance.

Anticipatory socialization includes any pre-retirement planning such as hobbies, education, work experience, volunteer experience, financial planning, or emotional preparation for life after hockey. These may ease the difficulties of career termination by teaching useful life skills, broadening social and self-identities and by enhancing perceptions of control. A wide repertoire of behavioural skills is needed to successfully adjust to career termination (King, Winett & Lovett, 1986). The literature indicates that the majority of athletes give little consideration to post athletic career concerns (Baillie, 1992; Haerle, 1975; Mihovilovic, 1968; Sinclair & Orlick, 1993; Svoboda & Vanek 1982; Werthner & Orlick, 1986) and that the failure to prepare or plan results in more negative adjustment. This failure to prepare adequately for retirement occurs among age-appropriate retirees (Hill & Lowe, 1974) so it is not surprising that it is common in a

group of young, career-focused and competitive individuals. Those experiencing easier transitions out of sport report other interests or activities outside sport (Sinclair & Orlick, 1993; Werthner & Orlick, 1986), other options for employment (Sinclair & Orlick, 1993) and specific planning for career termination (Baillie, 1992; Sinclair & Orlick, 1993). Anticipatory socialization can take many forms and differs in emphasis from person to person (Hill & Lowe, 1974).

Personality characteristics, particularly an individual's characteristic way of reacting and coping in stressful situations, effect an individual's responses to career termination. Individuals bring unique personalities, perceptions and tolerance of stress, coping strategies, and life experiences to their particular transition. Ogilvie and Taylor (1993) suggest that basic coping skills are important for a successful transition. It is important to effectively manage the anger, anxiety and sadness generated by the career termination (May, House & Kovacs, 1982). Alcohol or other substance abuse or dependence is a maladaptive way of reacting and coping to stressful situations. Mihovilovic (1968) and Koukouris (1991) considered alcohol use as indicative of poor adjustment to retirement from elite athletic participation.

Statement of Problem

The issue of adjustment to career termination in professional hockey has not been addressed adequately in the sport psychology literature or by the hockey community. The popular press, professionals providing services to professional athletes and empirical researchers have suggested that a significant number of athletes react negatively to this transition. However, theoretical and research design limitations have resulted in a failure

to define what proportion of professional athletes experience problems with transition and what factors contribute to an easier or more difficult transition.

Research Questions and Design

There were two central research questions in the present study, (a) what proportion of former NHL players experience adjustment problems following career termination? and (b) what variables are most related to adjustment to retirement in professional hockey players?

“Adjustment problems” were operationally defined by measures specific to sport retirement (emotional adjustment to sport retirement; functional adjustment to sport retirement) and by measures of general psychological adjustment (depressive symptomatology, positive affect, negative affect, life satisfaction and subjective well-being). “Predictive” variables were operationally defined by measures specific to sport retirement (mental preparation for sport retirement, planning for sport retirement, characteristics of the transition, athletic identity, institutional support) and by measures associated with adjustment to transition in general (satisfaction with social support, alcohol-related problems and personality traits).

A third, and more exploratory, question was (c) Are active NHL players similar to retired NHL players in terms of scores on measures of some of the predictive and criterion variables? A comparison of active and retired NHL players on measures of athletic identity, satisfaction with social support, alcohol-related problems, personality traits, positive and negative affect, depressive symptomatology, satisfaction with life and subjective well-being evaluated this exploratory question.

The theoretical framework for assessing the previous questions is Schlossberg's (1981) model of adult transition that postulates that characteristics of the transition, characteristics of the pre and post transition environment and characteristics of the individual affect an individual's adjustment to transition. Predictive variables with previous empirical, theoretical or clinical support were placed within this model and the relationship of these variables to adjustment was assessed.

Method

Participants

The participants in the study were 157 currently active NHL players and 81 retired NHL players. The active NHL players were selected using the following criteria: they were present during a meeting with the National Hockey Players Association (NHLPA) representatives and received questionnaire packages or were on the mailing lists of teams to which this procedure was not introduced due to practical constraints (team schedule, NHL lock-out). The retired NHL players were selected using the following criteria: they had appeared on the roster of an NHL team for at least one season, had retired from the player role between 1987 and 1995 and were listed on either the Canadian Oldtimers' Hockey Association or the NHLPA mailing lists. Of the 655 active players contacted, 157 questionnaire packages were returned in the mail for a response rate of 24%. Of the 278 retired players contacted, 81 questionnaire packages were returned in the mail for a response rate of 29%.

Procedure

A package containing a consent form and NHLPA letter of support (see Appendix A), the measures to be completed (see Appendix B) and a stamped return envelope was mailed to former NHL players. The active NHL players either received a package through the mail or were canvassed in person during a team meeting by their NHLPA representative. In both the retired and active player groups, responses were completely confidential. The primary researcher had no access to mailing lists; the NHLPA delivered or sent out all packages. The questionnaire packages had no identifying marks

and were to be returned anonymously by mail. The respondents included their names in a significant minority of cases despite instructions to promote anonymity.

Measures

The questionnaire packages to active and retired players were different. The packages to the active players contained: an Active Player Questionnaire (see Appendix B) assessing demographic variables and attitudes towards preparation for career termination, measures assessing “predictor” variables that could be completed by individuals who had not yet retired (athletic identity, satisfaction with social support, alcohol-related problems) and measures assessing criterion variables of general psychological adjustment (depressive symptomatology, positive affect, negative affect, life satisfaction and subjective well-being).

The packages to the retired players contained the Sport Retirement Questionnaire (see Appendix B) assessing extensive demographic information, all predictive variables (preparation for sport retirement, planning for sport retirement, characteristics of the transition, institutional support, athletic identity, satisfaction with social support, alcohol-related problems) and both sport-retirement specific and general psychological adjustment criterion variables (emotional adjustment to career termination, functional adjustment to career termination, depressive symptomatology, positive affect, negative affect, life satisfaction and subjective well-being). Essentially, the retired NHL players received additional measures specific to the transition following retirement from a professional athletic career.

Measures of Predictor Variables

The Sport Retirement Questionnaire is composed of 42 items to assess demographic, predictor and criterion variables. The predictor variables contained in the Sport Retirement Questionnaire are Preparation for Retirement, Planning for Retirement, Transition Characteristics, and Institutional Support. The Sport Retirement Questionnaire is based on Baillie's (1992) questionnaire and retains two, of his original three, predictor factors (Preparation for Retirement, Planning for Retirement). These two predictor factors were directly lifted from Baillie's (1992) study of adjustment to retirement in elite and professional athletes in an attempt to validate his predictor and criterion factors in another sample population. Baillie's (1992) third predictor factor (Unfinished Business) was not used due to lack of a significant correlation to Emotional Adjustment and Functional Adjustment in his sample of professional athletes and a failure for this concept to be supported in other research. The only change to Baillie's format was the ordering of the questions within the Sport Retirement Questionnaire. Transition Characteristics and Institutional Support are factors designed for this study to assess characteristics of the transition and players' perceptions of institutional support, factors considered important from a theoretical viewpoint (Schlossberg, 1981).

In summary, the four predictor variables contained in the Sport Retirement Questionnaire are:

1. Mental Preparation for Retirement.

These items are thoughts about the retirement process rather than specific plans regarding new employment, education or financial concerns after retirement.

The five items of this factor are items #8 (How prepared were you for your retirement?), #13 (At what point in your career did you first think about retirement?), #17 (Did anyone ever encourage you to think about how you would adjust to retirement?), #27a (If my retirement had come two years later than it did I would have been better prepared for it.), and #27c (Retirement from a career in sports is something you cannot really prepare for.)

The range of possible scores on this factor is from 5 to 25 with the highest score being attained by the retired player who had begun preparation early in his career, who retired at a time of his own choosing, who had been encouraged by friends and family members to consider preparation for retirement, who disagreed that a 2-year delay would have helped in preparation and who disagreed that retirement from sport is something for which an athlete cannot really prepare.

2. Planning for Retirement

This factor was designed to assess the level of specific planning that had occurred before the athlete's retirement from sport. These plans could include financial, career or educational plans or listening to the encouragement from others by beginning to make these plans.

The four items of this factor are #14 (At what point in your career did you begin to make specific plans (e.g., investment planning, continuing education) for your retirement?), #15 (Before retiring from competition, did you make specific plans for coping with possible financial adjustments (e.g., changes in income) of retirement?), #16 (Before retiring from competition, did you make specific plans for moving into a new

career?) and #18 (If anyone suggested that you prepare for retirement, then did you listen and begin preparations?).

The range of possible scores on this factor is from 4 to 20 with the highest score being attained by the retired player who had begun to make specific plans for retirement early in his hockey career, who, before retirement had made specific financial plans for coping with the financial impact of retirement, had made specific plans for moving into a new career and who had listened to others encouragement to make plans for retirement.

3. Transition Characteristics

This factor was designed to assess characteristics of the transition as detailed in Schlossberg's (1981) article. It is a theory-based factor assessing the voluntariness, difficulty, anticipated versus gradual and emotional response to retirement at the initial point of transition.

The four items of this factor are #7, 7a (In your opinion, what was the major reason for your retirement? and In your opinion, what reason for retirement is the most difficult to accept?), #8, (How prepared were you for your retirement?), #9(Did you want to retire from professional hockey when it happened?), and #10 (A Likert-like rating of the initial response to the end of the professional hockey career).

The range of possible scores on this factor is from 4 to 20 with the highest score being attained by the retired player who rated his own reason for retirement as least difficult, was prepared for retirement, wanted to retire and had a positive initial reaction.

4. Institutional Support

This factor was designed to assess the impact of institutional support, an aspect of the post-transition environment, which may influence the athlete's adjustment to retirement.

The three items of this factor are #30 (At the time of your retirement did your parent club or the NHLPA offer any information about retirement programs, seminars, workshops?), #34 (How much guidance or support for the transition following retirement do you feel you received from hockey institutions following your retirement from professional hockey?) and #35 (How satisfied were you with this level of support?).

The range of possible scores on this factor is from 3 to 15 with the highest score being attained by the retired player who was offered information, received a large amount of support and was very satisfied with the level of support.

The remaining predictive variables were assessed by established, norm-referenced psychometric measures.

5. The Athletic Identity Measurement Scale

The Athletic Identity Measurement Scale (AIMS; Brewer, Van Raalte, & Linder, 1993) is a 10-item scale that measures both strength and exclusivity of an individual's identification with the athlete role. Items are statements such as "Other people see me mainly as an athlete" that are rated on 7-point Likert-type scales with anchors of strongly agree and strongly disagree. The range of scores is from 10 to 70 with higher scores indicating a greater identification with the athlete role. Reliability values are reported as internal consistency values of .81 to .93 (coefficient alpha) and $r = .89$ over a 2-week period (test-re-test). Convergent validity (with self-reported involvement in sports and perceived importance of sport) and discriminant validity (with social desirability, self-

esteem, self-rated sports competence, and coach-rated sports skill) data (Brewer, Van Raalte & Linder, 1993) provide preliminary support for the claim that the AIMS assesses identification with the athlete role.

6. The Social Support Questionnaire

The Social Support Questionnaire (SSQ6; Sarason, Sarason, Shearin, & Pierce, 1987) is a 6-item short form of the 27-item Social Support Questionnaire (SSQ; Sarason, Levine, Basham, & Sarason, 1983). It consists of six items requiring a two-part response. For example, “Who can you count on to console you when you are very upset?” and “How satisfied” are you with that support. Respondents list the number of people they can count on for support in a given circumstances and how satisfied they are with that support. This two-part response produces two social support scores, number of supportive people (SSQN) and satisfaction with the support (SSQS). Only the satisfaction with support (SSQS) measure is used in analysis of the current data. The range of scores on this measure is from 6 to 36, with a high score indicating high levels of satisfaction with social support. The SSQ6 has high test-re-test and internal consistencies (from .90 to .93 for both subscales) and correlates highly with the 27-item SSQ.

7. Brief Michigan Alcohol Screening Test (BMAST)

The Brief Michigan Alcohol Screening Test (BMAST; Pokorny, Miller, & Kaplan, 1972) is a 10-item subset of the original 25-item Michigan Alcohol Screening Test (MAST; Selzer, 1971). The MAST is a self-report instrument that is widely used in the initial phase of assessment to identify individuals who may have an alcohol use disorder. The BMAST, when scored according to the MAST using applied weights of 2 and 5 and

using a cut-off score of 6 or more, is highly correlated to the MAST ($r = 0.95$ to 0.99 ; Pokorny et al, 1972). The BMAST is face valid and uses a “yes/no” format to inquire directly about drinking behaviours. Items include questions such as “Have you ever been arrested for drunk driving or driving after drinking?”

