# Perceived Motivational Climate of Female Table Tennis Athletes

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**Abstract**: The study determined the perceived motivational climate among the eight Women's National Collegiate Athletic Association (WNCAA) table tennis school teams and its athletes according to skill level: beginner, intermediate, and advanced. Respondents included 37 athletes in the 2007-2008 season (3 beginners, 24 intermediate and 10 advanced athletes) who completed the 33-item Perceived Motivational Climate Sport Questionnaire – 2 (Newton, Duda, & Yin, 2000) on a 5-point Likert scale. They consist of 90% of the total population in the eight participating school teams. This was utilized to assess the degree of perception to which their respective team's motivational climate is characterized in terms of the two higher-order scales/constructs, labeled the perceived mastery climate and perceived performance climate (Newton, et.al., 2000; Reinboth & Duda, 2006). Descriptive statistics and ANOVA were used to analyze the results. Responses indicated that among all the athletes of the WNCAA school teams and across all skill levels, the identified perception of the prevailing motivational climate was more of a mastery climate which indicated a very high mean scale description of 4.52 than of a performance climate which obtained a 2.645 moderate mean score. The advanced level and intermediate level athletes' degree on their perception of the motivational climate registered a Very High Mastery Climate – Moderate Performance Climate; whereas in the beginner's level, athletes registered a Very High Mastery Climate – Low Performance Climate. It also revealed that there were no significant differences that emerged between the perceived motivational climate of the athletes among all school teams and across all skill levels, thus we accept the null hypotheses. It clearly indicated that the school teams' motivational climate set by the coach and peers valued encouragement, effort/improvement, and that athletes under their care reported having a more positive experience with their sport and team structure. While improving and refining a player's technical and tactical skill is crucial for enhancing the quality of play, it is the improvement of the psychological aspect and an established motivational climate that would eventually allow her to elevate her play to a much higher level.

**Keywords:** Perceived motivational climate, Mastery climate, Performance climate

## 1. INTRODUCTION

### 1.1 Background of the Study

Why are there a growing number of young female participants in sport despite the rigorous physical tasks and sacrifices they are expected to undergo? What keeps them motivated to work hard even though they acquire less privileges and benefits from sport participation? How could their involvement in a team be sustained or maintained?

In sport settings these days, to realize and maximize one's potential -physically and psychologically – proper psychological capacity and motivation may be the edge that an athlete needs. The degree to which an athlete develops his/her psychological abilities is what ultimately determines the level at which that player can perform or exploit his/her skills at optimal level.

Results of a growing body of research stressed the significance of an athlete's motivation to achieve in order to maximize, as well as, enrich his/her sport experience. The motivation to perform as an athlete is vitally important to the success of that individual and/or the team. It is worthwhile therefore to discover how these sporting experiences may be maximized.

Studies have shown that an important social environmental influence assumed to nurture the fundamental needs of athletes is the motivational climate created by the coach (Ntoumanis, 2001; Reinboth, Duda, & Ntoumanis, 2004; Sarrazin, Guillet, & Cury, 2001, cited in Reinboth & Duda, 2006). The team climate established in the playing context, emphasizes the role of the coach and the athletes - which constitutes the whole 'team' --- and eventually would make one's 'taking part' fruitful. In the same manner, this composition – coach and players – make up the whole teaching-learning process wherein their better interaction would eventually be a significant factor in achieving success. The coach is in a highly strategic position. What he/she puts into the interaction (demonstration of learning skills, designing practice sessions, grouping athletes, giving recognition, evaluating performance, sharing their

authority, and shaping the sport setting) can greatly influence the participation – or 'engagement' of his/her athletes, wherein applied skills will be determined by the coach himself.

The premise of the research is that the nature of an individual's sport experience, in this case the sport environment, and how he/she interprets these experiences, influence the degree to which the motivational climates are perceived. It is, therefore, important to know and understand the differing motivational climates so that a more potent program of developing female competitors could be achieved.

It is also important to note that the suggestion being promoted is that everyone in the team must be directed towards the success of the team. If an individual player improves with regards to skill level and performance, the team improves, and for that reason the "team" gets better. This is the most satisfying undertaking that the coach and athletes will have. On the other hand, nothing destroys team unity more than an uneven application of team rules by coaches which could trigger reactions or responses among players that would adversely affect their performance as a team. Players are quick to sense when coaches have favorites or play favorites. The bond that holds teammates together begins to collapse. When a coach gives special treatment to the star and when the star takes advantage of this special treatment, such unfairness will definitely be an expression of disrespect for the other players and the team itself. The degree of unification of the group and positive climate requires that even if the members of the team differ in skill level and come from different backgrounds, their responsibility to the team is one and the same.

It is for this intention that the authors seek to explore and examine the perceived motivational climate of the female table tennis athletes competing in the team event of the 38th Women's National Collegiate Athletic Association (WNCAA) tournament. This athletic organization caters only to women's sports in which a number of prestigious Metro Manila women's colleges have participated in since the 1970's. This organization constantly strives to ensure quality sport experience or a setting to exhibit female excellence from the grade school level to the collegiate ranks.

The time has come to highlight the sport or define a positive outcome from a female perspective and to impact female athletes in a special way. Knowing their perceptions, competencies and values will enable the WNCAA organization, institution or school, through the athletic director, to plan and cater proactively to their needs and full development. It is essential for the coaching staff, school personnel and the WNCAA organizers to know how its female athletes perceive their respective team climate --- a key to discover why these female table tennis athletes perform as they do, and thus, give everyone an insight into carrying out the most effective means to boost their athletic performance and behavior.

Moreover, the purpose of this study is to lay the groundwork for table tennis coaches, trainers, and fellow athletes in the WNCAA, to look beyond the development of sport-specific skills as their prime mode of training and to provide them with information that would serve as valuable basis for setting the proper motivational climate that would enable female table tennis athletes to reach their top-level competence.

