

Stresses and Distresses of Professional Taiwanese Tennis Players and
Resources they Use to Cope

by

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ABSTRACT

Playing tennis professionally is a stressful profession. However, it has the potential to be even more stressful for players who must move from their home country in order to train. If not dealt with, these stresses have the potential of causing many negative outcomes, including increasing levels of distress, in these professional tennis players. It is known that resources play a role in reducing or buffering levels of stress and distress among individuals, but there are competing theories as to how this occurs. Using Ensel and Lin's models of stress processes, this is an exploratory study that identifies the stresses and distresses professional Taiwanese tennis players face and the resources they use to cope. Participants included in this study are professional Taiwanese tennis players (2 males and 2 females) who continuously attend national and international tennis competitions and have both domestic and world ranks. Results from the semi-structured interviews revealed that challenges, frustration, resources, and toughness were four general themes to describe stresses and distresses professional Taiwanese tennis players face and the resources they use to cope. Future research for professional tennis players is also discussed.

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Stresses and Distresses of Professional Taiwanese Tennis Players and Resources they Use to Cope

INTRODUCTION

According to the Association of Tennis Professionals (ATP) and the Women's Tennis Association (WTA), professional tennis players are like most athletes in other sports. For example, they share similar types of clothing, equipment and endorsements. Like players of other individual sports such as golf, most of the professional athletes are not salaried, but must compete and place highly in tournaments to obtain money. The salary of a professional tennis player is directly linked to his or her performances. There is no accurate portrayal of an average wage because the difference between a top-tier athlete and an unsuccessful professional is large. The prize money for winning Men's and Ladies' Singles Champions in Wimbledon, the largest global tournament, has reached the U.S. equivalence of \$1,623,300 in 2010, and will reach \$1,785,600 this year in 2011 (according to Wimbledon Official Website), but only the elite athletes have a chance to get it. For professionals who do not win tournaments, incomes are primarily based on endorsements, and those are difficult to find without first finding success.

Professional tennis players are elite athletes. To become a professional, one must win enough tournaments to gain recognition and become ranked among the

top players worldwide. A tennis player's season never truly ends. There are tournaments year round and training must be constant so that players can stay in shape. Many professional tennis players start playing as early as 6 or 7 years of age. It takes an incredible amount of dedication to play professionally and starting at an early age is just one aspect of this dedication. Although the profession is expected to continue to grow, as the sport continues to increase in popularity, the competition for professional tennis players is expected to become even more challenging.

In addition to the previous stresses identified, professional tennis players also face the risk of becoming injured. An injury can be one of the most difficult experiences in an athlete's career. A serious injury and the subsequent rehabilitation time period could vary the athlete's mood state and elevate stress levels. For instance, Brewer and Petrie (1995) compared injured college football players and uninjured players, and found that the injured players had higher levels of depression and stress than uninjured players. Wiese-Bjornstal and Shaffer (1999) suggested that the interaction between personal factors and individual characteristics, and the interaction between situational factors, social aspects, and environmental conditions influence how an athlete thinks about their injury.

In addition to the normal stresses which come with being a professional tennis player, Taiwanese players have to overcome stressful and difficult situations such as having few beneficial resources, insufficient training

environment, and inadequate medical systems for physical and mental health (S. Wang, personal communication, 1999). Because of these limited and disadvantageous conditions, top professional Taiwanese tennis players often reside abroad to overcome these deficits. This in turn creates additional potential issues such as language barriers, cultural differences, and the stress that comes from being away from home for a long time.

Given the importance of performing well and the additional stresses professional Taiwanese tennis players often endure, it is important to understand the stress and distress among these athletes. Ensel and Lin (1991) focused on stressors and resources in the life stress process as they affect mental health, by utilizing six plausible models with the panel study involving three waves of data from a community sample. According to Ensel and Lin (1991), there are a number of competing models explaining the relationship between stress, distress, and another critical component which is relevant to professional tennis players, resources which tennis players use to help coping with stress. For tennis players, these resources may include their coaches, other tennis players, friends, family, and their leisure pursuits. However, there is little research explaining what stress, distress and resources may be for professional Taiwanese players.

The research available on stress, distress and resources has predominantly focused on sports other than tennis. Some of the research includes similar concepts of stress, distress, and resources which give researchers other aspects to

understand professional athletes. For example, Hanin and Hanina (2009) introduced the Identification-Control-Correction (ICC) program, which aims to optimize performance in top-level athletes. The ICC program was developed to control optimal performance and to correct any unexpected performance errors in athletes. Jones, Hanton, and Connaughton (2002) discussed pressure and anxiety among elite Olympic sport performers. However, very few studies about professional tennis players include the concept of stress, distress, and resources. Previous research about professional tennis players has focused primarily on players' training intensity, their physical performances, or injury (Pluim, Staal, Windler, et al., 2006; Bylak & Hutchinson, 1998; Coutts, Gomes, Viveiros, & Aoki, 2010). In addition, the studies about international tennis players are also rare.

Problem Statement

The problem of the study is to conduct a semi-structured interview with professional Taiwanese tennis players to better understand their stresses, distresses, and resources they use to cope. While this study is an exploratory study, it uses the stress models developed by Ensel and Lin (1991) to help frame the study.

Significance of the Study

The results of the study will help explain the concept of stress, distress, and resources (coping strategies) generated among tennis players. As such, the information could provide athletes and coaches helpful information when dealing with stress and preventing negative outcomes by conducting suitable coping strategies. Furthermore, this study may contribute to related research on sport psychology and leisure coping related to professional Taiwanese tennis players.

Purpose of the Study

The purpose of this study is to identify the stresses and distresses professional Taiwanese tennis players face and the resources they use to cope.

Delimitations

The participants of this study were four professional Taiwanese tennis players (2 males, 2 females), aged 20-28, who continuously attend national and international tennis competitions and have both domestic and world ranks. A semi-structured interview which took about half to one hour was conducted with each participant and the interviews might be conducted through telephone and video camera in case those tennis players were not available doing interviews in person. In addition data were collected in May 2011.