The MAST has well-established validity, reliability and internal consistency (Gibbs, 1983). High sensitivity and specificity of the MAST was demonstrated in Selzer’s (1971) original cross-validation and independent cross-validations have shown acceptable to excellent validity dependent on sample populations (Teitelbaum & Mullen, 2000). Cherpitel (1998) found that the BMAST demonstrated a sensitivity of 75% and a specificity of 90% in a white male population for alcohol dependence, but did not do as well in identifying harmful drinking or alcohol abuse.

For the purpose of this study, a cut-off score of 6 or greater was used to identify those with possible alcohol use problems.

8. The NEO-Five Factor Inventory

The NEO-Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992) is a 60-item version of the self-report form (Form S) of the NEO-PI-R, a measure of normal personality traits. The NEO-FFI consists of five 12-item scales that measure five domains of personality labeled Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A) and Conscientiousness (C).

Neuroticism (N) contrasts emotional stability or adjustment with maladjustment or neuroticism. Individuals with high Neuroticism (N) scores are susceptible to emotional distress (e.g., fear, sadness, anger, and guilt) and have difficulty controlling impulses and coping with stress. They do not necessarily have a diagnosable psychiatric disorder

(Costa & McCrae, 1992). Extraversion (E) describes individuals who are outgoing, assertive, talkative and active. A low score on this scale indicates introversion, best seen as a lack of extraversion and not the opposite of extraversion. For example, an introvert is reserved, but not unfriendly (Costa & McCrae, 1992). Openness to Experience (O) assesses an active imagination, preference for variety, intellectual curiosity, aesthetic sensitivity and independence of judgment. These individuals are willing to consider new ideas and experiences (Costa & McCrae, 1992). Agreeableness (A) is a measure of interpersonal tendencies that assesses altruism, sympathy for others and the belief that others are also altruistic. Conscientiousness (C) assesses purpose and determination; Costa and McCrae (1989) speculate that few become great athletes without a reasonably high level of this trait. These individuals are punctual and reliable and often exhibit high academic or occupational achievement.

Items are statements like "I am not a worrier" that are rated on a 5-point Likert-like scale with anchors of "strongly agree" and "strongly disagree". The range of possible domain (N, E, O, A, C) t-scores on the NEO-FFI is from 26 to 74. When the five domains of the NEO-FFI were correlated with corresponding domains on the longer NEO-PI correlations ranged from .77 for A to .92 for N. (Costa & McCrae, 1992). Internal consistencies for the NEO-FFI scales are smaller than that for corresponding NEO-PI domain scales but are acceptable; co-efficient alpha = .86, .77, .73, .68 and .81 for N, E, O, A, and C respectively (Costa & McCrae, 1992).

Measures of Adjustment Variables

The Sport Retirement Questionnaire is composed of 42 items assessing

demographic, predictor and criterion variables. The criterion variables contained in the Sport Retirement Questionnaire are Emotional Adjustment to Retirement and Functional Adjustment to Retirement. As with the two predictor variables, these two criterion factors were directly lifted from Baillie's (1992) study of adjustment to retirement in elite and professional athletes.

1. Emotional Adjustment to Retirement

This measure assesses the athlete's adjustment in terms of personal concerns, emotional difficulties, feelings of loss, continued identification with the role of athlete and new pleasures in life, rather than in terms of employment or other functional aspects of retirement.

The 10 items of this factor are: #11(My first response to retirement was:), #12 (About how long after retirement from competition did you first feel a sense of loss (for the end of your career)), #23a, b, c, d, e, #27b and #28 (Likert-like ratings of potential areas of difficulty including loss of security, losing chance to do what had always been done, end of a chance to compete and succeed, loss of important part of self, losing physical skills, loss of pleasure, thoughts of making a comeback), and #32 (How much do you still think about and evaluate your time as a professional hockey player?)

The range of possible scores on this factor is from 10 to 50 with the highest score being attained by the retired player who did not experience any feelings of loss upon retiring, whose first response to retirement was acceptance or enjoyment of the change, who reported little difficulty in adjusting to changes, who had no thoughts of making a comeback and who did not reflect on his sport career.

For the purposes of this study, a score of 20 or less is considered to reflect poor emotional adjustment. The lowest score would be attained by the retired player with anger or depression as a first response to retirement, who felt some sense of loss, frequently thinks about and evaluates his time as a hockey player. This individual would report difficulty in losing the security of a hockey career, being unable to compete, losing an important part of himself, losing physical skills, needing to change, and agreed that little has equaled the pleasure found in sport and had frequent thoughts about making a comeback.

2. Functional Adjustment to Retirement

The purpose of this factor was to assess the athlete's functional adjustment in terms of career development, establishment of a new focus, family issues and the ability to enjoy the lack of structure and personal flexibility offered by retirement.

The seven items are #24a, b, c, d, (Likert-like rating of enjoyment of no longer needing to practice, having the chance to pursue other interests, moving into a new career, and not needing to focus on training), #26 (How much effect did your retirement have on your family members or close friends?), #29 (After retirement, how long was it before you were able to find something to provide a new focus (e.g., something that gave you a purpose or a goal to achieve?)) and #33 (Rating your overall adjustment to retirement from hockey, at this time, how would you rate yourself?)

The range of possible scores on this factor is from 7 to 35 with the highest score being attained by the retired player who indicated enjoyment in no longer needing to practice, in having a chance to pursue other interests, in being able to move into another career and in not needing to be careful about training; who had found a new focus or goal

soon after retirement, who indicated that his retirement had little effect on family and friends and whose overall self-rating of adjustment was excellent.

For the purpose of this study, a score of 16 or less indicated poor functional adjustment to retirement. The lowest score would be attained by the retired player who reported it was "very unenjoyable" to not have training or practice obligations, but to have the time to pursue other interests or move into a new career, who reported tremendous effects on family or friends as a result of his retirement, who had not yet found new focus in life, and who rated his adjustment to retirement as poor.

The remaining criterion variables were assessed by established, norm-referenced psychometric measures.

3. The Center for Epidemiologic Studies - Depressed Mood Scale (CES-D)

The CES-D (Radloff, 1977) is a 20-item scale constructed to assess current frequency of depressive symptoms and is intended for use in survey research. Items are statements such as "I felt hopeful about the future" that are rated for the past week on a 4-point frequency scale ranging from "rarely or none of the time" to "most or all of the time". Scores range from 0 to 60 with higher scores indicating a higher frequency of depressive symptomatology. Reliability values are reported as: internal consistency values of .77 (split-half correlations), above .90 (coefficient alpha and Spearman-brown coefficients) and ranging from .32 for twelve months to .67 for four weeks (test-re-test reliabilities).

For the purpose of this study a cut-off score of 16 or higher identified individuals with possible depressive symptomatology.

4. The Positive and Negative Affect Schedule (PANAS)

The Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988) consists of two 10-item mood scales. Each mood descriptor is rated by frequency on a 5-point Likert scale from "very slightly or not at all" to "extremely". The positive affect descriptors include adjectives such as interested, proud and alert. The negative affect descriptors include adjectives such as distressed, irritable and ashamed. The range of possible scores on each mood scale is from 10 to 50. Watson and his colleagues (1988) found the reliability of both scales to be acceptably high in terms of both internal consistency ($\alpha = 0.87$ for positive affect and $\alpha = 0.87$ for negative affect) and for test-retest reliability ($r = .39$ to $.71$ dependent on time frame chosen). The time frame in this study was "during the past few weeks".

For the purpose of this study cut-off scores of less than or equal to 25 for PA and greater than or equal to 27 for NA identified individuals with low levels of positive affect and high levels of negative affect. These cut-offs are one standard deviation below and one standard deviation above the means of PA and NA in Watson and colleagues' (1988) validation study.

5. The Satisfaction with Life Scale (SWLS)

The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griggin, 1985) is a 5-item scale designed to assess life satisfaction, the cognitive component of subjective well-being (Pavot & Diener, 1993). The SWLS is a conscious cognitive evaluation of one's life in a global sense. Items are statements such as "in most ways my life is close to ideal" that are rated on a 7-point Likert-like scale with anchors of strongly agree and strongly disagree.

The range of possible scores on this measure is 5 to 35. Pavot and Diener (1993) suggest that scores between 5-9 indicate extreme dissatisfaction with life, 10-14 indicate dissatisfaction, and 15-19 indicate slight dissatisfaction with life. A score of 20 is considered neutral with equal satisfaction and dissatisfaction reported. Scores between 21-25 indicate slight satisfaction, between 26-30 indicate satisfaction and between 31-35 indicate extreme satisfaction

The SWLS has shown strong internal reliability (coefficient alpha = .87) and moderate temporal stability (2-month test-retest stability coefficient = .82) (Diener et al, 1985) Over longer periods, the test-retest stability decreases to a level (.54) that suggests that considerable change in life satisfaction can occur (Pavot & Diener, 1993). Over longer periods, life events were found to be predicative of life satisfaction (Pavot & Diener, 1993).

For the purpose of this study a SWLS score of 14 or less indicated low levels of life satisfaction.

6. The Life-as-a-Whole-Index (LAW)

The Life-as-a-Whole-Index (LAW: Andrews, & Withey, 1976) is a response scale designed to assess both affective and cognitive components of subjective well-being. Respondents answer, "How do you feel about your life-as-a-whole?" on a 9-point Likert-like scale anchored by "delighted" and "terrible". Headey (1981) modified the original 7-point scale by adding two new categories of very pleased and very unhappy to reduce bunching at the top end.

For the purpose of this study a score of 4 or less (global rating of mostly dissatisfied to terrible) indicated low levels of subjective well-being.

Hypotheses

There are nine hypotheses that serve as the focus of this study. They are:

1. that a minority of former professional hockey players will report adjustment problems specific to their retirement from professional sports.
2. that a minority of former professional hockey players will report poor general psychological adjustment.
3. that characteristics of the transition will be associated with sport-specific adjustment to career termination.
4. that institutional support (a characteristic of the pre- and post transition environment) will be associated with sport-specific adjustment to career termination.
5. that anticipatory socialization (a characteristic of the individual) will be strongly associated with sport-specific adjustment to career termination.
6. that athletic identity (a characteristic of the individual) will be associated with sport-specific adjustment to career termination.
7. that personality (a characteristic of the individual) will be associated with both sport-specific adjustment and general psychological adjustment to career termination.
8. that a history of alcohol-related problems (a characteristic of the individual) will be related to both sport-specific adjustment and general psychological adjustment to career termination.

9. that perceived social support (a characteristic of the individual) will be related to both sport-specific adjustment and general psychological adjustment to career termination.

Finally, although not a hypothesis, active and retired NHL players will be compared on all common completed measures to determine if there are significant differences between the two groups on measures of athletic identity, personality, alcohol-related problems, satisfaction with social support, positive affect, negative affect, life satisfaction and subjective well-being. These comparisons are exploratory and conducted in order to estimate if current players are similar to retired players on potential “risk” variables and also to determine if the retired and active players differ in overall psychological well-being.

Hypotheses Testing

Each of the measures administered is related to one or more of the above hypotheses, with each of the following suggested influences for the respective hypotheses:

1. a minority of retired players will score 20 or lower on Emotional Adjustment to Retirement and will score 16 or lower on Functional Adjustment to Retirement.
2. a minority of retired players will score 16 or higher on the CES-D (depressive symptoms), 25 or lower on the PANAS-PA scale (positive affect), 27 or higher on the PANAS-NA scale (negative affect), 14 or lower on the SWLS (life satisfaction) and 4 or lower on the LAW (subjective well-being).
3. the characteristics of the transition (as measured by Transition) are associated with specific sport-retirement adjustment (Emotional Adjustment to Retirement and Functional Adjustment to Retirement).

4. institutional support (as measured by Institutional Support) is associated with specific sport-retirement adjustment (Emotional Adjustment to Retirement and Functional Adjustment to Retirement).
5. anticipatory socialization (as measured by Mental Preparation for Retirement and Planning for Retirement) is strongly associated with specific sport-retirement adjustment (Emotional Adjustment to Retirement and Functional Adjustment to Retirement) variables.
6. athletic identity (as measured by the AIMS) is associated with specific sport-retirement adjustment (Emotional Adjustment to Retirement and Functional Adjustment to Retirement).
7. personality (as measured by the NEO-FFI) is associated with both specific sport-retirement adjustment (Emotional Adjustment to Retirement and Functional Adjustment to Retirement) and general psychological adjustment (CES-D, PANAS, SWLS, and LAW).
8. alcohol-related problems (as measured by the BMAST), is associated with both specific sport-retirement adjustment (Emotional Adjustment to Retirement and Functional Adjustment to Retirement) and general psychological adjustment (CES-D, PANAS, SWLS, LAW).
9. perceived social support (as measured by the SSQS) is associated with both specific sport-retirement adjustment (Emotional Adjustment to Retirement and Functional Adjustment to Retirement) and general psychological adjustment (CES-D, PANAS, SWLS, LAW).

