The Influence of Coaching Leadership Styles on Player Motivation in Chinese Handball Teams

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Abstract: Handball is a dynamic team sport that emphasizes agility, strategy, and collective coordination, making it a valuable component programs worldwide of university sports. In recent years, Chinese universities have increasingly embraced handball, recognizing its dual benefits: enhancing students' physical fitness and fostering engagement through teamwork and competitive spirit. This study examines the correlational relationship between coaching leadership styles and player motivation among Chinese university handball athletes. The researcher utilized the descriptive comparative – correlational research design. Athlete demographics of one hundred seventeen handball-respondents —sex, age, program and grade level—are analyzed in relation to perceptions of coaching leadership across five dimensions: tactical and strategic decision making, technical instruction, psychological support, team management, and adaptability. Findings highlight how demographic profiles are associated with athletes' assessment of coaching leadership styles and how these perceptions correspond with motivational drivers such as goal setting, personal achievement, skill development, recognition, and self-regulation. By positioning leadership and motivation as interdependent constructs, the study reveals how distinct coaching approaches may be linked to athletes' desire to develop expertise, excel in competition, and sustain enjoyment in the sport. Results contribute to the literature on sport psychology and leadership by clarifying the extent to which coaching behaviors correlate with motivational outcomes in a university athletic context. The study's implications extend to the design of a motivational coaching and leadership development program tailored for Chinese handball athletes, fostering a supportive climate that enhances both performance and well-being.

Keywords: Coaching Leadership, Athlete Motivation, Correlational Study, Handball, University Athletes, Sport Psychology.

I. INTRODUCTION

Handball is one such team sport, and its dynamic nature – agility, strategy, and teamwork – has made it very popular in sports programs offered in many universities globally. Among the sports in Chinese universities, handball has gained increasing popularity as a significant sport with physical and student engagement benefits. Nevertheless, the state of handball in college is mixed, as several colleges and universities develop competitive programs, while others face low participation, and inadequate funding (Chen, 2022). Given its potential, however, handball remains underdeveloped in some regions of China because of inadequate infrastructure, lesser media exposure, and general unawareness about the sport (Zhang, 2023). Although there has been some improvement in recent years, especially in institutions with strong physical education departments, the sport still faces challenges due to low participation rates, and difficulty in identifying potential talent.

The time commitment required to balance academics and training schedules is one of the major challenges of playing handball in Chinese universities for athletes and students. Impression is given to many students that participation in sports like handball involves a lot of time and effort, hence they are avoided during peak study times. Li and Zhou (2023) found that students in China reported that the burden of academic workload and insufficient facilities contribute to students not participating in extra-curricular sport. In addition, handball may also involve a certain level of fitness/physical condition, including agility and strength and being part of a team which not every student can achieve easily. Hence, sports like basketball and football, which are more prominent and regarded to be less physically exhausting, tend to attract larger student populations. And, though there are attempts to encourage more participation in several universities using awareness programs, skill clinics and even the inclusion of handball in the general curriculum — not all of them have been notably successful either.

The environmental coaching founded on the overall performance of Chinese university athletes Coaching is important because it is one of the factors affecting how a player is motivated and developed (Wang & Liu, 2024) and the leadership styles used by the coaches play an important role in this (Roussel, 2022). In contrast, some universities in China have embraced contemporary coaching philosophies that reflect changes to player-centered methodologies, whereas others rely on outdated, dictatorial approaches that may not be conducive for developing players and teams. Leadership dictates how an athlete may respond to the training, achieve goals and develop the focus on how to succeed in competitive sports. One example is transformational leadership, where coaches provide vision and encouragement, personal attention, and an emphasis on growing as a person, which has been associated with increased motivation and improved athlete performance (Jiang, 2024). In contrast, autocratic leadership, which involves a more directive instruction with limited input from the player, may suppress the player's creativity and motivation, contributing to lower satisfaction and performance.

However, there is a lack of research on the effect of coaching leadership styles on the motivation of handball players in Chinese universities. In contrast, previous research has primarily investigated higher profile sports (e.g., basketball or soccer) and little is known about how various coaching methods affect the motivation of athletes in less common sports (e.g., in this case, handball) (Wang, 2023). Indeed, although many studies have focused on an overall coaching behavior relationship with athlete satisfaction, less attention has been paid to handball athletes and even less in Chinese universities. While existing studies have focused on how coaching styles impact motivation, few have investigated the subject among student-athletes in team sports specifically, leaving a gap that this research aims to address by attempting to discover which methods of coaching are most effective for promoting good player motivation.

The significance of this research study resides within its prospective findings of replicable practices that have the potential to change the trends that are required to gain maximum interest in handball at university level. Understanding the impact of leadership styles on goal-setting, skill acquisition, personal achievement and self-regulation can help universities design better coaching methods that contribute to motivation and engagement. But these results may also help university sports programs create a better training environment that promotes participation in handball and fosters commitment to the sport despite other demands on student time, like academic pressure or other competing interests. Further, with the increasing usage of sports as a means for holistic student development, this study will add to the existing body of literature about how universities can utilize this additional dynamic for the benefit of student co-curricular experiences, ensuring an all-round education about teamwork and leadership.

However, little is known about the dynamics of working expectations of coaching leadership and motivation based on the background of handball in Chinese university settings. Although sports motivation is an extensively researched field in general, there is limited research on handball itself and the relationship between coaching leadership styles and player motivation. That said, such a gap is most evident when comparing other cultural phenomena such as the influence of Chinese cultural values vs. The majority of the influx of Chinese students comes from China, where educational pressures and methodologies may influence both coaching methods as well as the athletes' responses to those methods. Moreover, previous researchers have examined sports motivation and leadership styles predominantly in Western contexts as coaching approaches vary greatly in China compared to those in the West. It will therefore be one of the initial studies to investigate these issues specifically within the context of Chinese university handball, adding to the existing body of knowledge in the international domain of sports psychology and coaching dynamics.

In a nutshell, while previous studies have investigated the effects of different coaching leadership styles on players' performance and motivation, the relevant literature on university handball teams in China is scarce. Ultimately, through this research, by understanding how varied coaching behaviors influence their motivation and performance, it will provide important insights for developing more effective coaching strategies and improving the overall performance of handball programs in Chinese universities. The results will help coaches and athletic departments alike, as the results provide a better picture of how leadership styles can create a motivated, high-performing team.