**Statement of the Problem**

This study aimed to examine the perceived motivational climate of collegiate female table tennis athletes as set by the coach and teammates during the team's athletic season. Specifically, this study:

(1) identified the perceived motivational climate of the athletes among all the WNCAA table tennis school teams.
(2) determined the perceived motivational climate of the athletes according to skill level:

a. Beginner

b. Intermediate

c. Advanced

The following null hypotheses presented in this study were:

$H_1$ - There is no significant difference between the perceived motivational climates among all the WNCAA table tennis school teams.

$H_2$ – There is no significant difference between the perceived motivational

climates of the WNCAA table tennis athletes across all skill levels:

a. Beginner

b. Intermediate

c. Advanced

### 1.2 Significance of the Study

Having an established and secure motivational climate is critical to the overall development of an athlete and these situation al factors - such as the team's motivational c limate, coach's and teammates' support - can influence the quality of the athletes' sport ex perience and well-being. The level at which the athlete's skill is performed is directly related to the level of the athlete's total conditioning – may it be physical or psychological.

There are no shortcuts to developing one's potential but by establishing the proper situational goal structure or climate, a team/athlete can reach top-level performance. It is important, therefore, to elicit one's perceived motivational climate and to know what would most likely be the prominent climate characterized by the team in general. These include team and/or athlete problems like dropout from the sport, declining participation or interest, and burnout which are compounded by the weak interrelationship among members of the team and coaching practices/strategies that may inhibit athletes from reaching their potential. Problems like these have to be avoided or be detected early on and thus focusing their efforts toward cultivating a team climate (environment) that could effectively lead to the attainment of their mission or goal. By having an acquired knowledge base about a team's motivational profile, this may, however, greatly help them overcome the widespread concern regarding issues of motivation at an early onset of participation.

The value of interaction, cooperation, hard work, enjoyment, effort and improvement are fostered, while high and low-level skills are cultivated at the same time through motivational activities. Hence, it is in this context that the findings of this study may be used to identify factors that may be related to the athletic performance of the present WNCAA table tennis athletes and which may improve the quality of the teams by providing the athletes with the best possible motivational climate.

Motivation as an important factor in the development of an athlete has always been an area of interest to the researcher. Being part of an educational community and the sport setting, as well as a coach handling one of the WNCAA table tennis teams, setting the proper environment that would elicit positive results from players and enable them to reach their top level performance is a continuous challenge. Embarking on this study will, altogether provide the researchers, as well as, the school institution, coaching staff, and the WNCAA with valuable insights for planning, formulating, and implementing new program policies and specific interventional strategies that will cater to the needs of WNCAA female table tennis athletes. Hopefully these findings may eventually contribute to the development of the sport in the local setting.

Of major concern in this present study is whether the findings of past researches regarding sport programs that are regarded as team sports (e.g., basketball, soccer, football, etc.) is also true with those considered as individual sport programs, such as the focus of this research, which is table tennis.

This study focused on an individual sport that has a 'team' event as part of the tournament category. The Table Tennis Team Event has been the category applied in competitions like the Women's National College Athletic Association (WNCAA). This is the category or event wherein the team effort consists of the sum of the individual efforts. The singles and doubles events are conducted and the results shall be combined and accumulated. To the authors' knowledge, any literature or research similar to this study's direction – an individual sport focusing on an athlete's skill level - is very limited. It is therefore highly interesting to examine the kind of training environment provided WNCAA female table tennis athletes with and whether this leads to better skill execution.

### 1.3 Scope and Limitations of the Study

This study was confined to female table tennis athletes participating in the 38$^{th}$ WNCAA tournament. The WNCAA table tennis athletes were well-represented as respondents of the study. Thirty-seven (37) out of forty-one (41) athletes which is 90% of the total population took part in the study.

The motivational climate in their respective teams as perceived by the respondents was determined by means of employing the most recent structured version, Perceived Motivational Climate in Sport Questionnaire – 2 (Newton, Duda, & Yin, 2000). This questionnaire is a self-report tool designed to characterize the team's perceived motivational climate. Two dimensions or scales of motivational climate, labeled, the perceived mastery climate and perceived performance climate, were analyzed in this study. Likewise, the probable link or influence of these two motivational climate constructs to the athlete's skill level in the current year – beginner, intermediate, and advanced, were examined and assessed in this study.

Due to the absence of a standard criteria for the assessment of table tennis skill, determining the skill level classification of the athletes was made by the coach, the researcher and/or test administrator (both skilled in table tennis and teaching/coaching table tennis), and was perceived by the athletes themselves. The simple skill level characteristics (see 1.5 Definition of Terms) were also enumerated and explained. The simple skill level/ability characteristics was expressed according to skill development, number of years of playing experience and the present credentials in terms of competition experience and general tournament results.

The relationship between mastery climate and performance climate was no longer explored since Pearson Product moment correlations revealed that according to previous research by others (e.g., Dahdal et al., 1998; Newton & Duda, 1999; Newton et al., 2000; Reinboth & Duda, 2006; Heuze et al., 2006) the two perceived scales of the motivational climate have no significant correlation, therefore, outlining their independence.

### 1.5 Definition of Terms

1. Motivation - the fire that drives people to succeed; conceptually defined as the collection of causes that engage someone to an activity, and the process that energizes and directs behavior (Wakefield, 1996, as cited in Mowling et al., 2004).

2. Motivational climate – the goal structure of the sport environment created by significant others (e.g., coaches, parents) which is deemed task and/or ego involving (Duda & Whitehead, 1998); refers to the individual's perception of environmental cues or factors and can ultimately affect an individual's state of task involvement (Roberts, 2001).

3. Mastery climate – a motivational climate which is characterized by an emphasis on effort, improvement, members' contributions to the team's efforts, and helping each other learn and foster task involvement (Ames, 1992b; Ames & Archer, 1988)

4. Performance climate – a motivational climate emphasizes interpersonal competition, rivalrous social exchanges, normative feedback, public evaluation, and social comparison and induces ego involvement (Ames, 1992b; Ames & Archer, 1988).