Limitations

The limitations of the study were, first, the sample size of this study was small, including only four Taiwanese tennis players. Therefore, the results could not represent all professional Taiwanese tennis players as a whole. Second, the interpretation of stress levels might vary depending on the study participant. Also, current physical and mental conditions of the players might influence the results. However, these variables were not included in the study. Only a limited number of variables were included in the study.

Assumptions

The study was based on the assumption that tennis players selected for this study had high levels of distress due to the competitive nature of their profession and the cultural implications of training away from their home country of Taiwan.

Definition of Terms

The following terms were defined to clarify their use in the study:

1. Stress: Mental, emotional, or physical strain or tension. Stress is also a physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation. Life stress is positively related to mental and physical illness symptoms and negatively related to perceived health (Iso-Ahola & Park, 1996).

2. Distress: Distress is a state of extreme sorrow or pain, and it is also a state of being in extreme danger and needing urgent help. It is also acute physical or mental suffering. Negative life events, such as unexpected loss of a loved one, a disabling accident or a natural disaster, are inevitably distressing and disrupting (Kleiber, Hutchinson, & Williams, 2002).
3. Resources: Resources is an asset, something one uses to achieve a certain outcome (Lin & Ensel, 1989; Folkman & Lazarus, 1980). In the present study, coping strategies and social support are identified as resources.
4. Coping strategies: Coping strategies is viewed as a response to manage a stressful situation and the attendant negative emotions (Lin & Ensel, 1989; Folkman & Lazarus, 1980).
5. Social support: Social support can be characterized as an external form of coping resources, internal or psychological coping resources have become a major role in affecting individuals physically and mentally (Lin & Ensel, 1989; Folkman & Lazarus, 1980)

LITERATURE REVIEW

The focus of this study is to conduct an exploratory study that identifies the stresses and distresses professional Taiwanese tennis players face and the resources they use to cope. As such, the literature review focuses on the concepts of distress, stress, resources, and conceptual models used to help explain the relationship between these concepts.

Distress

Tennis is an individual sport requiring intense head to head competition (Loehr, 1990). As such, tennis players' levels of stress may be higher than non-tennis players due to the demands often placed upon them by their coaches, their families, and even themselves. This level of stress may lead players to distress and affect their performance on the court.

Negative life events, such as unexpected loss of a loved one, a disabling accident or a natural disaster, are thought to be the reasons of creating distress (Kleiber, Hutchinson, & Williams, 2002). According to the stress-distress model suggested by Selye (1956) and further explored by Ensel and Lin (1991), there is a positive relationship between stressful life events and the onset of distress and disorder. For professional Taiwanese tennis players, distress may come in many forms including losing matches, being away from home, or even from an injury. However, it is in this last area where most of the research has focused specific to

tennis players. Specifically, according to Pluim, Staal, Windler, et al. (2006), identified 39 case reports, 49 laboratory studies, 28 descriptive epidemiological studies, and three analytical epidemiological studies relating to tennis injuries. (Stanish, 1984; Taylor & May, 1996; Granito, 2001).

Bylak and Hutchinson (1998) identified the most common types of injuries to tennis players of all ages are muscle sprains and ligament sprains due to overuse. Data often show that the number and the frequency of injuries continue to increase between 1995 and 2000 (Stanish, 1984; Taylor & May, 1996; Granito, 2001). Due to the increasing demands of professional tennis players, many players often over train themselves to gain a competitive advantage over their opponents. This has led researchers to recommend monitoring of training loads. An athletes' training load is influenced by training volume, the duration of training, and training intensity (Coutts, Gomes, Viveiros, & Aoki, 2010).

In addition to differing levels of injuries, professional Taiwanese tennis players may also feel the effects of being away from home. Bruner, Munroe-Chandler, and Spink (2008) indicated that it could be positive and negative for young athletes being away from home. This is due to the Taiwanese culture that being together is so important for many Taiwanese, especially during the New Year holidays. It is important because everyone can be blessed from the reunion. However, these players may miss the most important family holiday in a year due to their competition schedules. A player may become mentally stressed if they

cannot attend these holidays which may become a source of distress for the professional tennis players.

Stress

"Well, I think it's a goal at the beginning of every year... It's certainly an accomplishment every year. It's an honor to qualify once and each time you realize how tough it actually is. You can't just play well for one week. It's the culmination of doing it week after week on tour." by Andy Roddick (11/30/2010)

Stress is mental, emotional, or physical strain or tension. It is mentioned that stressful life circumstances induce physical and mental illnesses (Coleman & Iso-Ahola, 1993). For professional tennis players, stress comes in many forms. When speaking of stress in this study, it is referring to mental, emotional, or physical strain or tension (Iso-Ahola & Park, 1996). Thus, for tennis players, this may include stress from performance demands, the potential of getting injured, and expectation from family members. It is believed that even when an event is controllable this does not always lead to a reduction in stress or to a positive outcome, and believing that an event is uncontrollable does not always lead to an increase in stress or to a negative outcome (Lin & Ensel, 1989). Stress has been found to also stimulate people's motivation and desire to achieve certain goals (Tyka, Blecharz, & Tyka, 2007). For instance, for professional tennis players, the desire to win a match often motivates players to improve their performance which

in turn causes stress upon the player. This increase in stress may eventually affect their physical and mental health which may result in poor performances (Rees & Hardy, 2003).