The active and retired NHL players will be compared on scores on “predictive” variables: the AIMS (athletic identity), the NEO-FFI (personality traits), the SSQS (satisfaction with social support), and the BMAST (alcohol-related problems). They will also be compared on scores on “criterion” variables: PANAS-PA (positive affect), PANAS-NA (negative affect), CES-D (depressive symptoms), SWLS (life satisfaction) and LAW (subjective well-being).

Results

The first hypothesis, that a minority of retired professional hockey players would experience significant sport-specific adjustment problems, was supported. The results of the study indicated that 12.5 % of the retired NHL players experienced considerable difficulty with emotional adjustment to retirement from professional hockey and 5.1 % experienced considerable difficulty with functional adjustment to retirement from professional hockey.

The second hypothesis, that a minority of retired professional hockey players would experience poor general psychological adjustment, was supported. The results of the study indicated that a minority of the retired NHL players reported depressive symptoms (12.6%), high levels of negative affect (6.4%), low levels of positive affect (2.6%) low life satisfaction (1.3%) and low subjective well-being (1.3%).

The third hypothesis, that characteristics of the transition would be associated with sport-specific adjustment, was supported. The results of step-wise regression indicated that characteristics of the transition were related to both emotional and functional adjustment to retirement.

The fourth hypothesis, that institutional support, a characteristic of the pre-transition environment, would be associated with sport-specific adjustment, was partially supported. The results of step-wise regression indicated that institutional support was related to emotional adjustment to retirement but not related to functional adjustment to retirement.

The fifth hypothesis, that mental preparation and specific planning for retirement, characteristics of the individual, would be associated with sport-specific adjustment, was

partially supported. Mental preparation was not related to either emotional or functional adjustment to retirement. Specific planning was related to both emotional and functional adjustment to retirement.

The sixth hypothesis, that athletic identity, a characteristic of the individual, would be associated with sport-specific adjustment, was partially supported. Athletic identity was related to emotional adjustment to retirement but not related to functional adjustment to retirement.

The seventh hypothesis, that personality, a characteristic of the individual, would be associated with both sport-specific and general psychological adjustment was supported. The personality trait of "Conscientiousness" was related to both sport-specific factors (emotional and functional adjustment to retirement). The personality trait of "Neuroticism" was related to all of the general psychological adjustment measures. The personality trait of "Openness" was related to life satisfaction and subjective well-being.

The eighth hypothesis, that a history of alcohol-related problems, a characteristic of the individual, would be related to both sport-specific and general psychological adjustment was partially supported. A history of alcohol-related problems was related only to functional adjustment to retirement.

The ninth hypothesis, that perceived social support, a characteristic of the individual, would be related to both sport-specific and general psychological adjustment was partially supported. Perceived social support was related to emotional adjustment to retirement, depressive symptoms, positive affect and life satisfaction.

A comparison of active and retired NHL players on athletic identity, personality traits, satisfaction with social support, alcohol-related problems, positive affect, negative

affect, depressive symptoms, life satisfaction and subjective well-being found significant differences between the two groups on athletic identity, life satisfaction and subjective well-being.

The data are presented in four sections. The first section summarizes descriptive and univariate statistics for the active players. The second section summarizes descriptive, univariate and bivariate statistics for the retired players. The third section provides the comparisons between active and retired players on available measures. The fourth section presents stepwise regression and logistic regression analyses on the sport-specific (emotional adjustment to retirement; functional adjustment to retirement) and general psychological (depressive symptoms, negative affect, positive affect, life satisfaction and subjective well-being) adjustment variables using characteristics of the transition, characteristics of the pre- and post-transition environment and characteristics of the person as predictor variables.

Descriptive and Univariate Statistics for the Active NHL Players

This section provides the descriptive and univariate statistics of the active NHL players. These are presented to provide a fuller description of the sample populations, to aid future research and to provide information that may be important in identifying and designing services for retiring NHL players.

The average age of the active players was 27.87 years ($SD = 3.68$). The nationalities of the active players were Canadian (68.6 %), American (15.7 %) and other nationalities (15.7 %). English was a first language for 77.8 % of the respondents. The active players had played an average of 8.39 ($SD = 3.78$) years of professional hockey with an average of 6.98 ($SD = 4.12$) of these years spent in the NHL. A range of 1 % to 59.6% spent the

majority of at least one season (range of 1 to 4.42 years) in other leagues (e.g., American Hockey League, European leagues, International Hockey League, other minor leagues, and the World Hockey Association) than the NHL.

In terms of formal education, less than 2% of players had less than a grade 8 education, 6.6% had completed some high school, 38.4% had graduated from high school, 44.4% had attended some university or college, 7.9% had obtained an undergraduate degree and .7% had education beyond the undergraduate level.

Employment outside of hockey since age 18 was reported by a minority of active players (31.4%). The majority of active players reported excellent (52%), very good (34.2%) or good (13.8%) health.

Responses to questions about attendance at seminars focused on retirement issues revealed that 11.9% of respondents had attended a retirement seminar. Of these respondents, 9.1% attended seminars offered by their NHL team, 36.4% attended seminars offered by the NHLPA and 54.5% attended seminars offered by other agencies. The majority of players (89.9%) indicated that they would attend a seminar focused on retirement issues. The majority (79.5%) felt that these seminars should be offered by the NHLPA. The preferred scheduling of retirement seminars during the active NHL career was roughly split (55% felt they should be offered during regular season; 45% felt they should be offered during the off-season). The majority (86.2%) of active players felt that retirement services should be offered to players following their retirement from professional hockey.

Descriptive, Univariate and Bivariate Statistics for the Retired NHL Players

The average age of the retired NHL players responding to the survey was 34.2 ($SD = 3.81$) years. The nationalities of the retired players were Canadian (79%), American (14.8%) and Swedish (2.5%); English was the first language of 88.6% of respondents. The retired players had played an average of 10.55 ($S.D. = 3.7$) years of professional hockey and 88% reported that for 8.41 years the majority of their season was spent in the NHL. A range of 7 % to 53% had spent the majority of at least one season (range of 1.33 to 3.02 years) in other leagues (e.g., American Hockey League, European leagues, International Hockey League, other minor leagues, and the World Hockey Association) than the NHL. The last year in the NHL ranged from 1980 to 1995, with the 1991 as the average.

In terms of formal education, none of the sample had completed less than a grade eight education, 2.5 % had attended some high school, 29.1 % had completed high school, 44.3% had attended some university or college and 22.8 % had completed an undergraduate degree. One individual reported education beyond the undergraduate level.

In terms of employment post-retirement from professional sport, 87.3 % reported working since retirement and 59.5% had attended school or employment training. The majority of retired players rated their current health as excellent (41.8%), very good (35.4%) or good (11.4%). Health was rated as average (8.9%) or poor (2.5 %) by a minority of retired players.

Before their retirement, 7.7 % of players attended seminars focused on adjustment to retirement issues; 97.3% felt that it was important that these seminars be offered before retirement. The majority (74.4%) felt that the NHLPA should be responsible for

arranging pre-retirement seminars with a minority reporting that the individual teams (19 %), individual players (16.7 %), or NHL (19 %) should be responsible for arranging pre-retirement seminars. The majority (63.5%) felt that seminars should be offered during the off-season.

The majority (92.2%) of respondents were not offered information about retirement programs, seminars or workshops at the time of their retirement. When these services had been offered, 66.7% of retired players attended. The majority (92.4%) of retired players responded that retirement services should be offered to players at the time of retirement from professional hockey.

Correlation coefficients between predictive and criterion variables appear in Table 1 (Pearson's r), and Table 2 (Kendall's τ_b). The sport-specific predictive variables are Preparation, Planning, Characteristics of the Transition, Institutional Support and Athletic Identity. The sport-specific criterion variables are Emotional Adjustment to Retirement and Functional Adjustment to Retirement. The general psychological predictive variables are Social Support, Personality (Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness) and Alcohol-Related Problems. The general psychological adjustment criterion variables are Positive Affect, Negative Affect, Depressive Symptoms, Life Satisfaction and Subjective Well-Being.

All of the sport-specific predictive variables were significantly correlated to Emotional Adjustment to Retirement. All of the sport-specific predictive variables but one (Athletic Identity) were significantly correlated to Functional Adjustment to Retirement. The predictor variables with the most number of significant correlations to all criterion variables were Characteristics of the Transition, Planning for Retirement,

Preparation for Retirement and the personality traits of Conscientiousness and Neuroticism.

Table 1
Correlation Coefficients (Pearson's r) for Predictive and Criterion Variables

| <u>Predictor</u> | <u>Criterion</u> | | | |
|------------------------|----------------------|-----------------------|-----------------|-------------------|
| | Emotional Adjustment | Functional Adjustment | Positive Affect | Life Satisfaction |
| Preparation | .34** | .39** | .41** | .15 |
| Planning | .53** | .66** | .46** | .38** |
| Transition | .55** | .50** | .40** | .36** |
| Institutional Support | .37** | .24* | .34 | .05 |
| Athletic Identity | -.35** | -.18 | -.25* | -.25* |
| Social Support | .25* | .02 | .23* | .29* |
| Neuroticism | -.33** | -.23* | -.41** | -.46** |
| Extraversion | .28* | .21 | .33** | .21 |
| Openness to Experience | -.01 | .11 | .01 | -.08 |
| Agreeableness | .11 | .09 | .07 | .10 |
| Conscientiousness | .38** | .36** | .36** | .22 |
| Alcohol Problems | -.114 | -.317 ** | -.191 | -.144 |

* p < .05, 2-tailed

** p < .01, 2-tailed

Table 2
Correlation Coefficients (Kendall's tau_b) for Predictive and Criterion Variables

| <u>Predictor</u> | <u>Criterion</u> | | |
|------------------------|---------------------|-----------------|-----------------------|
| | Depressive Symptoms | Negative Affect | Subjective Well-Being |
| Preparation | - .08 | - .20* | .01 |
| Planning | - .31** | - .21* | .09 |
| Transition | - .26** | - .29** | - .08 |
| Institutional Support | - .14 | - .13 | - .05 |
| Athletic Identity | .09 | .15 | - .19* |
| Social Support | - .08 | - .06 | .06 |
| Neuroticism | .32** | .52** | - .18 |
| Extraversion | - .14 | - .25* | .11 |
| Openness to Experience | - .11 | - .14 | - .16 |
| Agreeableness | - .23* | - .22* | .06 |
| Conscientiousness | - .07 | - .13 | .10 |
| Alcohol Problems | .21 | .12 | .06 |

* $p < .05$, 2-tailed

** $p < .01$, 2-tailed

Comparisons between Active and Retired NHL Players

The t -tests on common predictive (Athletic Identity, Social Support, Alcohol-Related Problems, Neuroticism, Extraversion, Openness to Experience, Agreeableness, Conscientiousness) variables and criterion (Depressive Symptoms, Positive Affect,

Negative Affect, Life Satisfaction and Subjective Well-Being) variables appear in Table

3. These evaluate whether there are differences between active and retired players on any common measures. This information was collected to assist in evaluating the adjustment of retired players following career termination and to indicate areas of risk and potential intervention for current players. Specifically, I wondered if the subjective experience of a decrease in life satisfaction might occur despite retired players being at population norms for these constructs. There were significant differences between the groups on Athletic Identity, Life Satisfaction and Subjective Well-Being, with the active players scoring significantly higher on these three measures than the retired players.