5. Skill level – refers to the:

a. beginner level - a skill level wherein a table tennis athlete has had no previous competitive experience from a recreational level but has qualified to be included in the college varsity level

b. intermediate level – a skill level wherein an athlete participated in school meets, district as well as regional meets since grade school or high school; at least a year of college varsity level experience

c. advanced level - a skill level wherein an athlete participated in school, district, regional and national events; a national athlete (training pool or a member of the present team); undergoing higher level of training and competition

## 2. METHODOLOGY

The descriptive method of research was used in the study. The variables investigated were the perceived motivational climate (mastery-involving and performance-involving climates) of the WNCAA table tennis athletes and their skill levels,

classified as beginner, intermediate, and advanced.

**2.1 Conceptual Framework**

The conceptual model of this study is illustrated below in Figure 1.

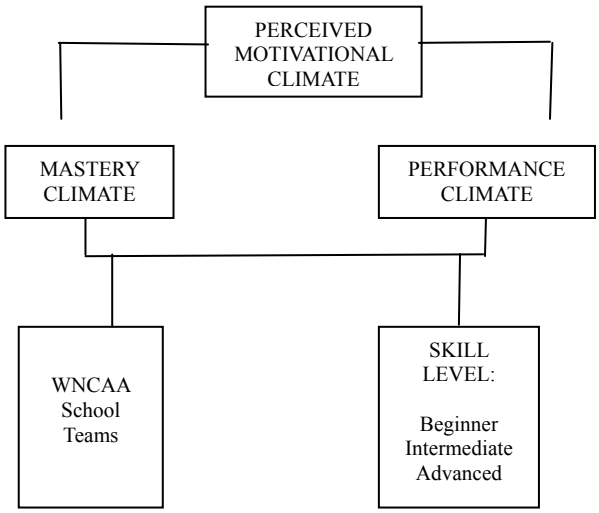


Figure 1 - Model of Conceptual Framework of the study

The frames present the two high order constructs of the perceived motivational climate – the mastery climate and the performance climate –and its implication to the skill level (beginner, intermediate, advanced level) of the female table tennis athlete.

**2.2 Participants**

The participants of the study are composed of thirty seven (37), out of the forty-one (41) or 90% of the total population, who are eligible collegiate female table tennis athletes, coming from the eight colleges competing in the school year 2007-2008 Women's National Collegiate Athletic Association (WNCAA) tournament. The WNCAA is a voluntary, non profit schools-based athletic organization that caters only to women's sports in which a number of prestigious Metro Manila women's colleges have participated in since the 1970's.

The respondents have been with the team a nd with their coach for a minimum of six mo nths, have competed in at least one major tou rnament, numerous tune-up games, thus allowing sufficient time for a coach-athlete relationship to develop ( Jowett and Ntoumanis, 2004) and, as well as the establis hment of a motivational climate. According to some researchers (Miller & Roberts, 2004 ; Reinboth and Duda, 2006), the perceived motivational climate is likely to be established within 2–6 weeks.

Based on the developed criteria for determining the skill level of the participants (see 1.5 Definition of Terms), there were three (3) beginners, twenty four (24) intermediate and ten (10) advanced level female athletes. These beginners (n=3) became involved or were represented in this study so that their respective schools could meet the demands of completing a team line-up. These schools state that they have limited number of students trying out for the team and in so doing have to submit a lineup from these prospective trainees. All the participating schools have at least one or more intermediate level athletes, whereas the advanced level athletes (10) are only coming from two participating schools.

The questionnaires' initial portion included a request for athletes to answer truthfully and guaranteed them anonymity of responses. The researchers requested for the respondents to indicate their age, year level, as well as sought for the coaches' assessment in determining the skill level of their athletes based on the simple criteria or level characteristics.

Due to the absence of a standardized criteria or tool for the assessment of table tennis athletes' skill performance, the researchers, together with the coaches, identified the characteristics of the athletes in determining their skill level classification. The simple level characteristics are determined by the athlete's skill development, number of years playing experience and the present credentials in terms of competition experience and general tournament results.

**2.3 Instrumentation**

To find out the athletes' perception of the prominent motivational climate goal structures created by the coach and co-players, the researchers opted to utilize and apply the updated and improved version, the Perceived Motivational Climate in Sport Questionnaire – 2 (PMCSQ-2) developed by

Newton, Duda and Chi (2000) and consists of 33 items. This has also been examined, validated, and used as a reliable questionnaire to a quantity of studies (i.e. Balaguer et al., 1997; Cervell´o & Santos-Rosa, 2000; M.Fry and M. Newton, 2003; M. Reinboth, & J.L. Duda, 2006; J. Murcia, E. Gimeno and D. Coll, 2007;). It is a structured tool and a sport specific measure of the perceived motivational climate operating on sport teams, which is labeled as mastery climate (task-involving) and performance climate (ego-involving).

The female athletes' perceptions of motivational climate in their respective table tennis programs have been determined by this 33–item measure drawn from the most recent Perceived Motivational Climate Sport Questionnaire – 2 (PMCSQ-2; Newton et al., 2000). It consists of 17 mastery-involving and 16 performance-involving climate items (see Table 1).

In accomplishing the questionnaire, the respondents were asked to think about how they felt about playing for their particular team over the course of the season. Each item is preceded by the stem 'On this team…' and responses were indicated by using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The participants' response on each scale was averaged to yield a scale score. Mean scale scores were computed. The greater or higher their scores are on each construct, the greater is their perception of that climate.