Managing stress and distress is often an important issue for professional athletes. Stress from injuries, ranking, competitors, family/friends, and societal pressure may lead these players to unnecessary and dangerous behaviors like alcohol and drug problems. Waddington, Malcolm, Roderick, Naik, and Spitzer (2005) examined the drug use of English professional football players. The results showed that many players use supplements, although almost one in five players do so without seeking qualified professional advice from anyone within the club. Blood tests are rarely used to monitor the health of players. One third of players had not been tested for drugs within the preceding two years, and 60% felt that they were unlikely to be tested in the next year. The use of performance enhancing drugs appears to be rare, although recreational drugs are commonly used by professional footballers. Six percent of respondents indicated that they personally knew players who used performance enhancing drugs, and 45% of players knew players who used recreational drugs. These results suggest that drug use may be used to cope with stress both either pressures to perform at a higher level (i.e., performance enhancing drugs) and for overall levels of stress (i.e., recreational drugs).

Covassin and Pero (2004) examined the relationship between self-confidence, anxiety, and mood states in collegiate tennis players. An individual's positive or negative mental state has long been thought to play a crucial role in his or her ability to perform sport specific tasks. This ability then either augments or detracts from his or her overall success or failures as an athlete. Players who are evenly matched in physical skills often rely upon their psychological skills to gain an advantage over their opponents. More specifically, self-confidence, mood disturbances, cognitive and somatic anxiety have all been linked as contributing factors to athletic performance (e.g., Hassmen & Blomstrand, 1995; Morgan, O'Connor, Ellickson, & Bradley, 1988; Ussher & Hardy, 1986). Several studies have shown successful elite athletes to have lower pre-competition anxiety than less successful athletes (e.g., Highlen & Bennett, 1979; Mahoney & Avenier, 1977; Ussher & Hardy, 1986; Weinberg & Gennchi, 1980). However, other researchers have found somatic anxiety to peak rapidly and immediately preceding the start of competition in cricket players (Jones, Cale, & Kerwin, 1989), rowers (Ussher & Hardy, 1986), and golfers and gymnasts (Krane & Williams, 1987). The findings across these research studies suggest that there may be some disparity in anxiety levels between athletes across different sports.

Goals and motivation of professionalism in snowboarding are also discussed in Tyka, Blecharz and Tyka (2007) who found that the performance in different sport disciplines is no longer only due to physical abilities but also balanced diet

and psychological skills. It is important to be self-motivated for professional sport players. According to Iso-Ahola (1989), a lack of intrinsic motivation would lead people to a state of boredom. If these players also see their profession as their leisure activity, looking for intrinsic rewards from their involvement is necessary, such as self-enrichment and self-gratification.

Given the importance of managing levels of stress, individuals often look to leisure to help them reduce their levels of stress. This is supported by the literature which suggests leisure often buffers the effects of stress upon a person's physical and mental health (Iso-Ahola, 1989). Leisure has been well-studied as an influence in coping with stress (Coleman & Iso-Ahola, 1993; Iso-Ahola & Park, 1996). The study by Kleiber, Hutchinson, and Williams (2002) states four functions of leisure in transcending negative life events. The negative life events which were identified in their study were close to and focus on stress, rather than distress. However, negative life events are often a matter of individual differences (Snyder, Ford, & Harris, 1987). These four functions identified by Kleiber et al. (2002) were as follows: 1) distracting, 2) generating optimism about the future, 3) aiding in the reconstruction of a life story that is continuous with the past, and 4) as vehicles for personal transformation. There are many activities individuals may do to reduce their levels of stress including listening to music, watching television, and doing exercise. However, leisure coping strategies differ by individuals (Lazarus, 1993). For instance, the use of exercise to reduce stress for a

professional tennis player may not have the same effects given the extent to which they do exercise as part of their daily routines. In fact, additional exercise may have a counter effect and may be a contributing factor to their heightened levels of stress.

Resources

The resources a person has often relates to their levels of stress and distress. In this study, a resource is referred to as an asset which one uses to achieve a certain outcome or to cope with a certain situation. According to Pearlin and Schooler (1978), coping is a behavior that people do to protect themselves from being psychologically harmed by problematic social experience. Coping is also a behavior that significantly mediates the impact that societies have on the individuals.

Masten, Tusak, Zalar and Zihlerl (2009) examined stress, coping and social support in three groups of university students. The results of this study suggest that there are no significant differences in strategies for coping with stress between sport, medical and psychology students. However, their results indicate that students associated with sports had less social support compared with the other two groups of students. Even though sport students perceived less social support, there is no significant evidence to conclude that less perceived social support affects the level of well-being of sport students.

Rees and Hardy (2004) mentioned the importance of social support to professional athletes. They examined the factor structure of a four-dimensional measure of social support, and matched social support dimensions with stressors in examining the main and stress-buffering effects of social support upon factors underlying performance in tennis. The results illustrate the importance of matching specific types of sport-relevant social support with the needs elicited by the stressors under consideration.

Based on McLean (2005), leisure activities are actions in which individuals feel a state of freedom and have opportunity for spiritual and intellectual happiness. It is also true that individuals generally do not participate in the activities that are likely to lead to unpleasant and unsatisfying experiences (Iso-Ahola, 1989). As such these leisure activities may be seen as a resource for many tennis players given the positive outcomes a person may derive from them.

Summary of Literature Review

The focus of this study is to conduct an exploratory study that identifies the stresses and distresses professional Taiwanese tennis players face and the resources they use to cope. As such, the literature review focuses on the concepts of distress, stress, resources, and conceptual models used to help explain the relationship between these concepts.

Kleiber, Hutchinson, & Williams (2002) suggested negative life events, such as unexpected loss of a loved one, a disabling accident or a natural disaster, are thought to be the factors of creating distress. Ensel and Lin (1991) also found there is a positive relationship between stressful life events and the onset of distress and disorder. Due to the increasing demands of professional tennis players, many players often over train themselves to gain a competitive advantage over their opponents. This has led researchers to recommend monitoring of training loads (Coutts, Gomes, Viveiros, & Aoki, 2010). For professional Taiwanese tennis players, distress may come in many forms including losing matches, an injury, or even being away from home (Bruner, Munroe-Chandler, & Spink, 2008).