➤ *Statement of the Problem*
This study aims to determine the influence of coaching leadership styles on player motivation handball athletes in China.

➢ *Specifically, this Study Sought Answers to the Following Questions*

• What is the Profile of the Respondents in Terms of?

✓ Sex
✓ Age
✓ Program
✓ Grade Level

• What is the Assessment of the Handball -Athletes on the Coaching Leadership Styles of their Coaches in Terms of:

✓ Tactical/Strategic
✓ Technical
✓ Psychological
✓ Team Management
✓ Adaptability

• Is there a significant difference in the assessment of the handball athletes- respondents on the coaching styles of their coaches when they are grouped according to profile?
• What is the assessment of the handball athletes-respondents of their level of motivation in Chinese handball in terms of:

✓ Goal Setting
✓ Personal achievement
✓ Skill Development
✓ Recognition
✓ Self-regulation

• Is there a significant difference in the assessment of the handball athletes-respondents of their level of motivation in Chinese handball when they are grouped according to profile?
• Is there a significant relationship between the assessment of the handball athletes-respondents on the coaching leadership style of their coaches and their level of motivation in Chinese handball?
• Based on the results of the study, what motivational coaching and leadership development program can be designed?

➢ *Hypotheses*

• Ho1: There is no significant difference in the assessment of the handball athletes-respondents on the coaching styles of their coaches when they are grouped according to profile?

• Ho2: There is no significant difference in the assessment of the handball athletes- respondents on their level of motivation in Chinese handball when they are grouped according to profile?

• Ho3: There is no significant relationship between the assessment of the handball athletes-respondents on the coaching leadership style of their coaches and their level of motivation in Chinese handball.

➢ *Theoretical Framework*

This study is anchored theoretically on Self-Determination Theory (SDT) as developed by Edward L. Deci and Richard M. Ryan in 1985. Self-Determination Theory (or SDT) is a psychological theory of human motivation that emphasizes the importance of three core psychological needs — autonomy, competence, and relatedness. Autonomy is the degree to which an individual is able to make their own choices and have control over their own actions, competence is the need to feel effective and perform only within a range of outcomes, and relatedness is the desire to be connected and experience caring for others. This theory separates intrinsic motivation — that which is fostered by enjoyment and self-improvement — from extrinsic motivation, which is informed by outside rewards, pressures, or restrictions.

This theory, related to the motivation of players, gives a solid basis to the role of autonomy, competence, and relatedness. Encourage Autonomy: Coaches who use a democratic leadership style allow players' to play a role in decision-making, which builds intrinsic motivation and a long-term commitment to the sport. On the other hand, an autocratic coaching style, which relies on strict control and decision-making, can stifle player autonomy and lead to decreased intrinsic motivation. Athletes are more motivated when they are confident in their abilities or skill set (i.e. in competence and ability) therefore coaches that increase competence through skill development, constructive feedback, and performance evaluation also increases player motivation. This component of SDT resonates with transformational leadership, which emphasizes individual growth and skill development, thereby enhancing the chance for athletes to master something and can lead them to a long-term engagement.

Furthermore, relatedness is an important aspect of understanding player motivation, as coaches that connect well with their teams instill a sense of belonging that compels players to commit more effort. Having leadership styles that are supportive and participative also bonds this environment as they feel valued and want to execute. Conversely, transactional or laissez-faire leadership styles that reward/punish solely or offer little direction, can stifle a sportsperson's drive to succeed through passive disengagement or a feeling of lack of purpose. With the SDT perspective, this study will discuss the effects of different coaching leadership styles on the motivational experiences of handball players in China.

Employing Self-Determination Theory, this study aims to measure the association between coaching leadership styles and player motivation utilizing validated measurement instruments, like the Sport Motivation Scale (SMS-28). It will be, therefore, an empirical insight into the way autonomy, competence, and relatedness characters get intrinsic and extrinsic motivation for handball players. Such information is important to create evidence-based coaching programs that positively impact player performance, long-term involvement in handball, and leadership skills in handball coaching. This theoretical approach will help deepen the knowledge about