TABLE 1 – Perceived Motivational Climate in Sport Questionnaire– 2 Items for Mastery Climate and Performance Climate (Newton, Duda, & Chi, 2000)

| **Items for Mastery-Focused Climate** (17 items) | **Items for Performance-Focused Climate** (16 items) |
|---|---|
| 1. On this team, the coach wants us to try new skills | 1. On this team, the coach gets mad when a player makes mistakes. |
| 2. On this team, each player contributes in some important way. | 2. On this team, the coach gives most of his or her attention to the stars. |
| 3. On this team, the coach believes that all of us are crucial to the success of the team. | 3. On this team, the coach praises players only when they outplay teammates. |
| 4. On this team, players feel good when they try their best. | 4. On this team, the coach thinks only the starters contribute to the success of the team. |
| 5. On this team, players at all skill levels have an important role on the team. | 5. On this team, players are taken out of a game for mistakes. |
| 6. On this team, players help each other learn. | 6. On this team, players are encouraged to outplay the other players. |
| 7. On this team, the coach makes sure players improve on skills that they're not good at. | 7. On this team, the coach has his or her own favorites. |
| 8. On this team, players feel successful when they improve. | 8. On this team, the coach yells at players for messing up. |
| 9. On this team, each player has an important role. | 9. On this team, only the players with the best 'stats' get praise. |
| 10. On this team, trying hard is rewarded. | 10. On this team, players are punished when they make a mistake. |
| 11. On this team, the coach encourages players to help each other. | 11. On this team, the coach makes it clear who he or she thinks are the best players. |
| 12. On this team, the coach emphasizes always trying your best. | 12. On this team, players are 'psyched' when they do better than their teammates in a game. |
| 13. On this team, players are encouraged to work on their weaknesses. | 13. On this team, if you want to play in a game you must be one of the best players. |
| 14. On this team, the focus is to improve each game/practice. | 14. On this team, only the top players 'get noticed' by the coach. |
| 15. On this team, the players really 'work together' as a team. | 15. On this team, players are afraid to make mistakes. |
| 16. On this team, each player feels as if they are an important team member. | 16. On this team, the coach favors some players more than others. |
| 17. On this team, the players help each other to get better and excel. | |

### 2.4 Procedure

Consent was obtained from the respective school's College Athletics Coordinator (CAC) to conduct this study. The CAC signed an endorsement letter to the team coaches, trainers, and athletes to encourage them to respond to the questionnaire. Request for participation was made to coaches, trainers, and athletes of the different WNCAA table tennis teams for athletic season 2007-2008.

Upon verbal agreement with the coaches or trainers and the athletes, the researchers briefly mentioned the purpose of the study to the team. The questionnaires were administered by the researchers. The respondents were encouraged to answer the questionnaire with honesty and to clarify statement items if there was any difficulty understanding them. They were also informed that their involvement in the study is voluntary and that the results will be treated with utmost confidentiality.

Questionnaires were administered to all official WNCAA table tennis enlisted eligible athletes at the start of their respective practice sessions, which took about 15-25 minutes to accomplish. The instrument (PMCSQ-2) was administered to the teams on March 14-15, 2008 or before the end of the 38$^{th}$ WNCAA athletic season to ensure that a motivational climate was established. The researchers chose to administer the instrument near the end of this season, because we believe that within the particular level (collegiate), the participants are relatively changing their perceptions depending on the coach-created environment and/or which part of the training season (off-season, pre-season, or competition phase).

Upon completion, the accomplished questionnaires were collected and placed in an envelope and were classified per team. The results were tallied and tabulated for statistical treatment and analysis.

### 2.6 Statistical Treatment of Data

The descriptive statistics – mean and standard deviations – was used to determine the perceived motivational climate of the respondents.

The scores were then grouped and categorized accordingly to characterize the level or scale of the perceived performance and mastery climates of the respondents, as shown in Table 2. The range of scores was computed by subtracting the lowest scale (which is 1) from the highest scale (that is, 5) and dividing the difference by the number of selected group intervals, which is 5. Thus, an interval of 0.8 was obtained for each weighted mean score group.

Table 2 – Perceived Motivational Climate Description of Mean Scores

| Description of Perceived Motivational Climate | Range of Scores |
|---|---|
| Very High | 4.2 – 5 |
| High | 3.4 – 4.19 |
| Moderate | 2.6 – 3.39 |
| Low | 1.80 – 2.59 |
| Very Low | 1 – 1.79 |

The analysis of variance (ANOVA) was used in determining if there was an important difference on the perceived motivation climate among the WNCAA table tennis school teams, as well as, among the different skill levels of athletes (i.e., according to beginner, intermediate and advanced skill levels). Computations for the descriptive statistics and ANOVA were run through the Statistical Package for Social Science (SPSS).

## 3. PRESENTATION AND DISCUSSION OF RESULT

This chapter presents the data gathered through the research instrument used in the study.

The data gathered through the questionnaire were presented in the following section which tackles the answer to each of the research hypotheses, mainly focusing on the Perceived Motivational Climate among the WNCAA table tennis school teams and across all skill levels.

The following figures (Figure 2 and Figure 3), displayed the frequency on the distribution of responses according to the perceived mastery and performance climate, its mean and standard deviation among all

the athletes in the eight WNCAA school teams.

In Figure 2 it can be gleaned that among the thirty seven respondents, nine of them, which is the highest frequency, obtained a total weighted mean score of (reflect value) on the Mastery Climate. This shows that the perceived mastery climate of these respondents is very high.

It likewise showed a total mean score of 4.5199 with a standard deviation of 0.36248. This strongly suggests that the respondents among the eight WNCAA school teams perceive a strong or a very high mastery climate (see Table 3 for the Description of Mean Score).