Table 3

t-tests on Measures Common to Active and Retired Players

| <u>Variable</u> | <u>Active Players</u> | | <u>Retired Players</u> | | <u>t</u> | <u>d.f.</u> | <u>p</u> |
|-----------------------|-----------------------|--------|------------------------|---------|----------|-------------|----------|
| | × | (ó) | X | (ó) | | | |
| Athletic Identity | 47.0 | (.876) | 43.6 | (1.05) | -2.67 | 228 | .008* |
| Social Support | 32.34 | (.544) | 32.76 | (.530) | 1.02 | 218 | .307 |
| Alcohol Problems | 1.6 | (.338) | 1.2 | (.275) | -.710 | 228 | .478 |
| Neuroticism | 46.75 | (8.69) | 45.09 | (11.33) | -1.21 | 221 | .227 |
| Extraversion | 57.39 | (7.95) | 58.96 | (9.25) | 1.32 | 223 | .187 |
| Openness | 44.25 | (9.22) | 44.43 | (8.98) | .134 | 223 | .893 |
| Agreeableness | 50.99 | (9.76) | 50.57 | (8.24) | -.315 | 223 | .753 |
| Conscientiousness | 52.85 | (8.82) | 54.07 | (9.77) | .938 | 222 | .349 |
| Depression | 9.2 | (.327) | 7.2 | (.383) | -1.89 | 230 | .060 |
| Positive Affect | 37.7 | (.601) | 37.2 | (.649) | -.691 | 229 | .491 |
| Negative Affect | 17.2 | (.530) | 15.8 | (.622) | -1.78 | 229 | .076 |
| Life Satisfaction | 29.15 | (.899) | 27.0 | (1.19) | -3.05 | 229 | .003* |
| Subjective Well-Being | 7.78 | (.891) | 7.39 | (1.13) | -2.71 | 228 | .004* |

* significant at $p < .05$

Step-wise and Logistic Regression Analyses

Step-wise and logistic regression was performed with sport specific and general psychological adjustment as the criterion variables and characteristics of the transition, of the pre- and post-transition environment and of the individual as predictor variables. Analysis was performed using SPSS FREQUENCIES for evaluation of assumptions. Results of evaluations of assumptions lead to transformation of the variables to reduce skewness, reduce the number of outliers, and improve the normality, linearity and homoscedasticity of residuals.

The SPSS NPAR evaluation of assumptions indicated that responses on measures of alcohol-related problems (BMAST), depressive symptoms (CES-D), negative affect (NA) and subjective well-being (LAW) were not normally distributed since few of the retired players reported significant problems in these areas. These variables were each transformed to two categories: alcohol-related problems/no alcohol-related problems, depressive symptoms/no depressive symptoms, predominant negative affect/no predominant negative affect, and good subjective well-being/poor subjective well-being.

Step-wise regression analyses were performed on emotional adjustment to retirement, functional adjustment to retirement, positive affect and life satisfaction as the dependent variables with transition characteristics, institutional support, social support, preparation, planning, athletic identity, alcohol-related problems, and personality (N, E, O, A, C) as independent variables. Analyses were performed using SPSS REGRESSION after deletion of cases with missing values; data from 70 retired hockey players were available for analyses. Tables 4, 5, 6, and 7 show unstandardized regression coefficients (*B*),

standard measurement of error ($SE\ B$), standardized regression coefficients (β), statistic (t), significance (p), and variance accounted for by the variables (R^2 and adj. R^2).

Table 4

Regression Analysis for Variables Predicting Emotional Adjustment to Retirement
($N=70$)

| Variables | B | $SE\ B$ | β | t | p |
|-----------------------|-------|---------|---------|-------|------|
| (Constant) | -.779 | 1.028 | | -.758 | .451 |
| Transition | .234 | .073 | .293 | 3.21 | .002 |
| Social Support | .417 | .146 | .239 | 2.86 | .006 |
| Planning | .163 | .066 | .244 | 2.48 | .016 |
| Athletic Identity | -.244 | .079 | -.244 | -2.83 | .006 |
| Conscientiousness | .018 | .008 | .192 | 2.30 | .025 |
| Institutional Support | .238 | .107 | .205 | 2.22 | .029 |

$R^2 = .621$; Adj. $R^2 = .585$

Table 5

Regression Analysis for Variables Predicting Functional Adjustment to Retirement
($N=70$)

| Variables | B | $SE\ B$ | β | t | p |
|-------------------|-------|---------|---------|--------|------|
| (Constant) | 1.614 | .346 | | 4.665 | .000 |
| Planning | .247 | .051 | .469 | 4.810 | .000 |
| Alcohol Problems | -.579 | .234 | -.211 | -2.477 | .016 |
| Conscientiousness | .014 | .006 | .189 | 2.163 | .034 |
| Transition | .124 | .061 | .197 | 2.041 | .045 |

$R^2 = .559$; Adj. $R^2 = .532$

Table 6

Regression Analysis for Variables Predicting Positive Affect ($N=69$)

| Variables | B | $SE\ B$ | β | t | p |
|----------------|-------|---------|---------|--------|------|
| (Constant) | 2.168 | .819 | | 2.648 | .010 |
| Planning | .202 | .050 | .409 | 4.013 | .000 |
| Neuroticism | .016 | .006 | -.280 | -2.737 | .008 |
| Social Support | .293 | .127 | .227 | 2.306 | .024 |

$R^2 = .369$; Adj. $R^2 = .341$

Table 7
Regression Analysis for Variables Predicting Life Satisfaction (N= 69)

| Variables | <i>B</i> | <i>SE B</i> | β | <i>t</i> | <i>p</i> |
|------------------------|----------|-------------|---------|----------|----------|
| (Constant) | 4.149 | 1.587 | | 2.614 | .011 |
| Neuroticism | -.042 | .011 | -.395 | -3.990 | .000 |
| Planning | .332 | .088 | .363 | 3.754 | .000 |
| Social Support | .683 | .223 | .285 | 3.069 | .003 |
| Openness to Experience | -.038 | .014 | -.266 | -2.768 | .007 |
| Constant | | | | | |

$R^2 = .447$; Adj. $R^2 = .413$

Step-wise logistic regression analyses were performed on depressive symptoms, negative affect and subjective well-being as outcomes and twelve predictors: transition characteristics, institutional support, social support, preparation, planning, athletic identity, alcohol-related problems, and personality (N, E, O, A, C). Analyses were performed using SPSS LOGISTIC REGRESSION. After deletion of 11 cases with missing values, data from 70 retired hockey players were available for analyses. Tables 8, 9 and 10 show regression coefficients, standard measurement of error, Wald statistic, degrees of freedom and significance.

Table 8
Logistic Regression Analysis for Variables Predicting Depressive Symptoms (N = 70)

| Variables | <i>B</i> | <i>SE B</i> | Wald | <i>d.f.</i> | <i>p</i> |
|-----------------------|----------|-------------|-------|-------------|----------|
| Planning | -2.857 | 1.350 | 4.477 | 1 | .034 |
| Institutional Support | 2.945 | 1.482 | 3.950 | 1 | .047 |
| Neuroticism | .340 | .153 | 4.942 | 1 | .026 |
| Constant | -17.706 | 7.805 | 5.147 | 1 | .023 |

-2 log likelihood (66) = 19.743, $p = 1.00$

Table 9**Logistic Regression Analysis for Variables Predicting Negative Affect ($N = 70$)**

| Variables | <i>B</i> | <i>SE</i> | Wald | <i>d.f.</i> | <i>p</i> |
|-------------|----------|-----------|--------|-------------|----------|
| Neuroticism | .211 | .053 | 16.077 | 1 | .000 |
| Constant | -11.602 | 2.747 | 17.834 | 1 | .000 |

-2 log likelihood (68) = 41.294, $p = 0.9956$

Table 10**Logistic Regression Analysis for Variables Predicting Subjective Well-Being ($N = 70$)**

| Variables | <i>B</i> | <i>SE</i> | Wald | <i>d.f.</i> | <i>p</i> |
|------------------------|----------|-----------|-------|-------------|----------|
| Neuroticism | -.172 | .075 | 5.326 | 1 | .021 |
| Openness to Experience | -.226 | .106 | 4.575 | 1 | .032 |
| Constant | 22.306 | 8.379 | 7.087 | 1 | .008 |

-2 log likelihood (67) = 19.162, $p = 1.00$

The most significant predictors of emotional adjustment to retirement were characteristics of the transition, social support satisfaction, planning for retirement, athletic identity, conscientiousness and institutional support. The most significant predictors of functional adjustment to retirement were planning for retirement, alcohol-related problems, conscientiousness and characteristics of the transition. The most significant predictors of positive affect were planning for retirement, neuroticism and social support satisfaction. The most significant predictors of life satisfaction were neuroticism, planning for retirement, social support and openness to experience.

The most significant predictors of depressive symptoms were neuroticism, planning for retirement, and institutional support. The most significant predictor of negative affect was neuroticism. The most significant predictors of subjective well-being were neuroticism and openness to experience.

Discussion

Interpretation, Integration and Limitations of Results

The results of this study show that most retired professional hockey players in this sample did not experience either sport-specific (e.g., poor emotional or functional adjustment) or general psychological problems (e.g., depressive symptoms, negative affect, low positive affect, low life satisfaction or low subjective well-being) after retirement from professional sport. These results cannot be generalized to other retired NHL players, or to professional or elite athletes in general, due to research design and implementation issues. These issues include retrospective design, low response rate, selection bias and small sample size. The interpretation of the results in the sample population is affected by small sample size, choice of statistical analyses and low base rates of some of the constructs measured.

This is consistent with previous conclusions that adjustment to sport retirement is not difficult for the majority of athletes (Haerle, 1975; Koukouris, 1991). It is also consistent with research in the general population that indicates that many life circumstances have only a moderate correlation with subjective well-being and that most people adapt quickly to most life events (Diener, 2000). The results may challenge conclusions from previous research or commentary that a significant number of elite and professional athletes experience adjustment difficulties following retirement (Crook & Robertson, 1991; Mihovilovic, 1968; Sinclair & Orlick, 1993; Svoboda & Vanek, 1982; Werthner & Orlick, 1986). Methodological differences including instrumentation, small sample sizes, different populations, response biases and quasi-experimental designs are likely

responsible for the divergence in opinion regarding the presence or absence of significant adjustment difficulties following retirement from elite or professional sport. A key issue is the difference in operational definitions of “adjustment difficulties.” Notably, there is no distinction between a normal response to a life transition and clinically significant psychological symptoms occurring after sport retirement.

The measures of adjustment used in this study are both sport specific and general psychological adjustment measures. The specific sport-retirement adjustment measures were Baillie’s (1992) Emotional Adjustment to Retirement and Functional Adjustment to Retirement. The results support the use of both of these measures, as they appear to tap different aspects of the retirement experience. They both relate to specific planning, characteristics of the transition and the personality trait, conscientiousness. Emotional adjustment also relates to social and institutional support and athletic identity. Functional adjustment also relates to alcohol-related problems. It is possible that the retired player with a history of alcohol problems will have more difficulty with the practical aspects of moving on to a new career or finding a new focus or goal. However, it is possible that alcohol problems would affect emotional adjustment to retirement. Given the low incidence of alcohol problems reported by the retired players (6.3%), any association should be interpreted cautiously.

The measures of general psychological adjustment used in this study include measures of both negative affect and subjective well-being. The adjustment measures assessing negative affect were the CES-D (depressive symptoms) and the PANAS. The CES-D is a screening tool designed for use in the general population and may have more false positives than the Beck Depression Inventory (Santor, Zuroff, Ramsay, Cervantes &

Palacios, 1995). The cut-off of 16, used in this study, may inflate the estimates of depressive symptomatology, 12.7% in this sample of retired NHL players. However, it is useful for identifying those experiencing significant psychological distress, even if they would not meet diagnostic criteria for major depression. The PANAS assesses both the lack of positive affect (e.g., sadness, lethargy) and negative affect (e.g., anxiety, anger). These relatively independent dimensions of mood are related to stress and coping (Watson, Clark, & Tellegen, 1988). They likely provide a good appraisal of how the retired players had been feeling in the weeks before filling out the questionnaires. They would be most useful if administered periodically over the time immediately after retirement to a number of months or years later. Watson and Clark (1984) suggest that negative affect (NA) represents an unusual combination of stability and change, with high NA individuals more likely to report distress, dissatisfaction and discomfort over time, regardless of the situation. High NA is correlated with negative life events and the personality trait of neuroticism (Cacioppo, Gardner, & Berntson, 1999).

The measures of adjustment that focused on positive aspects of an individual's life were the Satisfaction with Life Scale (SWLS), the Life-as-a-Whole Index (LAW) and the PANAS. The SWLS assesses life satisfaction, the cognitive component of subjective well-being, and the LAW assesses both cognitive and affective components of subjective well-being. The PANAS assesses both high positive affect (e.g., high energy, full concentration, pleasurable engagement) and low negative affect (e.g., calmness, serenity). Together, these three measures assess general happiness. An individual with high levels of subjective well-being is likely experiencing many pleasant and few unpleasant emotions, is engaged in interesting activities, has many pleasures and few pains and is

satisfied with life (Diener, 2000). The PANAS, SWLS and LAW could be influenced by the individual's mood at the time of questionnaire completion (Schwarz & Strack, 1999) and effects of social desirability (Diener, 2000). There is validity in the use of these single occasion self-reports but artifacts, as mentioned above, suggest the use of the experience-sampling method (random sampling in everyday lives), reports by informants or physiological methods.