how coaching leadership styles can be adjusted to not only the competitive handball context, but also the psychological needs and motivational mechanisms of the athletes.
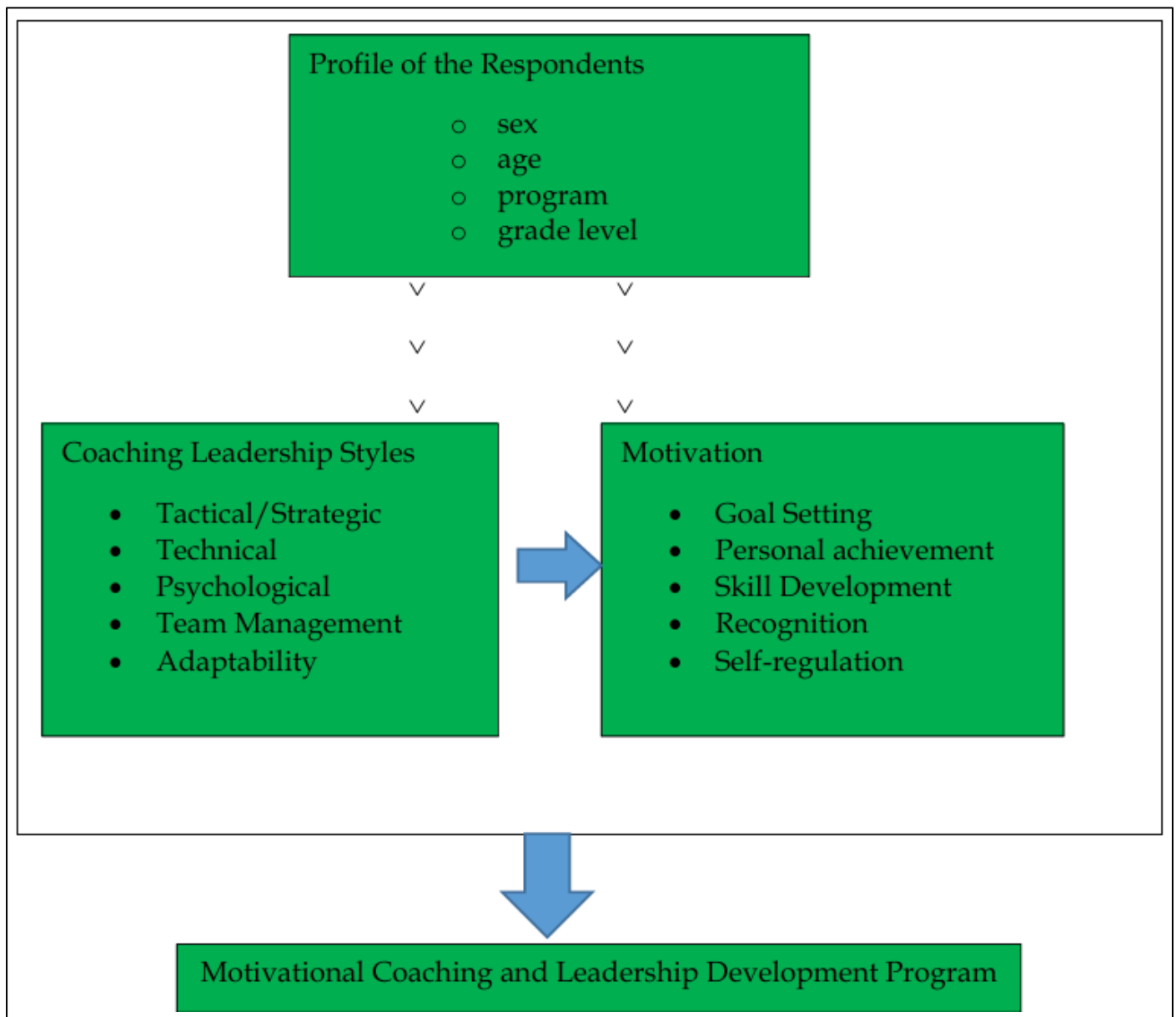
➤ *Research Paradigm*

Fig 1 Research Paradigm

This study explores the relationship between the demographic background of handball athletes—specifically sex, age, program, and grade level—and their perceptions of coaching leadership. The focus is on how athletes' profiles may be associated with the way they evaluate coaches across key leadership dimensions: tactical and strategic decision making, technical instruction, psychological support, team management, and adaptability.

By examining these perceptions, the study seeks to uncover whether athletes who differ in demographic characteristics tend to view certain coaching styles as more effective in enhancing performance and fostering enjoyment in the game.

In parallel, the study investigates how motivation among handball athletes is linked to factors such as goal setting, sense of personal achievement, skill development, recognition, and self-regulation. It considers whether variations in motivation are correlated with athletes' demographic classifications, and whether these motivational drivers align with or diverge from their perceptions of coaching leadership.

Ultimately, the study positions coaching leadership and player motivation as interrelated constructs. It aims to reveal how distinct coaching approaches may correspond with athletes' desire to develop expertise and excel, thereby highlighting the potential of leadership styles to cultivate both performance and enjoyment. The findings will inform the

design of a motivational coaching and leadership development program tailored to Chinese university handball players, fostering a climate where effective leadership and athlete motivation reinforce one another.

➤ *Significance of the Study*

This study will be deemed significant to the following group of people below.

- Handball Coaches - The research will allow coaches to gain valuable insights into the leadership styles that best motivate and improve players' performance. Understanding the impact of different coaching approaches on athletes and using this knowledge to adapt coaching strategies can create a more positive and productive training environment.
- Handball Players – The results will provide a basis for coaches to improve their techniques according to the needs of their motives in order to achieve more successful training. The findings will help design a more conducive attitude and motivational space for players to maximize their potential.
- Sports Program Directors and Administrators — University and institutional sports leaders can utilize the findings in the study to create policies and training programs to improve coaching and athlete motivation and, ultimately, the university's handball programs.
- Physical Education and Sports Science Researchers – This research mainly adds a keystone to the academic body of sports leadership, motivation, and coaching psychology by paving the way for more comprehensive studies on the way that athletic motivation and coaching methodologies are enacted and received among team sports.
- National and Regional Handball Organizations – The National Handball Federation as well as regional Handball Associations in China can base their coaching education and certification programs on the findings provided in the study, as well as ensure that leadership styles proposed follow best practices when it comes to athlete development.
- Future Researchers – And future scholars and students who are interested in sports psychology, coaching leadership, and athlete motivation may find this study helpful as a reference that might lead to greater exploration in this subject matter in any handball or team sport.

➤ *Scope and Delimitations*

The purpose of the study was to examine the influence of coaching leadership styles on the motivation of Chinese university handball players-respondents. In particular, it aims to analyze how the players judge their coaches in terms of tactical and strategic decision-making, technical guidance, psychological support, team management, and adaptability. It also inspects player motivation based on goal setting, personal achievement, skill development, recognition, and self-regulation. Also, the research aims to verify if there are significant differences in the analysis of coaching leadership styles and motivation by the classification of players by their

profile (sex, course and level). In addition, it examines the relationship of coaching leadership styles to player motivation and results in a programme for motivational coaching and leadership development based on the findings. This study uses a descriptive-comparative-correlational design. The descriptive section seeks to develop a profile of the respondents and analyse coaching leadership styles and player motivation. The comparative method looks at differences across player assessments when the same players are grouped by demographics. The correlational analysis identifies relationships between coaching leadership styles and player motivation. Data will be collected through questionnaires. Data will be analyzed using statistical techniques, including descriptive statistics, t-test, ANOVA, and correlation analysis. Five Chinese universities with established teams (i.e., beach, field and indoor handball) will participate in the study. The selected institutions serve as a unique sample among university-level native handball programs, allowing findings to be generalized to all levels of competitive play.

Although this study gives valuable information about the association between coaching leadership styles and player motivation, it is not without limitations. First, it is only focused on a university handball teams, so maybe it's not so generalized to professionals or youth level handball programs. Second, the study is based on selfreported data elements, which may be sensitive to response bias. Finally, external factors which can potentially affect player motivation, including team dynamics, an institution's support for its athletes and access to quality training facilities, are not part of the study's key analysis. Nonetheless, this study intends to make meaningful contribution for sports coaching and athlete motivation for Chinese university handball programs.