For professional tennis players, stress also comes in many forms, including performance demands, the potential of getting injured, and expectation from family members. Stress could lead to both positive and negative outcomes (Lin & Ensel, 1989), but the increase in stress may eventually affect players' physical and mental health which may result in poor performances (Rees & Hardy, 2003). Covassin and Pero (2004) and other three studies found self-confidence, mood disturbances, cognitive and somatic anxiety have all been linked as contributing factors to athletic performance. Goals and motivation are also important factors for the performance of professional sport players. While leisure activities have

been well-studied as an influence in coping with stress, Lazarus (1993) mentioned leisure coping strategies differ by individuals.

Coping strategies are behaviors that people do to protect themselves from being psychologically harmed by problematic social experience. Coping strategies also significantly mediate the impact that societies have on the individuals (Pearlin & Schooler, 1978). Masten, Tusak, Zalar and Zihelr (2009) examined stress, coping and social support in three groups of university students. The results indicate that even though sport students perceived less social support, there is no significant evidence to conclude that less perceived social support affects the level of well-being of sport students. Rees and Hardy (2004) also illustrate the importance of matching specific types of sport-relevant social support with the needs elicited by the stressors under consideration.

The review of literature summarized information pertaining to the three concepts of distress, stress, and resources in current and related research. However, very few studies about professional tennis players include the concepts of stress, distress, and resources. Previous research about professional tennis players has focused primarily on players' training intensity, their physical performances or injury (Pluim, Staal, Windler, et al., 2006; Bylak & Hutchinson, 1998; Coutts, Gomes, Viveiros, & Aoki, 2010). In addition, the studies about international tennis players are also rare. There is clearly a need for a more involved inquiry into professional Taiwanese tennis players.

METHODS

This focus of this study is to conduct an exploratory study that identifies the stresses and distresses professional Taiwanese tennis players face and the resources they use to cope. More specifically, this study examines what factors lead tennis players to stressful conditions, on and off the court, and what resources and coping strategies these tennis players use to decrease stressful situations.

Population

There are 18 male professional Taiwanese tennis players having records in the Association of Tennis Professionals (ATP), aged 16-28, and 26 female professional Taiwanese tennis players in Women's Tennis Association (WTA), aged 15-26.

Sample

- Player 1: Kelly, aged 20, turned pro at 2007.
- Player 2: Susan, aged 25, turned pro at 2001.
- Player 3: Tim, aged 28, turned pro at 2002.
- Player 4: Henry, aged 20, turned pro at 2006.

The sample of this study consisted of two male and two female professional Taiwanese tennis players, aged 20-28. The selection of the players to participate in this study was based on domestic and world ranks in the Association of Tennis Professionals (ATP) and Women's Tennis Association (WTA), which means that all the participants needed to have national and international ranking and continuously attend national and international tennis competitions. Participants were e-mailed a cover letter, including information about the study. They were informed of the purpose of the study, confidentiality of their responses and details pertaining to their voluntary involvement and that they could withdraw at any time without consequences.

Research Design

This study implemented a qualitative, semi-structured, in-depth, open-ended interview design. Qualitative, in-depth interview research opens up and expands the possibilities of knowing in sport psychology (Dale, 1996; Jackson, 1996; Sparkes, 1992, 1998). In the past 15 years, a growing number of scholars in sport psychology have contributed to qualitative research through the use of in-depth interviews to understand the connection between the experiences and emotions of athletes (Davis, 1991; Jones, Hanton & Connaughton 2002; Podlog & Eklund, 2006).

A qualitative methodology was employed for two reasons. First, it is thought that answers from the interviews would provide an in-depth understanding of these athletes' experiences, perceptions, and feelings without the constraints of a questionnaire (Mallet & Hanrahan, 2004). Second, doing interviews will also provide information about what coping strategies that these athletes use which may not have been identified with questionnaires (Mallet & Hanrahan, 2004).

Each participant was interviewed at a time and date agreed upon by the researcher and the participant. Multiple methods were used to collect data from interview participants, including telephone, email or instant messenger. Selection of method was contingent on preference of interviewee. Email communication was found to be an efficient, convenient and cost effective method of gathering data from a small network of geographically dispersed individuals (Worth, 2008). Using webcam to communicate is also a popular and widely used method with the situation of long-distanced talks. These tennis players travel around the world and would not stay in one place for a long time; therefore, using video telephone was a possible way to conduct the interviews. However, none of these tennis players felt sufficiently comfortable to use this method of data collection. It took half to one hour with each participant, and the interviews were conducted in Taiwanese.

Phenomenology

According to five qualitative traditions provided by Creswell (1998), this is a phenomenological study. A phenomenological study describes the meaning for several individuals of their lived experiences of a concept or a phenomenon. The data is collected from persons who have experienced the phenomenon, and the researcher develops a composite description of the essence of the experience for all of the individuals. The description consists of what and how they experienced. Bracketing is the first step in the process of data analysis in which the researcher sets aside, as far as is humanly possible, all preconceived experiences to best understand the experiences of participants in the study (Moustakas, 1994).

Instrumentation

A structured example of the interview (Appendix A) was developed by the researcher and used for each athlete but remained open for additional questions that arose. Questions included background athletic information, social support, coaching, motivation, and maintenance of training and competition (Appendix B). Hand-written notes were taken during interviews. To protect participant identity, pseudonyms were assigned and were be used in data analysis.

Data Analysis

Qualitative data were transcribed verbatim from audiotapes and notes.

According to Marshall and Rossman (2010), qualitative data analysis can be broken down into six phases: (a) organizing the data; (b) generating categories, themes, and patterns; (c) coding data; (d) testing the understandings; (e) searching for alternate understandings; and (f) writing the report. This process makes sense of collected data. The researcher begins to interpret the information by giving meaning to the words and actions of the participants. Bracketing is used in data analysis. By analyzing the meaning, structure and essence of each participant's experiences, a thematic line-by-line analysis of the interview data was undertaken.