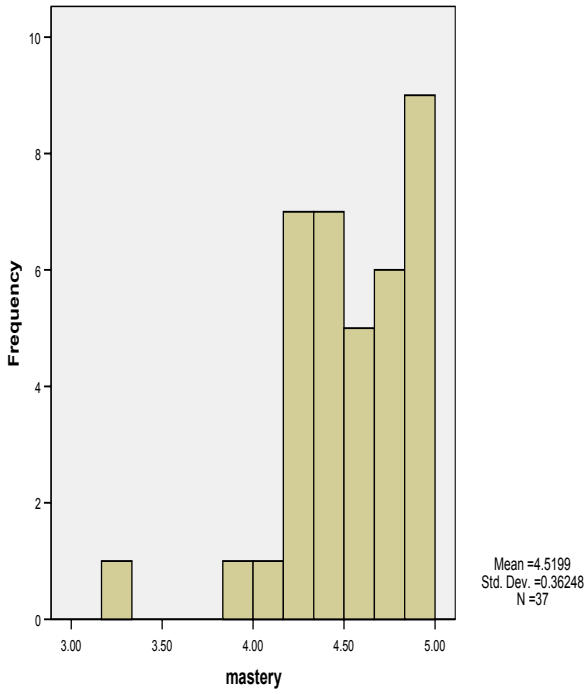


Figure 2 – Frequency of responses for the Mastery Climate Item Scales

Figure 3 likewise presents the frequency of responses for the perceived performance climate item scales. It displayed that among the thirty seven (37) respondents of the WNCAA school teams, the highest number, which was eleven (11), perceived the performance climate and their respective teams as moderate. Meanwhile, the least number of responses generated very low and high scores. The total mean score of 2.6453 likewise indicated that the degree of the perceived performance climate among the respondents from the eight WNCAA school teams is moderate.

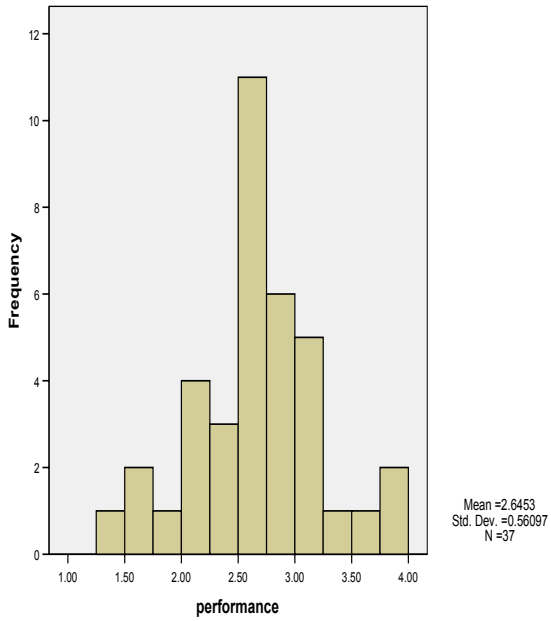


Figure 3 - Frequency of responses for the Performance Climate Item Scales

Table 3 presents the corresponding mean scores, standard deviations and description of the perceived motivational climate of the thirty seven athletes grouped according to the WNCAA table tennis school teams.

Table 3- Perceived Motivational Climate of Respondents by School

| School | N | Perceived Motivational Climate | | | |
|---|---|---|---|---|---|
| | | Mastery | | Performance | |
| | | Mean | Desc. | Mean | Desc. |
| 1 | 7 | 4.36 | VHigh | 2.53 | Low |
| 2 | 6 | 4.89 | VHigh | 3.2 | Mod |
| 3 | 4 | 4.65 | VHigh | 2.53 | Low |
| 4 | 4 | 4.62 | VHigh | 2.58 | Low |
| 5 | 5 | 4.38 | VHigh | 2.71 | Mod |
| 6 | 4 | 4.53 | VHigh | 2.89 | Mod |
| 7 | 3 | 4.14 | High | 1.77 | Vlow |
| 8 | 4 | 4.46 | VHigh | 2.53 | Low |
| Total/Ave. | 37 | 4.52 | VHigh | 2.645 | Mod |

In the data gathered half of the school teams obtained a low mean score description in the perceived performance climate while three school teams had a moderate mean score. Only one school team (School 7, n=3) got a result of a very low perceived

performance climate. Among the three moderate scores of the school teams one, which is School 2 (n=6), got the highest value of 3.2 whereas School 7 registered the lowest mean score of 1.77.

In the perceived mastery climate seven out of eight school teams revealed a result of a very high mean score description ranging from 4.36 to 4.89. Only one school team (School 7) scored 4.14 which is equivalent to a high description. The highest mean score (4.89) is obtained by School 2 and the lowest mean score (4.14) is registered by School 7.

Looking closely at Table 3, it can also be noted that Schools 2 and 7 garnered the highest and lowest weighted mean scores respectively in both of the two high order scales of the perceived motivational climate namely performance and mastery climate.

Still based on Table 3, the general mean is 2.645 for the perceived performance climate with a moderate mean score description while in the mastery climate it presented a very high mean score description with a general weighted mean of 4.52.

Results showed that the athletes scored moderate in performance climate score and very high in the mastery climate. From all eight schools, the study revealed that the predominantly perceived motivational climate of athletes was a perceived mastery-involved climate.

The results therefore suggested that the majority of the athletes among all the school teams view that their coach and teammates gave importance to personal improvement and progress through high effort and mastery in playing table tennis or task execution in a way that they experienced more satisfaction from skill learning and accomplishing tasks as bases for recognitions and rewards as well as for them to achieve competence and success. As perceived by most of the respondents, the performance climate situations show a lesser prominence, where comparisons of performance and ability with peers were seldom observed.

As suggested in the literature concerning the female gender in relation to the goal perspectives and eventually their motivational climate, previous research (e.g., Duda, Chi, Newton, Walling & Catley, 1995; Duda, Olson, & Templin, 1991; Newton & Duda, 1993; Chie-der et al., 2003; Reinboth & Duda, 2006) indicated that the present group of female athletes were strongly task-oriented, recorded higher scores in perceived mastery climate than male players and reported higher perceptions of task-involving coach and peer motivational climates.

As suggested in previous research (e.g., Duda, Chi, Newton, Walling & Catley, 1995; Duda, Olson, & Templin, 1991; Newton & Duda, 1993; Chieder et. al., 2003; Reinboth & Duda, 2006), female athletes are strongly mastery-involving and/ or task-oriented rather than performance-involving or ego-oriented. The above results support previous findings that female athletes have the tendency to have higher perceptions of mastery or task-involving coach together with peer (teammates) motivational climate and lower scores in perceptions of performance or ego-involving coach and peer motivational climate.