➤ *Definition of Terms*

The following important words are defined operationally.

- Adaptability –refers to the coach's ability to adjust training methods, strategies, and leadership approaches based on the team's needs, individual player abilities, and changing game situations. It highlights the coach's flexibility in responding to challenges and optimizing player performance.

➤ *Chinese Handball Teams-*

- Coaching Leadership Styles –refers to the approach and behaviors exhibited by handball coaches in guiding and motivating players, including tactical instruction, technical training, psychological support, and team management. It encompasses leadership types such as autocratic, democratic, transformational, and transactional styles, which influence player development and motivation.
- Goal Setting –refers to the process by which players and coaches establish specific, measurable, and achievable performance objectives in training and competition. It

includes short-term and long-term goals aimed at improving individual and team performance.

➤ *Handball-*

- Motivation –refers to the internal and external factors that drive handball players to engage in training, perform in matches, and improve their skills. It includes intrinsic motivation (personal enjoyment, passion for the sport) and extrinsic motivation (rewards, recognition, and competitive success).
- Personal Achievement –refers to the individual success and progress experienced by handball players in their performance, skill mastery, and competitive accomplishments. It measures how players perceive their improvement and contribution to the team.

➤ *Player Motivation-*

- Psychological –refers to the mental and emotional support provided by the coach to enhance player confidence, focus, and resilience. This includes stress management, motivation techniques, mental toughness development, and handling performance pressure in competitive handball.
- Recognition –refers to the acknowledgment and appreciation of a player's efforts, skills, and contributions to the team. This may come in the form of awards, verbal praise, leadership opportunities, or selection for key matches.
- Self-Regulation –refers to the player's ability to control their emotions, maintain focus, and stay disciplined in training and competition. It includes goal-directed behavior, emotional control, and self-motivation to enhance performance.
- Skill Development –refers to the continuous improvement of technical, tactical, and physical abilities in handball. It involves structured training, practice drills, and coaching interventions aimed at enhancing player competencies.
- Tactical/Strategic –refers to the coach's ability to develop and implement game strategies that enhance team performance. It includes offensive and defensive tactics, ingame decision-making, and adaptability to opponents' strategies to optimize match outcomes.
- Team Management –refers to the coach's ability to organize and lead the handball team effectively, ensuring discipline, teamwork, communication, and player coordination. It involves handling conflicts, player rotations, training schedules, and maintaining team cohesion.
- Technical –refers to the fundamental handball skills that coaches emphasize during training, including passing, shooting, dribbling, blocking, and positioning. It represents the level of skill execution expected from players under the coach's guidance.

II. METHODOLOGY

This section describes the scientific, methodical, and accurate process the researcher applied to design, conduct, and evaluate a study. Research methodology includes various components, including the research design that describes the overall structure and framework of the study. The gathering techniques explain how information was obtained from respondents or relevant sources. Data analysis methods refer to the organization, interpretation, and fusion of collected data in order to obtain relevant and useful insights.

➤ *Research Design*

A descriptive-comparative-correlational research design was used for this study as it explored the effect of coaching leadership styles on the motivation of handball athletes – respondents in selected universities in China. Descriptive study was carried out to systematically map the profile of the respondents according to sex, program, and year level and to evaluate the evaluation of athletes in relation to the leadership styles of their coaches and their motivation level. Descriptive research refers to a type of research that aims to systematically describe a phenomenon without manipulating variables (Creswell, 2014), which made it a suitable method for understanding the characteristics and experiences of the athletes in this study. This particular approach lays the groundwork for subsequent analysis by yielding a simple representation of coaching leadership styles and player motivation.

The second aspect is comparative because it aimed to detect the aspects of perceptions of coaching leadership styles and motivation levels by grouping respondents based on the demographic characteristics. Comparative research enables us to scrutinize differences among groups (Fraenkel & Wallen, 2018), which is a tool for identifying whether coaching leadership and motivation manifest differently for male and female athletes, different courses of study, or different class levels. The analysis of these distinctions could help the study indicate the way in which coaching strategies can be customized for different athlete cohorts.

Finally, the correlational aspect of the study investigates potential relationships between coaching leadership styles and handball- athletes' motivation. This establishes a correlational research identifying the nature of relationship between two or more variables (McMillan & Schumacher, 2010). The objective of this study is to examine if the coach leadership styles are significantly associated with increased (or decreased) motivation of university handball players. By establishing these relationships, and considering them in relation to player motivation and performance, evidence-based coaching strategies can be utilized to improve outcomes.

Thus, in this study descriptive-comparative-correlational research design was a suitable research design because it has a holistic explanation in examination of coaching leadership styles and athlete motivation in organization. Results: Descriptive analysis of student-athletes - perception of their coaches and their motivation levels The comparative approach assesses whether these perceptions are different among groups, while the correlational analysis reveals significant relationships between coaching behaviors and player motivation. This research approach lead to a

rigorous evidence-based and statistical investigative study that revealed how coaching leadership affected the motivation of university handball players in China.

➢ *Research Locale*

• *Anhui University*

Anhui University, the only key comprehensive provincial institution, is located in Hefei, the beautiful capital city of Anhui Province. Founded in 1928 in Anqing and moved to Hefei in 1958, Anhui University is now a developing higher institution supported by the government under the State "211 Project". Anhui University covers an area of about 207 hectares. Its library has a collection of more than 1.75 million books and over 7,000

Chinese and foreign periodicals, and it is equipped with a campus computer network. With beautiful scenery, the environment of the campus is very fine. Anhui University consists of 26 schools, 77 undergraduate specialties, 148 master degree programs, 50 Ph.D. programs, and 5 Postdoctoral Research Station. The University has a teaching staff of more than 1500, among whom more than 800 are professors or associate professors. The student population totals more than 31,000, among whom 21000 are undergraduate students and 6000 are postgraduate students. The university attaches great importance to the international exchange and cooperation. Now, it has entered into agreements with 95 overseas institutions. It began to accept foreign students in 1980. It is authorized by the Ministry of Education to enroll international students who enjoy Chinese government's scholarships. It was designated by Overseas Chinese Affairs Office under the State council the Teaching Base for Chinese Language and Culture in 2000.Students from more than 40 countries have been admitted to study at the university. International students are warmly welcomed to study and conduct research at Anhui University!