The results indicate that, if there are sport-specific problems adjusting to retirement from professional hockey, more individuals experience problems with emotional, than with functional, adjustment. Emotional adjustment assesses the degree to which an individual experiences feelings of loss, anger or sadness, difficulty adjusting to change, feels a part of the self has been lost with retirement and remains focused on the sport career. Functional adjustment assesses career development, new life focus and enjoyment of changes since retirement.

The percentages of retired hockey players experiencing considerable difficulty with emotional adjustment to retirement (12.5%) and functional adjustment to retirement (5.1%) are consistent with Baillie's (1992) results using the same measures. His sample of 77 retired NHL players obtained average scores of 31.8 and 24.9 on emotional and functional adjustment. The retired NHL players in this study obtained average scores of 31.4 and 24.4 on emotional and functional adjustment. The relatively better functional adjustment may be due to measurement issues, relatively high NHL salaries resulting in fewer practical difficulties at retirement or generally good functioning despite transition issues. The relatively poorer emotional adjustment may be due to the lack of control of timing of retirement, high athletic identity, or a drive to "play one more year".

An interpretation of the results with regard to the relationship of individual factors (e.g., transition characteristics, pre- and post-transition environment, individual characteristics) to adjustment to retirement is discussed within the framework of Schlossberg's theory of adult transition. The results indicate that, as with any major transition, there are characteristics of the transition, of the environment and of the individual that influence how well an individual will cope and adjust to retirement from professional sports.

The characteristics of the transition relate to both emotional and functional adjustment to retirement from professional hockey. Hockey players, who were forced to retire, were unprepared, had a negative or very negative initial reaction to the news or who rated their own reason for retirement as the most difficult, experienced the most difficulty with both functional and emotional adjustment. The characteristics of the transition do not show a significant relationship to general psychological functioning as measured by depressive symptoms, low positive affect, high negative affect, life satisfaction or subjective well-being. The uncontrollable nature of career termination for many athletes may contribute to poor adjustment. Taylor (1983) suggests that the perception that one has control over life outcomes is critical in coping with short-term negative events. Werthner and Orlick (1986) found that almost a third of the athletes in their study reported a diminished sense of control following retirement.

The relationship of transition characteristics to sport-specific, but not general psychological adjustment, variables may be because the sport-specific adjustment measures focus on issues directly related to sports. It may also be due to the less "pathological" nature of the emotional and functional adjustment to retirement measures

when compared to general psychological adjustment measures, particularly depressive symptomatology and negative affect.

Institutional support, a characteristic of the pre- and post-transition environment, relates to emotional, but not functional, adjustment to retirement. Institutional support assesses the amount of guidance, support and satisfaction with that support that the players received from the NHLPA or team at the time they retired. Previous research suggests that many athletes feel a sense of abandonment and betrayal by their athletic institutions and that this has contributed to strong negative emotions about the retirement experience. This is commonly reported with amateur and Olympic athletes who report politics and struggles with governing agencies as high sources of conflict at the end of their athletic careers (Baillie, 1992; Sinclair & Orlick, 1983). Further study of this area could include the degree to which the athlete holds the institution responsible for their retirement, and if there is a true and pervasive lack of support or if individuals experiencing adjustment problems are more critical of how they have been treated by their governing sport bodies.

A number of characteristics of the individual (e.g., specific planning, athletic identity, personality traits, perceived social support, alcohol-related problems) relate to both sport-specific and general psychological adjustment measures.

Specific planning, but not mental preparation, relates to both functional and emotional adjustment to retirement. Specific planning involves steps towards financial, educational and career planning before retirement and mental preparation measures the athlete's attitude and receptivity to idea of retiring. This was a surprising result as both specific planning and mental preparation were expected to be related to emotional and

functional adjustment to retirement. There is a significant correlation between these two measures ($r = .549$; $p < .01$; 2-tailed). When specific planning was removed from the regression equations, mental preparation was related only to functional adjustment to retirement and positive affect. Other variables including extraversion (related to emotional adjustment) and the transition characteristics (related to depressive symptoms and life satisfaction) demonstrated significant relationships to adjustment variables when specific planning is removed from the regression equations. The reason for this outcome may be due to measurement issues.

A discussion with Baillie (2001, personal communication) explored the possibility of analyzing our two samples of retired professional NHL players to determine if one adjustment factor, combining the most relevant items from the specific planning and mental preparation factors may be more useful. It is also possible that action (specific planning) is more protective than thinking (mental preparation) against poor adjustment to retirement.

Athletic identity, the strength and exclusivity of identification with the athlete role, is related to emotional adjustment to retirement in the present study. Brewer, Van Raalte and Linder (1993) hypothesize that a person with a strong athletic identity is more likely to interpret a given event (such as career termination) in terms of the implications for their athletic functioning. The centrality of an athletic identity is postulated to be due to early formation, significant practical and psychological commitment to sport, and a public image and association. The advantages to a high athletic identity include development of self-identity, increasing athletic skills, social affiliations and confidence. For the professional athlete, high identification with the athlete role and resulting

improved performance may produce celebrity status and financial reward. The disadvantages of a high athletic identity become apparent at career termination although the development of a restricted identity may have occurred for many years.

Linville (1987) theorizes that a complex cognitive representation of the self is one moderating variable of the adverse effects of stressful events. She asserts that when people experience a negative event (e.g., career termination) the self-aspect most relevant to the immediate context (e.g. athletic identity) is activated and negative thoughts and feelings about the experience are associated with this “self”. The NHL player who is strongly and exclusively affiliated with the role of athlete may experience a larger crisis at retirement. Lakey and Edmundson (1993) suggest that a life event (such as career termination) can result in a negative role evaluation that, in turn, can result in an increase in distressed mood. They found that individuals with the most positive evaluations of their roles before a negative event were more vulnerable to negatively evaluating these roles after an adverse event. The theory that greater self-complexity results in increased protection against stressful events is attractive. However, the relationship is complex and the contribution of personality traits, especially neuroticism, must be considered.

In the present study, athletic identity (as measured by the AIMS) was significantly correlated with the personality trait of neuroticism (N) across both retired ($r = .244, p < .05$) and active ($r = .310, p < .01$) groups. The possible reasons for this association are open to speculation. An individual high in neuroticism experiences frequent psychological distress, is less able to control impulses and has trouble coping with stress. It is possible that this type of personality is more inclined to develop a strong and

exclusive athletic identity or that the measures of athletic identity and neuroticism are both influenced by an underlying construct.

Webb, Nasco, Riley and Headrick (1998) report a strong positive relationship between athletic identity and retirement difficulty, but not to overall life satisfaction. This is consistent with the results of the present study where high athletic identity was related to poor emotional adjustment to retirement but not to other adjustment measures. They postulate that athletic identity is strongly related to the dispositional variables of self-esteem and feelings of uncontrollability. Webb et al (1998) found no relationship between life satisfaction and retirement difficulty, concluding that an individual's reaction to retirement and overall life satisfaction are different. This is inconsistent with the results of the present study where measures of life satisfaction were significantly correlated ($r = .01$) with measures of retirement difficulty.

Despite mixed support for adjustment problems after retirement from sport, clinicians and scholars continue to stress that sport retirement is substantially different from retirement at an age-appropriate time. Athletic identity and early forced retirement are offered as explanations for the special difficulties faced by athletes. The present study raises the questions: Is it harder for those highly invested in the athletic role to adjust to a changed role or status due to low self-complexity? or Is high athletic identity overrated as a contributor to poor adjustment following retirement? or Is the relationship of high athletic identity to the dispositional trait of neuroticism a mediating factor?

The results indicate that the personality traits of neuroticism (N), conscientiousness (C) and, to some degree, openness (O) are related to the adjustment to career termination. The NEO-FFI was used to assess personality traits and is susceptible to the same

criticisms as the NEO-PI-R, upon which it is based. Block (1995) and others (Ben-Porath & Waller, 1992; Eysenck, 1992; McAdams, 1992; Waller & Ben-Porath, 1987) express methodological, empirical, semantic and theoretical concerns about the use of the 5-factor approach (FFA) of personality assessment. Block (1995) asserts that the FFA is not a model of personality and does not represent personality structure. He questions how well single word descriptors can represent the complexity of personality, the use of laypersons' judgments in the rating scale development and the lack of orthogonality of the five factors. Others (Costa & McCrae, 1995; Goldberg & Saucier, 1995) defend the FFA as a useful and parsimonious approach to personality assessment.

In the present study, the personality trait of conscientiousness (C) relates to sport-specific adjustment to retirement (emotional adjustment and functional adjustment). Individuals who are purposeful, strong-willed and determined achieve high scores on conscientiousness (C). It is not surprising that individuals low on this trait experienced more difficulty with the transition from professional hockey since they are less likely to have planned for their retirement. O'Brien and DeLongis (1996) found that individuals with high C scores used problem-focused coping including planful problem-solving and instrumental action.

The personality trait of neuroticism (N) relates to all of the general psychological adjustment measures. Since neuroticism (N) contrasts emotional stability or adjustment with maladjustment or neuroticism, this is an expected result. Many of the aspects of depressive symptomatology, low positive affect, high negative affect and low satisfaction with life and subjective well-being are encompassed by this trait. McCrae and Costa (1986) studied the influence of personality on coping and found that a high N score was

related to coping responses including hostile reactions, escapist fantasies, self-blame, indecisiveness and withdrawal. O'Brien and DeLongis (1996) found that individuals with a high N score are less likely to use problem-focused coping and more likely to use emotion-focused coping including self-blame, hostility and avoidance. It is apparent that these strategies could result in a more difficult retirement transition.

In the present study, the personality trait of openness (O) is related to subjective well-being and life satisfaction. A tentative interpretation of this result is that athletes who are more willing to consider new ideas and experiences will experience transitions, including transition from sport, as more fulfilling than do individuals low in this trait. The enjoyment of the transition may contribute to more positive cognitions and feelings about one's life or the general stresses of career termination.

Openness (O) measures active imagination, intellectual curiosity, preference for variety, aesthetic sensitivity and independence of judgment. Flexibility about life changes can be viewed as a behavioral expression of the trait of openness (Whitbourne, 1986). She found that age, social resources and openness were predictors of a willingness to consider change. Openness is not related to either neuroticism or extraversion (McCrae & Costa, 1983). This trait may affect responses to and coping with various life transitions, including career termination or retirement and likely facilitates personality growth. In a study of coping and personality, McCrae and Costa (1986) found that high openness (O) was related to coping responses including the use of humour, distraction and expression of feelings.

The trait of extraversion (E) did not relate to any adjustment measures in the present study. This is consistent with other research (O'Brien, & DeLongis, 1996) indicating no

independent effects for the personality trait of Extraversion (E) on coping responses. The present results were surprising as both neuroticism and extraversion were expected to be related to both sport-specific and general psychological adjustment. There is a significant correlation between these two measures ($r = -.529$; significant at the .01 level (2-tailed)). When neuroticism was removed from the regression equations, extraversion was not related to any adjustment measures. Other variables including athletic identity (to depressive symptoms, negative affect, positive affect and subjective well-being), characteristics of the transition (to depressive symptoms and negative affect), specific planning (to subjective well-being) mental preparation (to positive affect) and social support (to subjective well-being) demonstrated significant relationships to adjustment variables when specific planning was removed from the regression equations

There are a number of significant correlations between various measures in the present study. Neuroticism (N) and extraversion (E) have been linked to positive and negative affect through correlational studies (Nemanick & Munz, 1997) and this relationship was observed in the combined samples of active and retired NHL players. Extraversion (E) is correlated positively with positive affect ($p = .01$) and negatively with negative affect ($p = .01$) and neuroticism is correlated positively with negative affect ($p = .01$) and negatively with positive affect ($p = .01$). These constructs have been used interchangeably by some, but also described as different levels of explanation of personality, with extraversion and neuroticism considered broader personality traits and positive and negative affectivity acting at a secondary trait level (Nemanick & Munz, 1997). Watson and Walker (1996) demonstrated that while secondary traits have long-term stability, the basic traits are even more stable.