RESULTS AND DISCUSSION

The study aimed to identify the stresses and distresses professional Taiwanese tennis players face and the resources they use to cope. The four themes that emerged from the raw data were challenges, frustration, resources (intrinsic/extrinsic motivation), and toughness. Challenges represented stress in this study, which were stressors in the stress models; frustration represented distress; and intrinsic/extrinsic motivation represented resources. These four themes contributed to the participants' persistence in the sport of tennis.

Challenges

Challenges could be divided into two parts. Some challenges positively affected these players. Because there were challenges, it made these players improve faster, and they also wanted to be better. Numerous challenges were identified by the players:

Susan: I felt pressure when competing on the courts, but I kind of liked the atmosphere, which made me improve faster and faster. I knew that challenging situations could be stimulation which pushed me way forward.

Henry: My coach is strict. I'm afraid of him, but he also makes me stronger, mentally, to reach his expectation. But the truth is, it's challenging and I'm so tired.

Kelly: I felt so tired and was in pain during the intensive training before every major tournament match. Five hours for tennis and two hours for physical training every day in three weeks, but I couldn't give up. Everything I did was good for my better performance.

Kelly: I once faced the world ranked number one player. People thought that it was stressful playing with her, but I didn't think that way. I didn't care about win or loss because apparently I might lose. I thought it was seldom to have a chance to play with top player, so I had to do my best and who knows, I did win that game!

Tim: I'm different from most of the tennis players, I mean, my parents are not my coach. Compared with other players, I have to make most of the decisions, and the suggestions from my parents are limited. I don't blame them because it somehow makes me more independent.

Positive challenges also included life changes. Players had to travel around to different countries for tennis contests. Depended on how they thought of the changes, the differences in life could also be positive.

Henry: I don't speak English well, but sometimes using hand gestures make my life more interesting.

Kelly: Being alone in the United States, I have to think more, be stronger mentally, and be mature. I see more and have broader horizons than other same aged kids. All these personalities are necessary for a top tennis player.

Tim: I prefer attending matches outside of Asia because I feel bored playing in a familiar environment, language and culture. Being in the different places gives me unexpected experiences, maybe a great success, or a total failure. On the other hand, some challenges negatively affected these players. If they put too much pressure on their performance or cared too much about their wins and losses, it negatively affected players' mental and physical state. However, the following negatively affected examples only influenced these players at the moment when they recognized the negative feelings which did not last long as they knew they had to solve their problems immediately.

Henry: The biggest stress I have, I believe, is myself.

Tim: I cried because I'm the only one who lost in [...]. But I'm thankful to my opponent. I did my best and learned a good lesson.

Frustration

In this part, when players could not successfully solve challenges they viewed as negative, these negative challenges would become one of the sources of their frustration. The negative challenges that became source of frustration included unsatisfied performances, unexpected lost, and having difficulties to deal with failure and pressure. For examples:

Henry: I felt so frustrated during my underperformed days. I couldn't handle my racket, I couldn't even believe in myself winning any game.

Kelly: I went to America when I was 11 and I had stayed there until I was 17. In the beginning, I called home almost every day. I told my mom that I missed them so much; I didn't want to stay there. I cried everyday on the phone. I felt so lonely there.

Tim: In 2007, I won [...], but after that victory, I lost every single match for the whole year. I was beaten by everyone, those either younger or older than me, even those who are worse than me. I lost all my confidence. (Kelly) I cried a lot during first couple years in this career because I didn't know how to deal with failure and pressure. I remembered I almost gave up playing tennis.

Resources (Intrinsic/Extrinsic Motivation)

All of the tennis players in this study were competitive from an early age. In fact, almost every professional tennis player started playing tennis at the age of 6 or 7. It was the age to show their innate ability and the age to let coaches and parents discover their talent. However, these players had their own stories about tennis. They had their ways or resources which helped them overcome their difficulties. The resources included two dimensions, intrinsic and extrinsic. Both intrinsic and extrinsic motivation had a tendency to help these tennis players a lot to overcome the difficulties and the hardship of continuous training. Because of their love and passion toward tennis, it seemed that they were not afraid of facing

challenges and difficulties. Kelly, Tim and Henry expressed their love toward tennis:

Kelly: I started playing tennis when I was in kindergarten. I began my formal training in my first year at elementary school. I went to America when I was 11 and I had stayed there until I was 17. At first, I was just interested in it, when my coach said that I had a great talent and opportunity to play professionally, I started my tennis career, and the truth is, I really love tennis.

Tim: I'm always not a promising player from the perspective of the media, and I don't know how long I'm going to be in this career. What I'm sure is that I got so many precious experiences from tennis, and I want to thank my parents for being my backbone all the time. I really love tennis.

Henry: Though I have to be away from home 8 to 9 months a year, I kind of like the feeling of flying around the world. That's how every professional tennis player does, doesn't it? I really want to be professional, that's my dream.

All four players shared their stories about the support from their family and friends and also indicated that family and friends were the most important supports and resources for them.

Kelly: I called my mom and said, "Mom, I want to give up tennis, the pressure was too much to bear." My mom was working in a fish market, she said,

“You have made this far, you can’t give it up now.” I thought of my mother then, she had been supporting me for more than ten years, then I thought, I want to make a comeback.

Kelly: My coach is always by my side and cheer up for me, which I think is a great help to build confidence.

Henry: Every time I feel down, and want to give up, I think of my family. After that I can start over again.

Tim: Thanks for my friends and all who are worried about me. It is too early for me to retire. Even though it is tired to be all alone, there is nothing worse than losing myself and my goal. Hope you can always cheer for me and that will be the most powerful support.

Susan: My father brought me into this career, but we couldn’t get along with each other when I was little. Now I’m thankful for everything he did for me, and I’m so happy that he’s still proud of me. We are good friend now. Therefore, I want to play for my family.