• *Hefei University of Technology*

Established in 1945, it has grown to become one of the leading universities in China, particularly known for its engineering and technology programs. As a national key university, it is directly administered by the Ministry of Education of China. In the 2025 QS World University Rankings, HFUT ranks 790th in the world.

• *Anhui Normal University*

Founded in 1928, Anhui Normal University is a provincial governed key normal university and a comprehensive university with full support granted by the provincial government. The university is one of the earliest batched institutions of higher education appointed by the State to receive Chinese government scholarship international students, and one of the first national educational bases of Chinese language and culture for foreign students and the promotion base of international Chinese. Besides, it has been honored as one of " the Ten Most Beautiful Chinese Universities".

• *Hefei Normal University*

Hefei Normal University is located in Hefei, China. Founded in 1955, it is a public fulltime comprehensive university. HFNU has three campuses in Hefei, Sanxiaokou Campus, Jinxiu Campus and Binhu Campus, covering an area of 1,295 mu (79.6 ha or 196.6 acre). The total value of teaching and research instruments and equipment is 153 million yuan, and 1.12 million books are printed. HFNU now has 15 schools, 57 undergraduate programs and 10 graduate programs, with a total of 15,700 full-time students. HFNU now has one provincial key discipline, eight characteristic majors, 16 excellent courses and nine large-scale online open courses (MOOC).

There are 792 full-time teachers, including 80 senior teachers and 236 associate teachers. There are two national-level candidates for the project, one Wanjiang Scholar lecturing professor, one Wanjiang Scholar distinguished professor, five second-level professors, 12 provincial academic and technical leaders and reserve candidates, one provincial young talents in the field of publicity and culture, 14 provincial famous teachers, and 18 provincial new teachers.

➢ *Sampling Technique*

Sample respondents of the study were selected from four Chinese universities in Anhui Province with well-established handball teams, using stratified random sampling techniques for this study. Stratified sampling is a probability sampling method in which the population is classified into homogeneous subgroups or "strata" based on certain characteristics before randomly selecting participants from each stratum (Creswell, 2014). By selecting a sample that captures differences between individuals of interest, these methods can deliver an accurate representation of the population as a whole - an especially effective strategy in studies with diverse respondents.

Stratified sampling is crucial because it enhances the accuracy and generalizability of results. This allows the study to include adequate representation based on the different demographics categories (sex, age, program, and grade level) within the population. This approach mitigates sampling bias and maximizes the chances that the outcomes reflect the true characteristics of the target population (Fraenkel & Wallen, 2018), thus contributing to the generalizability of the target population.

This study utilized stratified sampling to ensure balanced representation of respondents from various universities in Anhui Province-, sex,age, program and grade level, resulting in a comprehensive and reliable understanding of the influence of coaching leadership styles on handball player's motivations.

Table 1 Sampling Technique

Universities	Population- Handball players	Sample respondents – males and females
School A	51	Males=13 Females=9
School B	60	Males=15 Females=13
School C	79	Males=18 Females=15
School D	80	Males=18 Females=16
Total	270	Males=64 Females=53 Total=117

➤ *Instrumentation*

The primary instrument was a researcher-made survey questionnaire for data collection. Thus, the questionnaire was tailored to capture the different dimensions of the study variables — coaching leadership styles and player's motivation — for this population. Format The survey was structured format through a Likert scale. The questionnaire is divided into four main sections: 1 Socio-demographic profile (sex, age, program, and year level); 2 Assessment of coaching leadership styles (teaching/game and strategic decision making, technical, psychological, team and adaptable); and finally the assessment of handball-player's motivation (goal setting, personal achievement, skills development, recognition, and self-regulation).

The survey questionnaire had undergone validation process, to make sure that the it is valid and reliable. To evaluate the content validity and relevance of the questionnaire for the target respondents, it was examined by a panel of experts specializing in sports coaching, educational research and sports psychology. Their input helped to fine-tune the wording, structure, and general relevance of the survey items. This validation process is crucial to ensure the questionnaire effectively assesses coaching leadership styles and handball - player motivation.

The survey questionnaire was validated by experts and then pilot-tested on a subgroup of handball players not involved in the main study. This pilot test checked whether the survey is clear, if response formats are adequately answered and how easy the survey completes. The pilot test provided feedback used to adjust and modify the instrument to increase reliability while ensuring the instrument captures what was designed to capture. A refined questionnaire will subsequently be shared with the study's respondents in four universities across China.

Using a self-developed questionnaire validated by experts and pilot-tested during the study, the research assures appropriate, accurate, and consistent data collection on the effect of coaching leadership styles on players' motivation in university handball teams.

This process was highly structured and systematic, ensuring that relevant data is collected, which can then translate into useful insights to improve coaching strategies and enhance motivation among athletes in Chinese university handball programs.

Table 2 Reliability Analysis on the Assessment of the Handball Athletes on the Coaching Leadership Styles of their Coaches.

Dimensions	Alpha	Remarks
Tactical/Strategic	0.85	Good
Technical	0.87	Good
Psychological	0.88	Good
Team Management	0.81	Good
Adaptability	0.80	Good

Table 3 Reliability Analysis on the Assessment of the Handball Athletes on the Level of Motivation in Chinese Handball.

Dimensions	Alpha	Remarks
Goal Setting	0.83	Good
Personal Achievement	0.85	Good
Skill Development	0.88	Good
Recognition	0.86	Good
Self-regulation	0.82	Good

➤ *Data Gathering Procedures*

A standardized method of data collection was used in this study to help ensure the accuracy, reliability and ethical integrity in studying the impact of coaching leadership styles on university handball players' motivation in China. The study started by developing a self-made survey questionnaire that was used as the main data collection tool. The questionnaire comprised three domains: demographic question to collect information related to one's demographic profile including sex, age, program and year level, Coaches' leadership styles measured tactical/strategic decision-making, technical guidance, psychological support, team management, and adaptability, Player motivational determinants assessed goal setting, personal achievement, skill development, recognition and self-regulation.