Results from Table 4 indicated the sample size, means, standard deviations and score descriptions among the WNCAA table tennis athletes by skill level that was according to beginner, intermediate, and advanced levels.

Table 4 - Perceived Motivational Climate of Respondents by Skill Level

| Skill Level | N | Perceived Motivational Climate | | | |
|---|---|---|---|---|---|
| | | Mastery | | Performance | |
| | | Mean | Desc | Mean | Desc |
| Beginner | 3 | 4.627 | VHigh | 2.583 | Low |
| Intermediate | 24 | 4.488 | VHigh | 2.62 | Mod |
| Advanced | 10 | 4.565 | VHigh | 2.725 | Mod |
| Total/Ave. | 37 | 4.52 | VHigh | 2.645 | Mod |

In the beginner's skill level (n=3), the perceived performance climate has a low mean score description with a weighted mean of 2.583. In the mastery climate, the beginner's mean is 4.627 which obtained a

very high mean score description. The beginner's level sample size was not excluded from the statistical treatment due to the fact that it is still part of the total population, represented by two schools, being conducted in the study. Subsequently, in the intermediate level (n=24), it shows that the perceived performance climate's weighted mean is 2.62 which is described to be moderate. On the other hand, the data had a very high score description of the perceived mastery climate at which it obtained 4.488 mean score. In the third skill level which is the advanced level (n=10), the weighted mean obtained for the perceived performance climate is 2.725 described to be of a moderate score result and a very high mean score of 4.565 for the perceived mastery climate.

The pattern of results of the mean scale score obtained in the performance climate is expected – that the order of skill level would be the advanced level as the highest score, followed by the intermediate and then lastly the beginner's level. This indicated that as revealed by Seifriz et al., (1992), the higher the skill level or competence the more likely they would be associated with the performance-involved setting. Surprisingly however, looking at Table 4 concerning the mastery climate mean scale score among the three skill levels, though it is assumed and expected that the beginner's level would garner the highest mean scale score since they are the ones who receive more of the step-by-step instruction and error correction, it is unexpected that the intermediate level would register a lower mean scale score (4.488) compared to the score of the advanced level (4.565). The pattern had a slight shift in the expected order on the outcome of the mean scale scores in the mastery climate. Two main explanations have been offered to account for the result: (1) it may be due to a larger sample size or that the bulk of the respondents is at the intermediate level (n = 24) versus the advanced level respondents (n = 10) and beginner's level (n=3) ; and (2) since the intermediate level are in a transition, with the basic skills already attained and quickly aspiring to go up a level higher, when complex movements and skills are increased there is that tendency for them to have difficulty in making big adjustments in receiving more tactical instruction and precise information that would result to performance worry and tension (Newton & Duda, 2000). It is thus speculated that this would occur only at an advanced level as it is in this level that most of the practice time is spent on the cognitive and tactical aspect of the sport.

In summary across all skill levels, the general weighted mean of the performance climate was described to be of a moderate mean score description with a result of 2.645, while the perceived mastery climate's general weighted mean was described to be very high obtaining a score of 4.52.

In accordance with previous studies, research reveals that having a moderate to high in both motivational climates - performance and mastery - is more likely to have positive motivational responses compared to having a profile that is low in perceived performance as well as a mastery climate (Dorobantu and Biddle, 1997; Goudas et al., 1994; Roberts et al., 1996; Standage and Treasure, 2002). According to the abovementioned researchers, this is also the model that has the second most positive outcome. The first indicating a high description in both performance and mastery climates.

Results also revealed that across all skill levels, the predominantly perceived motivational climate of the athletes demonstrated a mastery-involved climate since it obtained a very high mean scale score. Among the three skill levels only the beginner's level had a description of having a low weighted mean scale score on the perceived performance climate and had the highest mean score in the mastery climate. This result was assumed and that it is congruent to the study made by Castaneda and Gray (2007) stating that the optimal focus of attention for highly skilled batters is one that does not disrupt procedural knowledge and permits attention to the perceptual effect of the action, whereas the optimal focus of attention for less-skilled batters is one that allows attention to the step-by-step execution of the swing.

Balaguer, Duda, Atienza and Mayo (2002) found similar results when examining the relationship of perceived motivational climate created by the coach and dispositional goal orientation with team member's perceptions of their skill improvement, and their satisfaction with their personal and the teams level of play, competitive results, coach's instruction and attention among elite female handball

players.

The results wherein the advanced level group obtained a very high mean scale description of a perceived mastery climate and a moderately high score on perceived performance climate is congruent with other findings or thus explains the findings of the study according to Ericsson et al., (1993), Treasure (1997, cited in Dahdal et al.,1998) together with an extended study by Simon and Chase's (1973) work that it is due to deliberate practice theory that those with high skill level possess a quality that has high levels of effort and attention in executing tasks for the reason that they spend more time and attention during training and in which requires high level of training or practice

However, to most of the related studies (Seifriz, Duda and Chi, 1992; Dahdal et al., 1998; Castaneda and Gray, 2007), the present results do not necessarily suggest or greatly support the same findings which basically states that, perceptions of a performance climate (ego-involving) have been linked to the view that one must have inherently high ability to be successful and/or would foster greater levels of perceived competence among athletes. Their indications likewise suggested that those who perceive themselves as being highly competent adopted a mentality associated with competitive outcomes, rather than skill improvement. This rather does not hold true to the results of the present study since the athletes across all skill levels particularly the advanced level displayed a high amount of mastery-involving climate characteristics and a lesser prominence on the performance-involving climate and this may be due also to the very nature of the respondents being females. Over and over again there is much literature stating that females do not tend to demonstrate their ability in competitive situations, unlike males (White & Duda, 1994, cited from Petherick & Weigand, 2002).