Costa and McCrae (1980) conclude that personality differences antedate and predict differences in life satisfaction. Diener (2000) states that temperament influences the baseline level of happiness and that personality predispositions are the strongest factors influencing long-term levels of subjective well-being. Headey and Wearing (1992) suggest that separate baselines for positive and negative affect are determined by the personality traits of extraversion and neuroticism.

McCrae et al. (2000) studied cross-cultural and developmental aspects of personality. They state that personality traits, like temperament, are biologically based psychological tendencies that follow a developmental path that is essentially independent of environmental influences. Historically, temperament has been considered a constitutional disposition and personality an acquired pattern of thoughts and behaviors. McCrae et al. (2000) clearly state that personality traits (N, E, O, A, C) are biologically based, or basic, tendencies that are not generally influenced by the environment. They discuss studies of heritability, limits of parental influence, cross-cultural similarities and temporal personality stability as support for this view. They do acknowledge exceptions to this rule, citing examples such as atrophy in the hippocampus due to extreme stress as cases where the environment (life events) has directly affected the brain and hence, personality. They also clearly acknowledge that environmental influences play a critical role by shaping the individuals' skills, values, attitudes and identities.

For example, an NHL player with a basic tendency towards high neuroticism will develop particular adaptations to this basic trait and these characteristic adaptations are influenced by environmental factors. There is a commonly held belief, within and outside the hockey world, that goalies are "different" temperamentally from other

players. This belief requires empirical support but one can postulate that NHL goalies are higher in neuroticism (N) than are other NHL players are. Among other characteristics, individuals with higher N scores are described as being easily angered and having irrational ideas. Thus, neurotic goalies may learn to express a facet of this trait (irrational ideas) in a manner that is appropriate in the sport culture (e.g., superstitions, ritualistic behaviours, intense emotionality in response to loss). Although traits follow a developmental path and are little influenced by the environment, characteristic adaptations do respond to the social environment.

In the present study, alcohol-related problems relate only to functional adjustment to retirement. This may be an artifact due to low numbers, but does offer opportunity for speculation. The retired hockey player who missed the structure of practice and training, reported that his retirement had affected family and friends negatively and did not report a new focus or interest in pursuits or careers outside of playing hockey had poor functional adjustment to their career termination. It is not clearly apparent why high scores on the BMAST, a screen for alcohol related problems, would be associated only with poor functional adjustment to retirement. One would expect some relationship to emotional adjustment to retirement and to the general psychological adjustment measures, particularly depressive symptomatology and negative affect. The results may be due to research design issues (e.g., measurement tools, sample size) and the low rate of retired hockey players (6.3%) reporting alcohol related problems.

The BMAST, like the CES-D, is a screening tool designed for use in the general population and may have a high number of false positives. The literature on alcohol use underreporting is inconsistent. There is some evidence that in general population studies

individuals underestimate the frequency and quantity of drinking behaviours (Lemmons, Tan & Knibbe, 1992). Others (Tucker, Vuchinich, Harris, Gavornik & Rudd, 1991) report that self-reported alcohol use is highly consistent with collateral report in some general population studies. Cherpitel (1995) reports that the BMAST does not perform as well in the general population as among clinic outpatients because it is weighted towards problems that have already been identified and addressed (e.g., attendance at Alcohol Anonymous). Carey and Teitelbaum (1996) suggest that the BMAST does not do a good job of identifying early or less severe problems with alcohol abuse, but is reliable and valid with a white, male population. These issues suggest that the rate of alcohol-related problems in the present sample may be overestimated due to the tendency for false positives, but there may be an underestimation of early or less severe problems.

There is a documented relationship between alcohol use disorders and personality traits (Barnes, 1983; Barry, 1974; Cox, 1985; Martin & Sher, 1994) suggesting that individuals with alcohol use disorders experience higher levels of negative affect such as anxiety, anger, disgust and sadness and experience more difficulty in coping with stress. They score lower on conscientiousness and agreeableness and higher on openness than those without alcohol use disorders (Martin & Sher, 1994). Taken together these traits may describe behavioural under-control and negative affectivity that may put individuals at risk for alcoholism and alcohol use disorders (Sher, 1991). Although personality dimensions may be related to the diagnosis of an alcohol use disorder, risk for alcoholism or alcohol sub typing dimensions, these relationships are not addressed in the present research. Since 10.6% of active players in this study report behaviours suggestive of alcohol use problems, this area may warrant further research.

Satisfaction with social support is related to emotional adjustment to retirement but does not relate to functional adjustment. Satisfaction with social support is moderately associated with positive affect and life satisfaction. This is consistent with general research on social support suggesting that social support is a constant, but moderate, predictor of positive adjustment in transitions (Winemiller, Mitchell, Sutliff, & Cline, 1993). In this study, support satisfaction, often considered an aspect of personality, was the measure of social support used.

In summary, variables that are related to both emotional and functional adjustment to retirement include characteristics of the transition, specific planning and conscientiousness. Social support, both personal and institutional, relates only to emotional adjustment to retirement. Athletic identity, a variable often postulated to have a great deal of influence on adjustment to sport retirement, is also related only to emotional adjustment. Alcohol-related problems are only related to functional adjustment.

The comparison of active and retired players on demographic, possible predictor and outcome variable measures indicates significant differences between the active and retired players on three measures. The first, athletic identity is the degree to which an individual identifies with the athletic role. Athletic identity can be narrowly defined as a cognitive structure or self-schema (Markus, 1977) that guides and organizes the processing of self-related information and can be broadly defined as a social role. It is logical to speculate that the athletic identity decrease following cessation of participation as a professional athlete.

There was a difference between active and retired players on measures of life satisfaction and subjective well-being. These measures are highly correlated; life satisfaction assesses the cognitive component of subjective well-being and subjective well-being assesses both cognitive and affective components. Although the active players are significantly higher on these measures, the retired players were above age-appropriate norms. This suggests that, after retirement, life satisfaction may decrease from very high levels reported by active players but the majority of retired hockey players remain at or above population norms for life satisfaction. There is some support that life satisfaction and subjective well-being do not decrease with age (Diener, 2000), a potentially confounding factor in these two groups (average age of retired player was 34.2 and average age of the active players was 27.9). There were no differences between active and retired players on measures of personality, perceived social support, alcohol related problems, depressive symptoms, positive affect and negative affect.

There are a number of limitations to this study and many are discussed in previous sections. These include limitations in analysis due to sample sizes, limitations with the questionnaire and test items, and limitations in the research design. Each of these influences confidence in the interpretation of results, generalizability of findings and conclusions.

The response rate for the mail-out questionnaire package was 24% for the active players and 29% for the retired players. This response rate is disappointing, but consistent with response rates in similar research (Baillie, 1992; Greendorfer & Blinde, 1985; Kleiber & Greendorfer, 1983; McPherson, 1980; Reynolds, 1981). The low response rate is problematic due to resulting low numbers and the possible effects of

response bias. The relatively small sample size ($N = 81$ for retired players; $N = 157$ for active players) limits statistical power and therefore strong confidence in the results. The issue of response bias introduces concern that the players who responded to the questionnaires are systematically different in some ways from those who did not respond. For example, it may be that the players who are more conscientious are more likely to respond. This personality trait is associated with better adjustment to retirement from professional sport. The combination of a small sample size and low base rates of some of the variables assessed indicates caution in interpretation of the data.

The test materials used to address the research questions in this study were chosen with reliability and validity issues clearly in mind. With the exception of the questionnaire items assessing emotional and functional adjustment to retirement, transition characteristics, specific planning, mental preparation and institutional support, the measures used are well-validated and researched. Issues including content validity, number of items per factor, scoring, lack of a screen for response style (e.g. social desirability, malingering) and high false positives in screening measures may be relevant, especially for less researched measures.

The research design is retrospective in nature and does not assess the process of adjustment to retirement. The retired players had been retired from 1980 to 1995 with the average year of retirement 1991. It is most likely that individuals at different stages of the transition will report different psychological adjustment. Suh, Diener, and Fujita (1996) report that in less than three months the effects of major life events lost their impact on subjective well-being.

The research design is quasi-experimental and causal relationships cannot be drawn. Although there is a clear relationship between transition characteristics, social support, specific planning, athletic identity, conscientiousness and institutional support and emotional adjustment to retirement, it cannot be said that these variables resulted in better emotional adjustment.

Implications of the results: theoretical, research and practical

The theoretical implications of this study include implications for theory regarding athletic retirement and implications for theories associated with the individual variables measured. Schlossberg's (1981) theory of adult transition is a useful theoretical approach to research retirement. Characteristics of the transition, of the environment and of the individual all related to the adjustment to retirement. The design of this study resulted in limited attention to characteristics of the pre and post-transition environment (only institutional support was assessed in this category) and it is likely that further research in this area would be useful. The results support the importance of transition characteristics, planning for retirement, personality traits and institutional support in athletic retirement.

Baillie's (1992) factor of specific planning demonstrated a relationship to most adjustment measures, both sport-specific and general psychological measures. This information may contribute to further development and validation of this measure. The strong relationship of personality traits to adjustment is minimally explored in previous sport retirement research, despite a strong research literature on personality and coping in general. This study indicates that personality, particularly the traits of conscientiousness and neuroticism, are relevant to the athlete's retirement experience. The results raise questions about the strength of the relationship of athletic identity to adjustment to

retirement, the role of extraversion in adjusting to sport retirement and the importance of mental preparation, as opposed to specific planning, in to successful adjustment.

The research implications of this study include contributions to the existing literature and observations of use to the research community. Succinctly, this study supports the view that adjustment to retirement is not difficult for the majority of athletes. It supports the contention that planning for retirement is useful. For the minority of professional hockey players who do experience problems, transition characteristics, social support and personality characteristics play a role.

The strengths of this study include the use of more than one measure of adjustment, including standardized measures. It is recommended that this be strongly considered in future research because this increases the chances of appropriate validity and reliability, allows for clearer communication of results and enables comparison to non-athlete retirement research.

The major limitations of this study are sample size and a retrospective design. After conducting a study in this area, the challenges of access, motivation and compliance are well known. It is also apparent that many athletes conscientiously completed a long assessment package and demonstrated interest in the area of adjustment to retirement in accompanying comments. One can expect that the reaction to retirement from professional hockey is fluid, not static, and that assessment of players pre-retirement, at retirement and at 3, 6, 12, 18 and 24 month periods post-retirement could be instructive.

It is recommended that future researchers consider a longitudinal research design, proceeding with an awareness of the cost and time commitment, challenges in obtaining institutional support and the low priority, and at times low acceptance, of academia and

research in the world of professional hockey. The success of longitudinal research in this area requires high collaboration and motivation by the NHL, NHLPA, individual players and researchers.

Social science research should involve the application of empirically derived knowledge toward the solution of real life problems. Although there is an endless list of psychological variables that may effect an individual's response to career termination, it is important to use available empirical and clinical evidence to make practical interventions. Adopting a prevention model of intervention, services can be considered primary, secondary and tertiary.

The primary intervention would occur early and consist of information, particularly about specific planning for retirement, best completed early in the career. Many suggest that primary prevention is important and early intervention is practical since organizational structures are in place that could organize and implement intervention strategies in a cost effective manner (see Pearson & Petipas, 1990). There should be continual awareness that sport is a short-term venture relative to the rest of the athlete's life. The average length of a career in professional hockey in this sample was 10 years; most professional athletes will retire at a relatively young age. Orlick (1986) suggested that athletes should be channeling some of their strengths into something other than athletic training and competition.

The secondary intervention would occur at the time of retirement. The development of a risk assessment tool similar in development and format to risk assessment tools used in forensic settings (e.g., HCR – 20 Assessing Risk for Violence; Version 2: Webster, Douglas, Eaves, & Hart; 1997) is possible. This would allow for assessment of risk for

poor adjustment to retirement in a systematic manner. For example, a player who experiences a sudden, unexpected and involuntary career termination, who has not planned for his retirement and demonstrates the personality characteristics (e.g., low conscientiousness, high neuroticism, low openness, high athletic identity, low social support, and alcohol-related problems) associated with poor adjustment requires greater intervention than an individual without these potential risk factors. Individuals assessed to be at higher risk for retirement problems could be offered access to various services and interventions to facilitate the transition from sport. This assessment tool would require more research in the area of athletic retirement to be feasible.

The comparative results between active and retired players indicate no differences on measures of personality, perceived social support, alcohol-related problems, depressive symptoms, positive affect and negative affect. The research design and limited sample size do not allow prediction of risk of adjustment difficulties in the current sample of active players. However, this area of research could be developed to provide guidelines for NHL teams and the NHLPA regarding the type of athlete more likely to experience a difficult retirement.