The questionnaire was also reviewed by a panel of experts in sports coaching, educational research and sports psychology in order to establish content validity. Experts will evaluate the clarity, relevance and the alignment of the survey items with the study's objectives (Creswell, 2014). The feedback received was used to improve the instrument to make sure that questions are clear, unbiased and accurately reflect the variables of interest. After the revision, the instrument was pilot tested in a small number of university-based handball players, separate from the final study. The internal consistency of the survey items was tested using pilot test of the submitted survey items (Fraenkel,

Wallen, & Hyun, 2019). Cronbach's alpha was utilized to analyze the reliability of the instrument and if necessary the instrument was modified based on the results of a pilot test.

Upon completion of the questionnaire, permission was sought from the university sports departments and coaching staff of the five selected Chinese universities with existing handball teams. Each head of the institution received a formal letter seeking permission to access the data, outlining the purpose of the research, methodology, and ethical considerations. Following approval, meeting was held with team coaches and coordinators about survey distribution and administration. The questionnaire was circulated in both hard copy and electronic format, depending on institutional policies and player availability. Hard copies were distributed to handball players during training sessions, and an additional link was available online for those who would prefer to access a survey physically. An informed consent form was provided to all participants in order to ensure that all individuals understand the voluntary nature of their participation, the information provided remained confidential, and they have the right to refuse to participate at any time (McMillan & Schumacher, 2010).

After data collection was finished, the researcher checked all the retrieved surveys for completeness, then encode them into a statistical software program (SPSS or similar tool) for analysis. In this process, the filtered responses was excluded for data accuracy and integrity purposes. Descriptive statistics was used to provide an overview of respondent profiles. Comparative analysis (t-tests and ANOVA) will be used to identify differences in coach leadership and motivation based on demographic factors, while correlational analysis (Pearson's r) will be used to investigate the relationship between coaching leadership styles and player motivation. These sensibly retrieved findings was then interpreted to define significant trends and relationships, which can be translated into concrete advice on how to improve the training methodologies of handball teams.

Finally, a motivational coaching and leadership development program developed for the clubs, based on the study results, to improve coaching as well as promote player's motivation. The results of the study was presented to the coaches, university sports administrators, and academic audiences through research presentations, and they was potentially result in publications in journals. This systematic data collection process allows the study to investigate how coaching leadership styles affect the motivation of university handball players in China in a valid, reliable, and ethical manner.

➤ *Statistical Treatment*

To ensure a comprehensive and accurate analysis of the data collected, this study employed descriptive, comparative, and correlational statistical methods. These techniques were used to analyze respondent profiles, assess differences in coaching leadership style and motivation based on demographic factors, and determine the relationship between coaching leadership styles and player motivation in university handball teams. The statistical treatment was conducted using Statistical Package for the Social Sciences (SPSS) or similar statistical software to ensure precision in computation and interpretation.

➤ *Descriptive Statistics*

Descriptive statistics was used to summarize and present the demographic profile of the respondents and their assessment of coaching leadership styles and motivation. The following measures was applied:

- Frequency and Percentage Distribution – Used to describe categorical variables such as sex, age, program and grade level, and playing level of the respondents. This helped in understanding the composition of the study participants.
- Mean and Standard Deviation – Used to analyze the overall trends in coaching leadership styles and player motivation, providing insights into the central tendencies and variations in responses. The mean represents the average rating of each variable, while the standard deviation indicates the level of variability in responses.

Table 4 Table of Interpretation for a 4-Point Likert Scale

Scales	Range	Verbal description/Interpretation
4	3.25 - 4.00	Strongly Agree/Very evident/Highly motivated
3	2.50 - 3.24	Agree/Evident/Motivated
2	1.75 - 2.49	Disagree/Less evident/Less motivated
1	1.00 - 1.74	Strongly Disagree/Not evident/Not motivated

III. COMPARATIVE ANALYSIS

➢ *Reliability Test*

To ensure that the survey questionnaire is internally consistent, Cronbach's Alpha will be computed for the different sections of the instrument. A Cronbach's alpha coefficient of 0.70 or higher will indicate acceptable reliability (Nunnally & Bernstein, 1994). This step is essential to validate the consistency and dependability of the measurement tool.

By employing these statistical methods, this study will provide a rigorous and data-driven analysis of how coaching leadership styles influence the motivation of university handball players in China. The use of descriptive, comparative, and correlational statistics will ensure that findings are both accurate and meaningful, contributing valuable insights to sports coaching and athlete motivation research.

➢ *Reliability Analysis*

According to Prous (2009), the reliability of the questionnaire pertains to its ability to measure something with minimal error. Reliability measures the proportion of the total variation that can be attributed to a particular latent factor in question. A highly reliable instrument can control and minimize the sources of measurement errors such as systematic error and pure random error. There are three ways to assess the reliability of an instrument - internal consistency, intra-observer reliability, and inter-observer reliability.

The center of this validation is all about internal consistency.

• *Cronbach's Alpha Coefficient for Internal Consistency*

Internal consistency pertains to the degree of the inter-relatedness of a set of items that intends to measure a single construct or latent variable (Tavakol, 2011). The most common measure of internal consistency is the Cronbach's alpha coefficient devised by Lee Cronbach in his published paper in 1951. An alpha coefficient is a number between 0 to 1 in which a number closer to 1 indicates a high level of internal consistency.

This study adopted the following scale to interpret the values of Cronbach's alpha coefficient. The internal consistency that is greater than 0.70 has an acceptable alpha value.

Table 5 Cronbach's Alpha Coefficient for Internal Consistency

Cronbach's Alpha		Internal Consistency
$\alpha > 0.9$		Excellent
0.8	$\leq \alpha < 0.9$	Good
0.7	$\leq \alpha < 0.8$	Acceptable
0.6	$\leq \alpha < 0.7$	Questionable
0.5	$\leq \alpha < 0.6$	Poor
$\alpha < 0.5$		Unacceptable

Table 6 Reliability Analysis on the Assessment of the Handball Athletes on the Coaching Leadership Styles of their Coaches.

Dimensions	Alpha	Remarks
Tactical/Strategic	0.85	Good
Technical	0.87	Good
Psychological	0.88	Good
Team Management	0.81	Good
Adaptability	0.80	Good

Table 7 Reliability Analysis on the Assessment of the Handball Athletes on the Level of Motivation in Chinese Handball.