On the other hand, findings from related studies still hold meaning in one aspect wherein based on the descriptive statistical results of the present study, although the participants across all skill levels registered a predominantly perceived mastery motivational climate, it is still to be noted and expected that among the skill levels, the advanced level registered the highest mean score (moderate description) in the performance climate indicating that as revealed by Seifriz et al., (1992), the higher the skill level or competence the more likely they would be associated with the performance-involved setting; and also in the study conducted by Ames (1992) stating that a performance-oriented climate, with its emphasis upon social comparison, high ability children would seem to thrive in either environment and in which, conversely, can be particularly harmful to low ability youth (Ames, 1992).

Table 5 shows the mean and standard deviation of the respondents in all skill levels.

Table 5 - SPSS

**Descriptives**

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound | | |
| performance | Beginner | 3 | 2.5833 | .28183 | .16271 | 1.8832 | 3.2834 | 2.31 | 2.88 |
| | Intermediate | 24 | 2.6198 | .56803 | .11595 | 2.3799 | 2.8597 | 1.56 | 3.94 |
| | Advanced | 10 | 2.7250 | .63751 | .20160 | 2.2690 | 3.1810 | 1.44 | 3.56 |
| | Total | 37 | 2.6453 | .56097 | .09222 | 2.4582 | 2.8323 | 1.44 | 3.94 |
| mastery | Beginner | 3 | 4.6275 | .34467 | .19900 | 3.7712 | 5.4837 | 4.24 | 4.88 |
| | Intermediate | 24 | 4.4877 | .36611 | .07473 | 4.3331 | 4.6423 | 3.29 | 5.00 |
| | Advanced | 10 | 4.5647 | .38443 | .12157 | 4.2897 | 4.8397 | 3.94 | 5.00 |
| | Total | 37 | 4.5199 | .36248 | .05959 | 4.3990 | 4.6407 | 3.29 | 5.00 |

The analysis using ANOVA (SPSS) was also utilized. While in Table 6, it revealed that there is not enough evidence to conclude that the athletes from three different skill levels have significantly different perceived performance motivational climate scores, $F(2,34) = 0.137$, $p = 0.872$, whereas the perceived mastery motivational climate scores obtained an $F(2, 34) = 0.291$, $p = 0.749$.

Table 6 - SPSS

**ANOVA**

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| performance | Between Groups | .091 | 2 | .045 | .137 | .872 |
| | Within Groups | 11.238 | 34 | .331 | | |
| | Total | 11.329 | 36 | | | |
| mastery | Between Groups | .080 | 2 | .040 | .291 | .749 |
| | Within Groups | 4.651 | 34 | .137 | | |
| | Total | 4.730 | 36 | | | |

In view of that, the outcome of results may be mainly due to the different or varying number of respondents in the study. Therefore, there is not enough evidence to conclude (not enough to substantiate the evidence) or to say that there is a significant difference between the perceived motivational climate of athletes among all the WNCAA school teams and across all skill levels. Thereby, the results of the present study on the perceived motivational climate of the WNCAA table tennis athletes does not show any disparity in skill level and thus

still indicated the importance or emphasis of a mastery climate in promoting positive psychological outcomes in the table tennis teams.

In this study it was able to confirm that the hypothesis was true, that there were no significant differences among all the WNCAA table tennis school teams pertaining to their perceived motivational climate and similarly as with across the three skill levels. Indeed as hypothesized, no coaches and teammates emphasized a performance-involved climate in their teams.

Moreover, the findings of this study would add insight in identifying factors that may be related to the performance of the WNCAA table tennis athlete by providing them with enhanced psychological skills training and appropriate team climate.

## 4. SUMMARY, CONCLUSION AND RECOMMENDATION

### 4.1 Summary of Findings

This research sought to identify the perceived motivational climate among the eight WNCAA table tennis school team athletes and to determine the perceived motivational climate of athletes across all skill levels namely, beginner, intermediate, and advanced level. To come up with the output, this study concentrated on the two high order constructs of the perceived motivational climate namely, the mastery and performance climates. From all eight school teams, the findings of this study showed that the predominantly perceived motivational climate of athletes was a perceived mastery-involved climate. The gathered data revealed that the athletes (n = 37) across all skill levels showed low to moderate mean scale score in performance climate score and very high in the mastery climate.

Results in this study were able to confirm that the hypothesis is true, in which there was no significant difference among all the WNCAA table tennis school teams pertaining to their perceived motivational climate and consequently same as with the three skill levels which proved that their perceived motivational climate have no significant differences at all. Indeed as hypothesized, no coaches and teammates emphasized a performance-involved climate in their teams.

Our findings confirm our hypothesis that the coaches and teammates' support may significantly contribute to the team performance of female table tennis athletes and the motivational climate specifically, mastery-involved climate, adapted by the coach and the teammates.

According to achievement goal theory (Nicholls, 1989; Ames, 1992; Dweck, 1999), individuals are more likely to be optimally motivated when task-involved. In sport, for example, this adaptive pattern is predictable whether the athlete perceives skill level to be high, or realizes that his or her competence is inferior. Why should this be? The answer is that when task-involved, concern is with improving and giving one's all. Regardless of ability level, athletes should try to identify areas in which they can develop. Moreover, when task-involved, athletes judge their level of competence in terms of their own progress and effort. Consequently, an athlete's sense of confidence is more buoyant when task-involved (cited from Cockerill, 2002).

The researcher found these results very intensely motivating in the current work as a coach in the different areas in table tennis. By knowing the findings of the study, it was well thought of that such team motivational climate created by the coach enrich and encourage the quality of athletes' sport experience and well-being. On the side of the psychological development of the athlete, the researcher believes that the coach plays an important role in providing a mastery-involved climate emphasizing effort and improvement in the learning process, value of interaction, hardwork, cooperation, enjoyment, and sustainability in the sport shall be fostered. As pointed out by the studies of Smith and Smoll (1996) and Baker et al. (2003), they indicated that the quality and quantity of training and environmental factors would influence the acquisition of sport proficiency (or sport expertise). This evidently indicates that these two elements are crucial predictors of attainment. These researchers also added that adequate coaching is also one important possession of resource and that the coach is an important social agent in the sport activities.