Making themselves relaxed was also one of the important resources to get rid of stress and frustration. There were not enough evidences to indicate that their leisure activities had positive effect on their performances on the court, but there is evidence to suggest that it helps them to relax.

Henry: I usually don’t play tennis when I go home and take rest. I play computer, watch TV, movies, and listen to music to relax.

Susan: Usually, I keep myself in a happy mood. I think I am very optimistic.

When I'm free, I play computer games and listen to music.

Tim: I write blogs, listen to music, and chat with friends on Skype in my free time.

Toughness

According to Weinberg (2002), mental or emotional components often overshadow or transcend the physical aspects of the game. It means that even though physical or technical aspects were important, the mental side of tennis played a critical role in determining a win. Loehr (1982) mentioned that mental toughness responded in varying ways which enabled them to remain feeling relaxed, calm, and energized because they had learned to develop two skills; first, the ability to increase their flow of positive energy in crisis and adversity, and second, to think in specific ways so that they had the right attitudes regarding problems, pressure, and competition. These players presented unbelievable levels of mental toughness.

Kelly: I'll do it again if it's not good enough. I want to be the best. Tennis has changed my ways of thinking and attitudes. Gradually, I began to hold a positive attitude toward everything. You're special. As long as you believe you can make it, you can make it. I want to be known to the whole world. You have to believe in yourself, always.

Henry: Many things can become the source of my stress; however, it depends on how I interpret those things. I know how to overcome the difficulties and I'm not affected by them.

Henry: Sometimes I push myself to hard, it makes me a little bit crazy, but I know that I am the one who determines how good I can be.

What made these players tough was that they seemed to have to understand themselves. They also had to clearly know what they want.

Tim: I think I'm too gentle. This is not a good personality on tennis court. It is also a challenge for every tennis player to strike a balance between on court and off court. You should be tough on court, but be gentle and nice off court.

Tim: In 2009, I was under bad status, so I lost every game and also my confidence. What's worse, the faster I wanted to recover, the worse I played. However, every game is a new start, I may lose again, but I also have half chance to win. Who knows?

Henry: Living in foreign countries makes me mature and more independent. Being mature and independent is so important on the court.

Susan: I do love tennis, but tennis is not the only thing in my life. Therefore, I keep telling myself that wins and losses are not big deals. Enjoy tennis is the most important thing.

Kelly: Being alone in the United States, I have to think more, be stronger mentally, and be mature. I see more and have broader horizons than other same aged kids. All these personalities are necessary for a top tennis player.

It was assumed that getting injured could be the greatest disaster for these players and could be a source of distress. However, injury did effect them, but injury did not lead them into depression. To be clear, they did feel down, but they could immediately adjust their attitudes and think positively. They did not take risks getting on the courts just for a few wins; on the contrary, they care more about their long-term success.

Henry: I'm not afraid of getting injured. Because I know how it feels and how injury affects me, I always do my best to take good care of myself. The training I do also strengthens my body, so it's not that easy to get injured. However, if I do get injured, I won't force myself to get on the court. Even there is only tiny injury, I won't take the risk.

Susan: If I am injured or being at a low point, I will consider canceling one of the following tournaments, and getting over the hard time.

CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

The purpose of this study was to understand how professional Taiwanese tennis players cope with stress and distress through the limited resources they have. Ensel and Lin's (1991) six causal models of the life stress process were used to help understanding the concepts of distress, stress and resources. Results indicated that for these four professional Taiwanese tennis players the themes of challenges, frustration, resources (intrinsic/extrinsic motivation), and toughness led to persistence in the sport of tennis.

The tennis players overcame varying challenges during their careers. These challenges included competing with better players, pressure from coaches and themselves, physical and mental barriers, limited supports, and the change of environment. According to Deci and Ryan (1985), intrinsic motivation is related to and enhanced by feeling a sense of accomplishment in a challenging situation. Some challenges were considered to have positive effects on the players, while some challenges had negative effects at the moment, but not lasting long because of immediate solution by the players themselves or their supportive resources. However, if the level of resources was low, or there was a lack of resources, the negative emotion created by the stressful situations would become a possible source of frustration and distress. Three out of four of these players shared their

experiences of feeling frustrated. The one who did not give a clear evidence of feeling frustrated was because she thought she was optimistic; and she did not think winning and losing was serious enough to create frustration. The other three players experienced the most frustration during their young ages as this was the time when they were still learning various skills that would enable them to face challenges and difficulties.

The experiences of challenges, frustration, and resources all became the important elements to create the last theme: toughness, which was definitely one of the necessary ability for a professional tennis player. Both Weinberg (2002) and Loehr (1982) indicated that mental toughness played a determining part in tennis competition. Being tough, these tennis players knew how to deal with any unexpected situation on court, and they would not let negative emotion continue to affect their performance. They all understood that positive attitude was one of the important weapons to overcome pressure and adversity.

Recommendations

Procedural

Procedurally, data collection timing was the most difficult component. These Taiwanese professional tennis players kept travelling during data collection. They travelled to different destinations with different time zones which was the

biggest challenge for data collection. In order to collect for this, the interviewer needed to modify their sleep schedule.

Conceptual

Future research should focus on creating a model specifically for professional tennis players since this study was an exploratory research by applying Ensel and Lin's stress models (1991) which shared similar concept with this study.

The Life Stress Paradigm

Ensel and Lin (1991) focused their research on stressors and resources in the life stress process as they affect psychological distress (Figure 1). The sample of their study was 639 adults aged 18-70 who lived in the area of upstate New York, chosen from census housing data. The purpose of the study was to integrate stressors and resources from various sources into a model and to find out the cause of mental health. The researchers took advantage of three measurement periods to examine six plausible models regarding the effects of stressors and resources on psychological distress. The result of their study identified the deterioration model as the most probable model as representing their sample.