Dimensions	Alpha	Remarks
Goal Setting	0.83	Good
Personal Achievement	0.85	Good
Skill Development	0.88	Good
Recognition	0.86	Good
Self-regulation	0.82	Good

➢ *Ethical Considerations*

• *Conflict of Interest*

The researcher declared impartiality and ensures the absence of any personal or professional affiliations that could influence the outcomes of this study on coaching leadership styles and player motivation in Chinese university handball teams. The goal was to conduct an unbiased evaluation of the relationship between coaching leadership approaches and athlete motivation, ensuring objectivity, transparency, and integrity throughout the research process.

• *Privacy and Confidentiality*

Participants' privacy and confidentiality was rigorously safeguarded. All responses were anonymized, and data were securely stored to prevent unauthorized access. No personally identifiable information was disclosed, ensuring that participants' responses remain confidential throughout the

study. Strict data protection measures was implemented in compliance with ethical research standards.

- *Informed Consent Process*

  Participation in this study was voluntary, and all respondents received comprehensive information about the study's objectives, procedures, potential risks, and benefits before participating. They had ample opportunity to ask questions and provided informed consent freely, without coercion or undue influence. The study respects autonomy and the rights of all participants by ensuring that their decision to participate is fully informed and voluntary.

- *Vulnerability and Possible Risks*

  Efforts was made to minimize any potential risks associated with participation. The study primarily involves survey responses, which pose minimal risk to participants. However, precautions were taken to ensure that participants feel comfortable sharing their perspectives on coaching leadership styles and motivation. Psychological risks, such as discomfort when evaluating coaches, was mitigated by assuring participants that their responses are confidential and did not impact their team standing or relationships with their coaches.

- *Recruitment*

  Transparent and inclusive recruitment methods was employed to ensure equitable access to participation for all eligible individuals. Participants were drawn from four universities in China with established handball teams, ensuring a diverse and representative sample.

  Recruitment was conducted through formal coordination with university sports departments, and participation was entirely voluntary.

- *Assent*

  As this study does not involve minors or vulnerable populations, assent procedures are not applicable.

- *Benefits and Compensation*

  While participation may not provide direct personal benefits, it will contribute valuable insights into coaching leadership styles and their impact on player motivation in Chinese university handball teams. The study aid in the development of evidence-based coaching strategies, benefiting both coaches and athletes. Any compensation or incentive provided fair and proportional to participants' contributions to the study, ensuring ethical research practices.

- *Incentives and Reimbursements*

  If participants incur any expenses related to their involvement in the study, such as transportation costs for in-person survey administration, they reimbursed as necessary to eliminate financial barriers to participation. The study aims to ensure fairness and accessibility in research participation by minimizing any undue burden on respondents.

- *Community Considerations*

  This study holds significant value for the university sports community, particularly in advancing coaching methodologies and motivational strategies in handball. By identifying effective leadership styles, the research provided scientific and practical recommendations for improving coaching approaches in Chinese universities. Findings contributed to enhancing team dynamics, player engagement, and overall performance, ultimately benefiting student-athletes, coaches, and university sports programs.

IV. RESULTS AND ANALYSIS

Table 8 Demographic Profile of the Respondents

Sex	Frequency	Percentage
Male	64	54.70
Female	53	45.30
Total	**117**	**100**
Age	**Frequency**	**Percentage**
18 years old and below	30	25.64
19 years old and above	87	74.36
Total	**117**	**100**
Program	**Frequency**	**Percentage**
Business	34	29.06
Science	37	31.62
Engineering	23	19.66
Technology	23	19.66
Total	**117**	**100**
Grade level	**Frequency**	**Percentage**
Freshman	18	15.38
Sophomore	24	20.51
Junior	47	40.17
Senior	28	23.93
Total	**117**	**100**

Table 8 presents the demographic profile of the 117 handball athlete- respondents who participated in the study. The data includes their sex and age, program and grade level.

Sex distribution shows that more than half of the respondents are males- 64 or 54.70% . And 53 or 45.30% are female- respondents .

In terms of age, the majority of the respondents are already 19 years of age and above . There are 87 of them out of 117 (74.36%) and only 30 respondents are 18 years of age and below(25.64%) .

In terms of the respondents program , majority of them are currently enrolled in the different science programs-37 of

them or 31.62%, followed by the resp0ndents who are enrolled in the business programs -34 of them or 29.06%, and those who are enrolled in the different engineering and technology programs have both 23 respondents per program (19.66%).

In terms of grade level , majority of the respondents are already on their junior level -47 of them or 40.17%,followed by those who are enrolled in the sophomore level – 24 of them or 20.51% and the least number of players are enrolled as freshman-18 of them or15.38%

➤ *The Assessment of the Handball Athlete-Respondents on the Coaching Leadership Styles of their Coaches*

Table 9 The Assessment of the Handball Athlete-Respondents on the Coaching Leadership Styles of their Coaches in Terms of Tactical/ Strategies Decision Making

Tactical/Strategic decision making Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. My coach articulates game strategy prior to contests.	3.43	0.50	Strongly Agree/Highly evident	2
2. My coach delivers explicit tactical directives throughout training sessions.	3.38	0.49	Strongly Agree/ Highly evident	3
3. My coach modifies plans according to the team's strengths and limitations.	3.28	0.47	Strongly Agree/ Highly evident	7
4. My coach executes prompt and efficient tactical judgments during matches.	3.19	0.39	Agree	8
5. My coach equips the team for various game situations and adversary tactics.	3.29	0.49	Strongly Agree/ Highly evident	5
6. My coach equally prioritizes offensive and defensive strategies.	3.30	0.48	Strongly Agree Highly evident /	4
7. My coach explain the reasoning behind tactical modifications throughout matches.	3.17	0.44	Agree	9
8. My coach motivates players to propose suggestions for game plans.	3.47	0.50	Strongly Agree/ Highly evident	1
9. My coach offers constructive criticism about tactical implementation post-match.	3.29	0.47	Strongly Agree/ Highly evident	6
10. My coach guarantees that all players comprehend their distinct tasks in various tactical scenarios.	3.14	0.35	Agree	10
Composite Mean	**3.29**	**0.46**	**Strongly Agree/** Highly evident	

Legend: 4-3.25-Strongly Agree/Highly Evident :3.24-2.50-Agree/Evident 2.49-1.75-Disagree/Less Evident,1.74-1.00-Strongly Disagree/Not Evident

Table 9 presents the assessment of the handball athlete-respondents on the coaching leadership styles of their coaches in terms of Tactical/ Strategies decision making.