The variables that are associated with poor adjustment to retirement from professional hockey can be categorized as uncontrollable, or static, characteristics of the individual that may not be easily modified (or wished to be modified), and controllable or dynamic characteristics. This categorization may be useful in designing programs to assist in the transition. The characteristics of the transition (forced to retire, unprepared, poor initial reaction to the news) and personality traits are the most uncontrollable or static variables. For example, the characteristics of the individual that are related to poor adjustment

(conscientiousness, neuroticism, openness, perceived social support and athletic identity) are perhaps less likely to respond to intervention and in fact it may not be desirable to attempt to modify these during a player's career. If, as McCrae et al (2000) postulate, personality traits are biologically determined, then it is unlikely that intervention, at any point in the athletic career, can change the traits of neuroticism, conscientiousness or openness. However, the skills, habits, beliefs and social networks that can optimize a successful transition from sport can be achieved. However, it may be useful to identify players at risk for poor adjustment and to target them as most likely to be in need of support and intervention at the time of retirement.

Other variables are more susceptible to intervention. Specific planning for retirement, the provision of institutional support and alcohol-related problems are controllable or dynamic factors that could be addressed in a systemic institutional (e.g., team, NHLPA) manner. This could occur through the provision of services geared specifically towards career termination and strong encouragement and support that all players utilize these. As reported in the results, the majority of retired athletes support the provision of pre-retirement and post-retirement seminars by the NHLPA and NHL. Unfortunately, the majority also reports low usage of these services.

Baillie (1992) suggests that an officially sanctioned method of encouraging athletes to begin planning for retirement is important and acknowledges that the majority of athletes do not do so on their own. Baillie (1992) suggests that this may be due to the attitudes and beliefs that consideration of retirement issues is counter-productive to peak performance. Previous research (Crook, 1986; Ogilvie, 1987; Ogilvie and Howe, 1982) supports that these attitudes may hinder the adjustment process. The ongoing

identification and treatment of players with alcohol-related problems is obviously of benefit both during the playing career and at retirement.

Ogilvie and Howe (1986) suggest that the positive attributes of the sport experience should be utilized in the transition (such as mastery over the physical world and ability to work with others as part of a team) to facilitate the emotional withdrawal from sport and to maximize skills available. This suggestion is consistent with research in subjective well-being that indicates that making progress towards a goal is related to subjective well-being (Cantor & Sanderson, 1999). It may be that a successful adaptation to sport retirement is closely related to the establishment of new expectancies and goals. It is important that the retired player has or develops resources in areas related to his new goals.

Diener and Fujita (1995) suggest that having resources in areas related to current goals is more predictive of happiness than having resources that are not related to current goals. For an active NHL player, puck handling ability is one resource that predicts the achievement of current life goals (e.g. goals, assists) and may relate to the player's subjective well-being. At retirement, this resource is unlikely to be related to current life goals and therefore to subjective well-being. The retired player will need to identify or develop other resources. There will be many skills developed as an athlete that are possibly relevant to activities after retirement (e.g., striving for a common goal, being part of a team, recovering from losses); other skills may need to be developed. The ability to change goals may be a crucial component of successful adaptation to retirement from sport. Csikszentmihalyi (1999) states that people are most likely to experience

subjective well-being or happiness when work and leisure activities engage personal skills.

The tertiary intervention would occur in the period after retirement. It would provide some continued connection to the sport for athlete's who desire this (e.g., speaking to peers about retirement process) and provide professional intervention for individuals, spouses or families experiencing great adjustment difficulties (e.g. depressive illness, alcohol abuse, marital conflict).

Research literature suggests that interventions may minimize the frequency of poor adjustment to career termination in professional hockey players. The present study supports that preparation for career termination minimizes poorer adjustment. This preparation can be initiated at the beginning of an athletic career, continued through the athletic years and concluded when a successful transition is complete.

Conclusion

Career termination in NHL players does not result in crisis for the majority of players. However, there are a minority of players who do experience significant adjustment problems. The more traumatic transition is undoubtedly related to a variety of developmental, social and psychological factors. This study identifies a lack of specific planning for retirement, a sudden and unwelcome retirement from sport, low personal and institutional support, high athletic identity, low conscientiousness, high neuroticism, low openness and alcohol-related problems as related to poor overall adjustment to retirement from a professional hockey career. This exploratory research supports and challenges previous research results, adds to the available body of literature and, hopefully, provides

information that may promote or guide future research and assist in the development of interventions to facilitate that transition from professional sport.

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Appendix A
Participation and Consent Documents

CONSENT FORM

PROFESSIONAL HOCKEY PLAYERS AND CAREER TERMINATION STUDY

INVITATION TO PARTICIPATE: You are invited to participate in a study to learn about adjustment to career termination by professional hockey players. The study is being conducted by a Ph.D. student in clinical psychology at Simon Fraser University, Burnaby, B.C., Canada and has the full support of the National Hockey League Players' Association (NHLPA) and NHLPA Alumni.

PURPOSE OF THE STUDY: The purpose of this study is to understand the transition following career termination from professional hockey. An understanding of this experience will provide recommendations for ways in which the individual player and the NHLPA can facilitate this transition.

EXPLANATION OF PROCEDURES: If you choose to participate in the study you will be asked to answer a number of questions about yourself and your experiences as a professional hockey player. A set of questions will be asked of both active and retired players. Some of the questions will seem relevant to your life as an athlete; others will appear less relevant. It is important for the validity of the study that you answer all questions, even those that do not appear relevant. The average time to complete the questions is 25 minutes for active players and 35 minutes for retired players.

POTENTIAL RISKS AND DISCOMFORTS: There are no risks associated with participating. The information collected will provide a general characterization of adjustment to career termination.

POTENTIAL BENEFITS: There is no direct material benefit to you for participating in this project. However, if you do participate, you will be helping us learn more about the adjustment to career termination and will contribute to the development of positive programs to assist with this transition.

CONFIDENTIALITY OF DATA: The information obtained during the study will remain strictly confidential. The study is carefully designed so that no personal

identifying information is available to the researcher or the NHLPA. The questionnaire packages for the retired players will be mailed using NHLPA Alumni mailing lists. The packages for the active players will be delivered through the mail, an NHLPA representative or the primary researcher. All completed packages are then mailed back anonymously and have no identifying marks other than active versus retired player. The NHLPA will not see the completed questionnaires.

WITHDRAWAL FROM STUDY Participation is voluntary. You may end your participation at any time. You may choose not to answer particular questions for personal reasons.

OFFER TO ANSWER QUESTIONS: If you have any questions (specific questions about the questionnaires, general questions about the overall study or wish to find out the results of the study) please contact me by mail or phone.

Barbara Chambers
Department of Clinical Health Psychology
University of Manitoba, 770 Bannatyne Avenue
Winnipeg, Manitoba R3E 0W3
204-787-3345 (W) or 204-233-0836 (H)

The results of the study and my contact address after September 1, 1996, will be available through the NHLPA office.

Thank you for your time and interest.



Dear Survey Participant:

The National Hockey League Players' Association and the NHLPA Alumni are supporting a study of the adjustment of hockey players as they move into their next careers. We feel that the unique nature of a hockey career requires special consideration of retirement issues. Every NHL player has invested a significant and unusual amount of physical energy, emotional focus and substantial time in their hockey career. At career termination players need to find ways to reinvest themselves physically and emotionally in activities that will generate a level of challenge and personal satisfaction commensurate with their athletic careers.

All players face this challenge. There are numerous anecdotal accounts of the type of problems experienced but the number of players who have some degree of problem after career termination and the factors that effect the transition are unknown. This study will provide information that will guide the development of positive programs and various assistance to promote the positive and reduce the negative consequences of career termination.

The NHLPA has a commitment to assist players with the transition following career termination. We believe that this study can have practical implications for hockey players before, during and after retirement from the game. We ask that you support us by completing the enclosed questionnaires. Remember that your responses are anonymous. Thank you for your time and effort.

Yours very truly,

NATIONAL HOCKEY LEAGUE PLAYERS' ASSOCIATION

Doug Wilson
Coordinator of Player Relations
and Business Development

Michael Liut
Coordinator - Player Relations

NATIONAL HOCKEY LEAGUE PLAYERS' ASSOCIATION

One Dundas Street West, Suite 2300, P.O. Box 84, Toronto, Canada M5G 1Z3 Telephone: (416) 408-4040 Fax: (416) 408-3685

Appendix B

Measures completed by study participants (excluding copyrighted material)

Sport Retirement Questionnaire.

1. What is your present age? _____
2. What nationality are you? _____
3. Is English your first language?
 - a) yes
 - b) no

If no, what is your first language? _____
4. How many years did you play professional hockey? _____
5. How many years was the majority of your season spent in the:
 - a) NHL _____
 - b) WHA _____
 - c) IHL _____
 - d) AHL _____
 - e) other North American minor leagues (please list league) _____
 - f) European leagues (please list team and league) _____
 - g) other (please describe) _____
6. In what year did you last play in the NHL? _____
7. In your opinion, what was the major reason for your retirement? (Circle one.)
 - a) sudden (acute) injury or illness
 - b) recurring (nagging) injury or illness
 - c) declining skills or aging
 - d) team politics
 - e) own choice
 - f) other (please specify) _____

- 7a. In your opinion, what reason for retirement is most difficult to accept? (Rank from 1-5 (or 6 if you use "other") with 1 being the most difficult to accept.)
- a) sudden (acute) injury or illness
 - b) recurring (nagging) injury
 - c) declining skills or aging
 - d) team politics
 - e) own choice
 - f) other (please specify) _____
8. How prepared were you for your retirement? (Circle one.)
- a) it was a complete surprise
 - b) I was planning on a couple more seasons and was surprised
 - c) I knew it was coming, but I denied it
 - d) I was ready for it as my contract was over
 - e) it was my choice and I chose when to retire
9. Did you want to retire from professional hockey when it happened?
- a) yes
 - b) no
 - c) mixed response
10. Was your initial response to the end of your professional hockey career:
- a) very negative
 - b) negative
 - c) mixed
 - d) positive
 - e) very positive
11. My first response to retirement was: (Circle one.)
- a) to tell management they made a mistake, that I could still play
 - b) to become angry and argue with people
 - c) to become quiet and depressed
 - d) to accept the decision and plan for something new
 - e) to take a break and enjoy my retirement
 - f) another reaction (please specify) _____

12. About how long after retirement from competition did you first feel a sense of loss (for the end of your career)? (Circle one.)
- a) I never felt any sense of loss
 - b) I felt it before I actually retired
 - c) I felt it within my last game or within a day of my last game
 - d) I felt it within a week of my last game
 - e) I felt it within a month of my last game
 - f) I felt it longer than a month after my last game
13. At what point in your career did you first think about retirement? (Circle one.)
- a) before joining an NHL team
 - b) during the first half of my career
 - c) around the middle of my career
 - d) towards the end of my career
 - e) I didn't think about it until it happened
14. At what point in your career did you begin to make specific plans (e.g., investment planning, continuing education) for your retirement? (Circle one.)
- a) before joining an NHL team
 - b) during the first half of my career
 - c) around the middle of my career
 - d) towards the end of my career
 - e) I didn't think about it until it happened
15. Before retiring from competition, did you make specific plans for coping with possible financial adjustments (e.g., changes in income) of retirement? (Circle one.)
- a) yes
 - b) no
16. Before retiring from competition, did you make specific plans for moving into a new career? (Circle one.)
- a) yes
 - b) no

17. Did anyone ever encourage you to think about how you would adjust to retirement? (Circle one.)
- a) yes, my parents, my spouse and/or immediate family
 - b) yes, my teammates
 - c) yes, my coaches
 - d) yes, other (please specify) _____
 - e) yes, more than one of the above
 - f) no, no one ever suggested I think about it
18. If anyone suggested that you prepare for retirement, then did you listen and begin preparations? (Circle one.)
- a) yes, I began to prepare
 - b) no, I didn't think about it
19. Prior to your retirement did you attend seminars that focused on adjustment to retirement issues?
- a) yes
 - b) no
- If yes, who offered the seminar? _____
- Was this service optional or required? _____
20. Do you think that seminars before retirement that focus on adjustment to retirement should be provided to athletes?
- a) yes (please specify your reason) _____
 - b) no (please specify your reason) _____
21. If you feel seminars are appropriate, then whom do you feel is responsible for arranging these seminars? (Circle one.)
- a) the individual teams
 - b) the NHLPA
 - c) the individual players
 - d) the NHL
 - e) other (please specify) _____

22. When should these seminars be offered? (Circle one.)

- a) during the regular season
- b) during the off-season

23. How difficult for you were these aspects or parts of retirement? Please rate each question as:

- | | |
|------------------------|------------------------------------|
| 1 - very difficult | 4 - slightly difficult |
| 2 - somewhat difficult | 5 - not very difficult |
| 3 - neutral | 6 - does not apply to my situation |

- a) _____ losing the security of being a professional hockey player
- b) _____ the thoughts about losing the chance to do what I had always done
- c) _____ the end of a chance to compete and succeed
- d) _____ the loss of an important part of who I was
- e) _____ losing the good physical skills that I once had
- f) _____ fewer "highs" and "lows"
- g) _____ less emotional involvement in new career
- h) _____ less time spent on physical activity
- i) _____ less social interaction
- j) _____ decrease in income
- k) _____ less contact with teammates/hockey world
- l) _____ other (please specify) _____

24. How enjoyable for you were these aspects or parts of retirement? Please rate each question as:

1 - very enjoyable 4 - somewhat unenjoyable
 2 - somewhat enjoyable 5 - very unenjoyable
 3 - neutral

- a) _____ no longer needing to practice
 b) _____ having a chance to pursue other interests
 c) _____ being able to move into another career
 d) _____ not needing to be careful about training, enjoying things
 e) _____ other (please specify) _____

25. In your opinion, how long did it take you to be comfortable with adjusting to retirement from competition? (Circle one.)