In the deterioration model, the impact of life experiences on distress is seen as being mediated by the presence or extent of resources. Life experiences precede resources. That is, resources become meaningful only after an individual

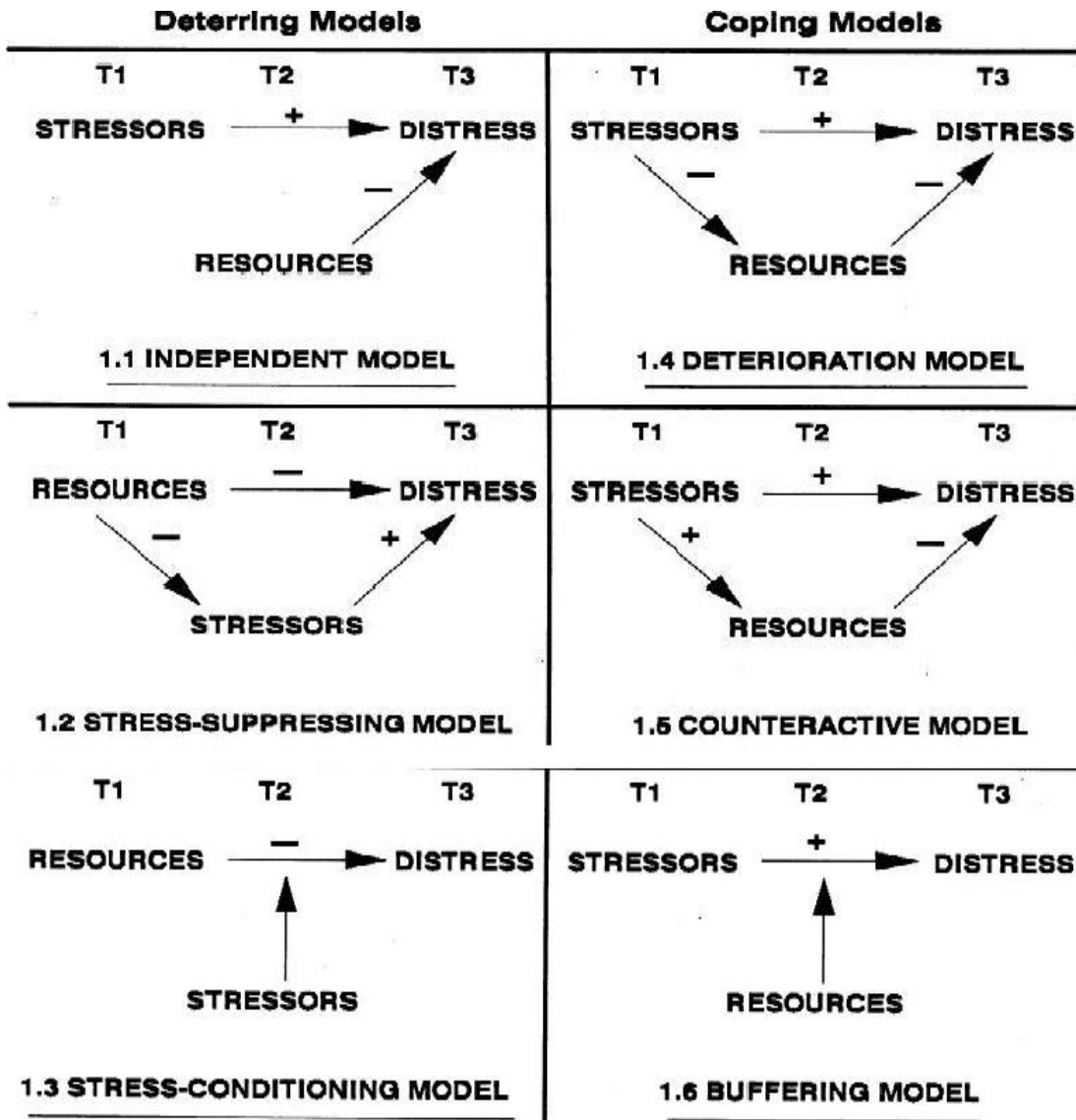


FIGURE 1: The life stress paradigm (Ensel &Lin, 1991)

has experienced stressful conditions or situations. However, the stressors' impact on resources precedes its impact on distress, rather than acting simultaneously.

The resources reduced or weakened by the presence of life experiences

subsequently result in higher levels of distress and eventually weaken the direct positive impact of stressors on distress.

In the independent model, the presence of stressors will not have any implications for the effect of resources on distress; in the stress-suppressing model, the presence of resources reduces the likely experience of stressful situations as well as distress. The presence of resources decreases the probability of experiencing a stressful event; and in the counteractive model, resources balance the impact of life events on distress. Stressors will have a direct positive effect on distress and also on resources. In the stress-conditioning model, the absence or low level of resources with the occurrence of stressors will result in higher levels of distress. Therefore, stressors are like a condition which is always there no matter if there are high or low level of resources, but stressors will not lead to distress only under higher level of resources. While in the buffering model, similarly, stressors will have an impact on distress only under the lack of resources. The major difference between these two models is that stressors causally precede resources in the buffering model. The roles of stressors and resources as active and reactive agents in the buffering model are the reverse in the stress-conditioning model.

After considering the models, the buffering model seems the most appropriate for this study. Specifically, none of the athletes suggested their

resources directly affected their levels of distress. However, they did suggest their resources moderated their ever present stress levels due to their profession.

Practical

Understanding the concepts of stress, resources, and distress is significant for all professional tennis players. Researchers have indicated that mental toughness plays a determining role in sports' competition which is influenced by their levels of stress and distress affect the most. Therefore, this study provides possible evidence that having access to the resources helps professional tennis players deals with stress and prevents negative outcomes.