Clearly, as thus emphasized by Fry & Newton (2003), that when young players perceive a highly task-involving motivational climate, their experience seems to be greatly enhanced, and perceptions of an

ego-involving climate may turn young players away from a program. This is what the study would aim to discover and find out, that the female table tennis athletes would be able to continue and sustain their involvement or participation in their sport as well as having a fruitful sporting experience (feel valued as individuals beyond their athletic roles and responsibilities) by emphasizing a mastery-involved climate in their respective school teams. In such a perceived motivational climate, if there is an improvement in the individual, therefore, the team in general gets better and performs well.

Furthermore, the findings of this study would provide a meaningful implication to coaches and athletes alike that in identifying factors that may be related to a better over-all performance and development of the WNCAA athlete, either physically and more so of the psychological skill aspect, would enforce a team climate that is deemed necessary.

## 4.2 Conclusion

Based on the findings of the study the following conclusions were drawn:

1. The identified perceived motivational climate of the female table tennis athletes among all WNCAA school teams is predominantly mastery-involved.

2. The degree of the perceived motivational climate deemed as more prominent by the WNCAA table tennis athletes across all skill levels is a mastery-involved climate indicating a very high mean scale.

3. The responses of the athletes in the two constructs according to the advanced and intermediate levels' degree on their perception of the motivational climate is Very High Mastery Climate – Moderate Performance Climate; whereas in the beginner's level, registered a Very High Mastery Climate – Low Performance Climate.

4. The hypothesis that there was no significant difference between the perceived motivational climate among all the WNCAA table tennis school teams was accepted and confirmed.

5. In this study, it confirmed and accepted that there was no significant difference between the perceived motivational climate of the WNCAA table tennis athletes across all skill levels specifically in the beginner, intermediate, and advanced level.

It is notable that the capacity of the coach (since the availability of coaching is one essential resource and is proven that it can significantly influence the ability of the athletes to engage in high quality training or competitive/positive sport setting or for acquiring success in performance) to enforce or devise an environment that fosters the most favorable learning thus becomes one of the most significant keys to an athlete's development and eventually achieving success. In view of the fact that most of the respondents or the bulk percentage of the respondents (n = 24) classified as having an intermediate skill level, it is therefore imperative that the coaches in these teams reinforce more of the mastery-involved climate. It is also important to understand the role of the coach in supporting the participants' development as true athletes and that these results therefore extend Balaguer et al.'s (2002) findings by demonstrating that perceived motivational climate is a source of athletes' perceptions of their team properties.

As indicated by the results, since the school teams registered a high mastery climate, coaches with beginners or intermediate athletes should focus on the proper fundamentals of the sport or primarily technical instruction and later build up on the tactical side of the sport by means of reinforcing more of the mastery climate which is the more suitable setting to utilize this. Likewise, it is also for this reason that for the female athletes to continue participation in this sport having a high degree of support, equal attention, enthusiasm and better facilitation skills is preferable to this level. These qualifications and strategies be applied to beginners and intermediate levels, a different level of facilitation skills would be also required to athletes in advanced levels or even the elite level since being highly skilled requires a balance of both climates or should be high on both is the more adaptive pattern.

Having said this, clearly, both the practice structure and the domain specific-knowledge

of coaches are highly relevant to the progression, sustained participation/involvement, and development of the female table tennis athletes in the sport. Thus, nurturing these athletes in these skill levels is imperative far more beyond the technical expertise, advancement without high psychological abilities, and tactical nature of the sport.

The results are, however, only based on a homogenous sample in nature. It only applies to the female table tennis athletes competing in the team event of the WNCAA. These are athletes playing an individual sport and who are in a team performing interdependent tasks. This would correspond with Newton et al. (2000), Seifriz et al. (1992) and Walling et al.'s (1993) suggestions that the more athletes perceive their coaches as emphasizing cooperation between teammates, individual members' contributions to the team's efforts, the more they perceive their team as a whole centered on the group's task even if they perform their individual events. The present results, though, may not be generalized to other competitive levels and male teams.

Results obtained clearly indicate that the school team's motivational climate created by the coach and teammates valued encouragement and positive reinforcement, that athletes under their care would report having more positive experiences with their sport and teammates, having more of technical instruction rather than offering harsh feedback, then they would more likely stay in the program, have lower levels of anxiety or pressure/tension, and report a high level of self-esteem for the coming athletic season. Consequently, this will increase the likelihood that the female athletes' participation in table tennis will be sustained and enhanced over time.

### 4.3 Recommendations

In the light of the conclusions drawn, the following are recommended:

1. The data set was quite small and needs to be expanded. Having a larger sample size and cross-section of various age groups (with equal distribution) is suggested in order to establish an expanded knowledge base and concern regarding issues of motivation.
2. Investigate and examine further the interaction between the Mastery Climate and Performance Climate employing the two-way ANOVA theory.
3. It would be important for future research to interview, survey, and observe (a qualitative study appropriate to this type of study) a coach, an individual player or a team to obtain a better picture of the actual motivational climate in a team setting at different phases of the athletic season.
4. This study should be replicated with athletes of both genders (since this study only examined a female athletes' perception of the motivational climate of the coach and teammates created in the table tennis teams competing only in the WNCAA); different sport disciplines (individual or team sport); several skill levels (possessing higher vs. lower degrees of ability); and from different training phases of a particular sport program, in order to determine, in a more reliable way, the interaction and interplay that exists between the motivational variables.
5. Likewise, it could also be directed towards later on designing a developmental program that intensifies and improves not only the physical aspect of the sport but also the psychological skill training suitable for the WNCAA table tennis teams.
6. It would seem that additional research should also be required to understand some other factors or concerns which influence differing motivational climate of athletes or the coach's perception themselves. A coach having to answer or respond to a different or their own version of a questionnaire pertaining to their preferred motivational climate.

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