- a) there was no difficulty for me, I adjusted right away
 b) about a month after my last game
 c) between six months and a year after my last game
 d) between one and two years after my last game
 e) over two years after my last game
 f) I would not say that I have yet adjusted

26. How much effect did your retirement have on your family members or close friends? (Circle one.)

- a) no effect at all
 b) a small effect, some minor disruptions
 c) a moderate effect, with some significant changes
 d) a large effect, with several major changes
 e) a tremendous effect, with several serious changes

27. For the following items, please indicate how strongly you agree or disagree with each statement:

- 1 - agree strongly
 2 - agree somewhat
 3 - neither agree nor disagree
 4 - disagree somewhat
 5 - disagree strongly

- a) If my retirement had come two years later than it did, then I would have been better prepared for it.

1 2 3 4 5

- b) There is nothing which has equaled the pleasure I found in sports.

1 2 3 4 5

- c) Retirement from a career in sports is something you cannot really prepare for.

1 2 3 4 5

28. For how long after retirement did you have thoughts about making a comeback?
(Circle one.)

- a) never had any thoughts
- b) for a few weeks
- c) for a few months
- d) for a few years
- e) still have thoughts about a comeback

29. After retirement, how long was it before you were able to find something to provide a new focus (e.g., something that gave you a purpose or a goal to achieve)? (Circle one.)

- a) almost immediately
- b) within a few weeks
- c) within a few months
- d) within a few years
- e) never

30. At the time of your retirement did your parent club or the NHLPA offer any information about retirement programs, seminars, workshops etc.?

- | | | |
|--------|-------------------------|--------|
| a) yes | If yes, did you attend? | a) yes |
| b) no | | b) no |

If yes, describe the type of service _____

31. Do you think that seminars should be offered to players after their retirement

- a) yes (please specify your reason) _____
- b) no (please specify your reason) _____

32. How much do you still think about and evaluate your time as a professional hockey player? (Circle one.)
- a) never
 - b) only rarely
 - c) once or twice a month
 - d) once or twice a week
 - e) once or twice a day
33. Rating your overall adjustment to retirement from hockey, at this time, how would you rate yourself? (Circle one.)
- a) poor, still struggling with several issues
 - b) below average, think about it, and have questions
 - c) average, getting along with few difficulties
 - d) above average, no real problems
 - e) excellent, no regrets, just fond memories
34. How much guidance or support for the transition following retirement do you feel you received from hockey institutions (e.g. team, NHLPA, alumni groups, NHL) following your retirement from professional hockey?
- a) none
 - b) a small amount
 - c) a moderate amount
 - d) a large amount
35. How satisfied were you with this level of support?
- a) very dissatisfied
 - b) dissatisfied
 - c) neutral
 - d) satisfied
 - e) very satisfied
36. Prior to retirement what level of formal education had you completed?
- a) less than grade eight
 - b) some high school
 - c) completed high school
 - d) some college or university
 - e) completed an undergraduate or university degree: please specify _____
 - f) study beyond undergraduate degree: please specify _____

37. Prior to retirement from professional hockey, please list any employment you had outside of hockey, including year and length of employment.
38. Prior to retirement from professional hockey, please describe any employment training, volunteer or educational activities you participated in since beginning your professional hockey career.
39. Have you worked since your retirement from professional hockey?
- a) yes
b) no
- If yes, describe job _____
40. Are you currently employed?
- a) yes
b) no
- If yes, describe job _____
41. How would you rate your general health?
- | | |
|------------------|------------------|
| a) excellent | e) poor |
| b) very good | f) very poor |
| c) good | g) terrible |
| d) average | |
42. Have you attended school or employment training since your retirement from professional hockey?
- a) yes
b) no
- If yes, describe _____
43. Are there any additional comments you would like to make about your retirement experiences? (please use back of page if necessary)
44. Are there any comments you would like to make about completing this survey?

10. Have you ever attended a seminar that focused on adjustment to retirement issues?
- a) yes
 - b) no
- If yes, who offered the seminar? _____
- Was this service:
- a) optional?
 - b) required?
- Did you attend?
- a) yes
 - b) no
11. Would you attend a seminar that focuses on adjustment to retirement issues?
- a) yes (please specify your reason): _____
 - b) no (please specify your reason): _____
12. If you feel seminars are appropriate, then whom do you feel is responsible for arranging these seminars? (Circle one.)
- a) the teams
 - b) the NHLPA
 - c) the individual players
 - d) the NHL
 - e) other (please specify) _____
13. When should these seminars be offered? (Circle one.)
- a) during the regular season
 - b) during the off-season
14. Do you think that seminars (and other retirement services) should be offered to players after their retirement?
- a) yes (please specify your reason) _____
 - b) no (please specify your reason) _____
15. Are there any additional comments you would like to make about completing this survey?

The Athletic Identity Measurement Scale (AIMS).

Please mark an "X" in the space that best reflects the extent to which you agree or disagree with each statement in relation to your own sports participation.

1. I consider myself an athlete.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
2. I have many goals related to sport.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
3. Most of my friends are athletes.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
4. Sport is the most important part of my life.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
5. I spend more time thinking about sport than anything else.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
6. I need to participate in sport to feel good about myself.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
7. Other people see me mainly as an athlete.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
8. I feel bad about myself when I do badly in sport.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
9. Sport is the only important thing in my life.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree
10. I would be very depressed if I were injured and could not compete in sport.
strongly agree _____:_____:_____:_____:_____:_____:_____:strongly disagree

The Center for Epidemiologic Studies – Depressed Mood Scale (CES-D).

Using the scale below, indicate the number that best describes how often you felt or behaved this way **DURING THE PAST WEEK.**

- 0 **Rarely or none of the time (less than one day)**
1 **Some or a little of the time (1-2 days)**
2 **Occasionally or a moderate amount of time (3-4 days)**
3 **Most or all of the time (5-7 days)**

DURING THE PAST WEEK:

- ___ 1. I was bothered by things that usually don't bother me.
___ 2. I did not feel like eating; my appetite was poor.
___ 3. I felt that I could not shake off the blues even with help from my family or friends.
___ 4. I felt that I was just as good as other people.
___ 5. I had trouble keeping my mind on what I was doing.
___ 6. I felt depressed.
___ 7. I felt that everything I did was an effort.
___ 8. I felt hopeful about the future.
___ 9. I felt my life had been a failure.
___ 10. I felt fearful.
___ 11. My sleep was restless.
___ 12. I was happy.
___ 13. I talked less than usual.
___ 14. I felt lonely.

- ____ 15. People were unfriendly.
- ____ 16. I enjoyed life.
- ____ 17. I had crying spells.
- ____ 18. I felt sad.
- ____ 19. I felt that people disliked me.
- ____ 20. I could not get "going".

The Positive and Negative Affect Schedule (PANAS).

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the PAST FEW WEEKS. Use the following scale to record your answers.

| 1 very slightly or not at all | 2 a little | 3 moderately | 4 quite a bit | 5 extremely |
|-------------------------------------|---------------|--------------------|------------------|------------------|
| _____ interested | | _____ hostile | | _____ nervous |
| _____ distressed | | _____ enthusiastic | | _____ determined |
| _____ excited | | _____ proud | | _____ attentive |
| _____ upset | | _____ irritable | | _____ jittery |
| _____ strong | | _____ alert | | _____ active |
| _____ guilty | | _____ ashamed | | _____ afraid |
| _____ scared | | _____ inspired | | |

The Satisfaction with Life Scale (SWLS).

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neither agree nor disagree

5 = slightly agree

6 = agree

7 = strongly agree

- _____ 1. In most ways my life is close to my ideal.
- _____ 2. The conditions of my life are excellent.
- _____ 3. I am satisfied with my life.
- _____ 4. So far I have gotten the important things I want in life.
- _____ 5. If I could live my life over, I would change almost nothing.

The Life-as-a-Whole Index (LAW).

How do you feel about your life-as-a-whole?

| | | | | | | | | |
|----------|-----------------|---------|-----------------------------|-------|---------------------|---------|-----------------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| terrible | very unhappy | unhappy | mostly dissatis- fied | mixed | mostly satisfied | pleased | very pleased | delighted |

The Social Support Questionnaire (SSQ6).

The following questions ask about people in your life who provide you with help or support. Each question has two parts. For the first part, list all the people you know whom you can count on for help or support in the manner described. Give the person's initials and their relationship to you. Do not list more than one person next to each of the numbers beneath the question. For the second part, circle how satisfied you are with the overall support you have. Use the following scale:

1-very dissatisfied 3-a little dissatisfied 5-fairly satisfied
2-fairly dissatisfied 4-a little satisfied 6-very satisfied

If you have had no support for a question, check the words "No one," but still rate your level of satisfaction. Do not list more than nine persons per question. Please answer all questions as best you can.

Example: Who do you know whom you can trust with information that could get you in trouble?

___ No one 1. 2. 3. 4. 5.
 6. 7. 8. 9.

How satisfied? _____

1. Whom can you really count on to be dependable when you need help?

___ No one 1. 2. 3. 4. 5.
 6. 7. 8. 9.

How satisfied? _____

2. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?

___ No one 1. 2. 3. 4. 5.
 6. 7. 8. 9.

How satisfied? _____

3. Who accepts you totally, including both your worst and your best points?

___ No one 1. 2. 3. 4. 5.
 6. 7. 8. 9.

How satisfied? _____

4. Whom can you really count on to care about you, regardless of what is happening to you?

___ No one 1. 2. 3. 4. 5.
 6. 7. 8. 9.

How satisfied? _____

5. Whom can you really count on to help you feel better when you are feeling generally down-in-the-dumps?

___ No one 1. 2. 3. 4. 5.
 6. 7. 8. 9.

How satisfied? _____

6. Whom can you count on to console you when you are very upset?

___ No one 1. 2. 3. 4. 5.
 6. 7. 8. 9.

How satisfied? _____

The Brief Michigan Alcohol Screening Test (BMAST).

The following questions concern your use of alcohol. Carefully read each statement and decide whether your answer is "yes" or "no". Then circle the appropriate response.

- | | | |
|-----|----|---|
| yes | no | 1. Do you feel you are a normal drinker? |
| yes | no | 2. Do friends or relatives think you are a normal drinker? |
| yes | no | 3. Have you ever attended a meeting of Alcoholics Anonymous (AA)? |
| yes | no | 4. Have you ever lost friends or girlfriends/partners because of drinking? |
| yes | no | 5. Have you ever gotten into trouble at work because of drinking? |
| yes | no | 6. Have you ever neglected your obligations, your family, or your work for two or more days because you were drinking? |
| yes | no | 7. Have you ever had delirium tremens (DTs), severe shaking, heard voices or seen things that weren't there after heavy drinking? |
| yes | no | 8. Have you ever gone to anyone for help because of drinking? |
| yes | no | 9. Have you ever been in a hospital because of drinking? |
| yes | no | 10. Have you ever been arrested for drunk driving or driving after drinking? |