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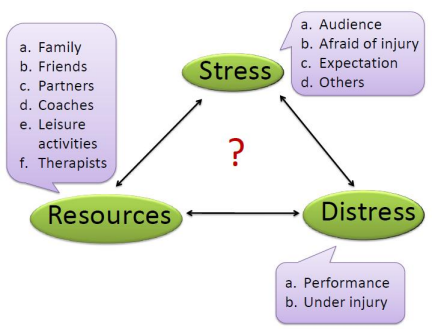
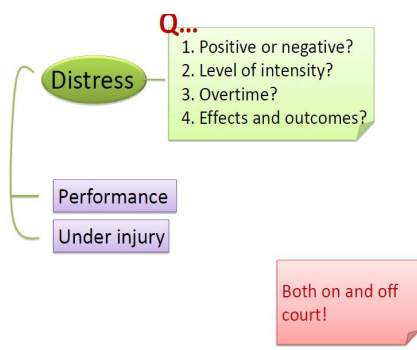
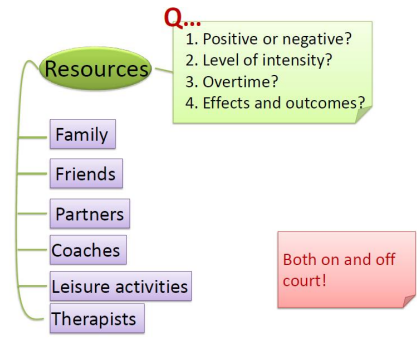
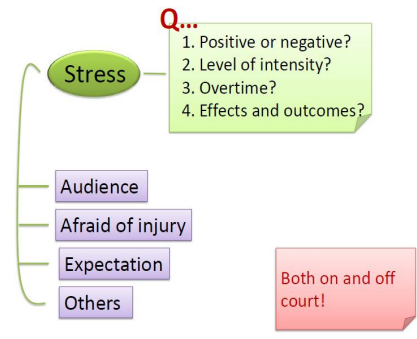
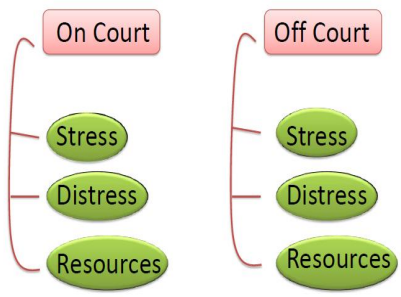
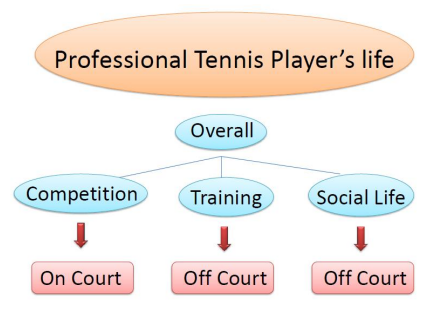
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APPENDIX A

STRUCTURE EXAMPLE OF INTERVIEW



APPENDIX B

INTERVIEW QUESTIONS

Interview

General Profession

1. What motivated you to start competing in tennis as a professional?
2. Describe your level of interest in tennis when you first time competing in tennis.
3. Have you set any goal for yourself after you became professional?
4. How do you know that you are competent in tennis?

Stress

1. What are the sources of your stress?
2. What stresses do you think you have are those general people don't have?
3. What stresses are positive to you? What are negative?
4. Since the beginning of your professional career, have sources of stress changed?
5. What are you thinking when you are in a game?

Distress – will focus on “being away from home” and “performance”

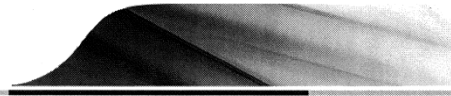
1. Have you ever felt distressed?
2. How many days in a year are you away from home because of competition and training?
3. Do you enjoy flying/traveling from place to place?
4. Have you encountered any unexpected situation during contest season and negatively affect your mood or condition? How did you overcome it? (Related to Resources)
5. Talk about injury. What do you think about injury and how does injury affect yourself?

Resources

1. Where/who/what do you turn to for help if you don't feel right (physically/psychologically)?
2. Is your family/close friend one of your resources?
3. Have you ever tried to do anything specific to overcome or decrease your level of stress and distress?
4. What are your leisure activities for daily life?
5. How do you define your leisure time?
6. How much time do you spend on leisure?


APPENDIX C

IRB APPROVAL FORM



Office of Research Integrity and Assurance

To: Ariel Rodriguez

From: *per* Mark Roosa, Chair 
Soc Beh IRB

Date: 04/27/2011

Committee Action: **Exemption Granted**

IRB Action Date: 04/27/2011

IRB Protocol #: 1104006343

Study Title: The Relationship of Stress, Resources and Distress among Taiwanese Professional Tennis Players

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX D

INFORMATION LETTER

The Relationship of Stress, Resources and Distress among Taiwanese Professional Tennis Players

Date

Dear Participants:

I am a graduate student under the direction of Professor Ariel Rodriguez in the College of Public Programs at Arizona State University, and I am conducting a research study to investigate the relationship of stress, resources, and distress among Taiwanese professional tennis players.

I am inviting your participation, participants being contacted between one to three times. Email, phone, and/or video may be used for the interviews. However, only verbal and written data will be collected and analyzed. We are anticipating that phone/video contact will last between 30 to 60 minutes. You have the right not to answer any question, and to stop the interview at any time.

Your participation in this study is voluntary. You can skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. Lastly, you must be 18 or older to participate in the study.

Although there is no direct benefit to your participation, the possible benefit to your participation is we will learn more about how Taiwanese tennis players deal with adversities they encounter in their profession.

Your responses will be confidential. The results of this study may be used in reports, presentations, or publications but your name will not be used. In order to maintain confidentiality of your records, pseudonyms will be used during data analysis. After data analysis, all recorded data will be destroyed.

If you have any questions concerning the research study, please contact the research team at: Dr. Ariel Rodriguez, (602) 496-1057, ariel.rodriguez@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788. Please let me know if you wish to be part of the study.

Sincerely,
Wei-Hsia Hung