In general, the composite mean result of 3.29 and SD of 0.46 shows that the respondents strongly agreed that the coaching leadership styles of their coaches in terms of Tactical/ Strategies decision making was highly evident.

Looking closely at the mean results of the different indicators under the Tactical/ Strategies decision making, Indicator #8" *My coach motivates players to propose suggestions for game plans.*" , has the highest mean result of 3.47 and SD of 0.50. The handball athletes-respondents strongly agreed that their coaches encourage them to share

their ideas also about their game plans. This leadership style of the coaches gave the handball-athletes the confidence to give their thoughts and about the game because they felt that they are part of the implementation of the strategy which could give them the sense that every game strategy during practices and actual competition can be a shared effort for all the members of the team.

In the contrary , the handball athletes agreed also that there is an evident of more focus supervision among the coaches when it comes to the explaining very the role of every member. This is evident in the indicator#10,"*My coach guarantees that all players comprehend their distinct tasks in various tactical scenarios.".* lowest mean result of 3.14 and SD of 0.35. This data could mean that there is a need for the

coaches to clearly explain to the handball – athletes their roles and duties in the team. Clear directions on how to execute each strategic or tactical tasks could lead to more improved execution of the assigned tasks and could them the respondents perform better and eventually help them win in the competitions.

Table 10 The assessment of the handball athlete-respondents on the coaching leadership styles of their coaches in terms of Technical Instruction

Technical instruction Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1.　My coach emphasizes enhancing individual player techniques during practice.	3.38	0.49	Strongly Agree/ Highly evident	2
2.　My coach offers explicit demonstrations of technical skills prior to training.	3.30	0.46	Strongly Agree/ Highly evident	3
3.　My coach rectifies technical errors efficiently and constructively.	3.27	0.45	Strongly Agree/ Highly evident	6
4.　My coach guarantees that participants acquire essential handball abilities (passing, shooting, dribbling).	3.14	0.35	Agree	9
5.　My coach presents sophisticated methods to improve player performance.	3.23	0.44	Agree	7
6.　My coach offers individualized comments on technical performance.	3.28	0.45	Strongly Agree/ Highly evident	5
7.　My coach underscores the importance of correct footwork and placement in every workout.	3.17	0.38	Agree	8
8.　My coach incorporates game simulated scenarios into technical training sessions.	3.45	0.50	Strongly Agree Highly evident	1
9.　My coach guarantees that all players have equitable technical development chances.	3.30	0.46	Strongly Agree Highly evident	4
10.　My coach incrementally elevates training intensity to enhance technical proficiency.	3.12	0.33	Agree	10
Composite Mean	**3.26**	**0.44**	**Strongly Agree /Highly evident**	

Legend: 4-3.25-Strongly Agree/Highly Evident :3.24-2.50-Agree/Evident 2.49-1.75-Disagree/Less Evident,1.74-1.00-Strongly Disagree/Not Evident

Table 10 presents the assessment of the handball athlete-respondents on the coaching leadership styles of their coaches in terms of Technical instruction.

In general, the composite mean result of 3.26 and SD of 0.44 shows that the respondents strongly agreed that the coaching leadership styles of their coaches in terms of Technical instruction making was highly evident.

Looking closely at the mean results of the different indicators under the Technical instruction, Indicator #8" *My coach incorporates game-simulated scenarios into technical training sessions.*" , has the highest mean result of 3.45 and SD of 0.50. The handball athletes-respondents strongly agreed that their coaches showed them examples of the simulation of the game. This is part of their technical instruction could help them play better and a higher possibility of winning the competitions. This leadership style of the coaches gave the handball-athletes the a clear visualization of the games through simulations. This could help the handball –athletes the capability to process in their minds the possible scenario of the game and it gives their minds the readiness to anticipate the movement of the games and eventually win in the competitions.

In the contrary , the handball athletes agreed also that there is an there is a need for the coaches to present the step by step process of the game plans. To improve their sports performance. This is evident in the indicator#10*," My coach incrementally elevates training intensity to enhance technical proficiency..".* lowest mean result of 3.12 and SD of 0.33. This data could mean that there is a need for the coaches to clearly explain to the handball – athletes the technical details of the sport. The findings implies a process of step-by-step game plan for continuous improvements, rather than sudden or large changes which could shift their mindset of the sport.

Table 11 The Assessment of the Handball Athlete-Respondents on the Coaching Leadership Styles of their Coaches in Terms of Psychological Support

Psychological Support Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1.　My coach assists athletes in cultivating confidence in their skills.	3.38	0.49	Strongly Agree/ Highly evident	5
2.　My coach offers motivation and support in difficult circumstances.	3.30	0.46	Strongly Agree/ Highly evident	6

3. My coach cultivates a constructive mentality and fortitude in the athletes.	3.26	0.44	Strongly Agree/ Highly evident	9
4. My coach instructs players on managing pressure in critical competitions.	3.41	0.49	Strongly Agree/ Highly evident	4
5. My coach motivates players to establish individual objectives for improvement.	3.42	0.51	Strongly Agree/ Highly evident	3
6. My coach fosters collaboration and emotional reinforcement among team members.	3.28	0.45	Strongly Agree/ Highly evident	8
7. My coach assists athletes in maintaining mental concentration throughout competitions.	3.17	0.38	Agree	10
8. My coach adeptly resolves problems and fosters a constructive team environment.	3.45	0.50	Strongly Agree/ Highly evident	2
9. My coach assists players throughout adversities or periods of subpar performance.	3.30	0.46	Strongly Agree/ Highly evident	7
10. My coach underscores the need of mental preparation before to competitions.	3.46	0.50	Strongly Agree/ Highly evident	1
Composite Mean	**3.34**	**0.47**	**Strongly Agree/ Highly evident**	

Legend: 4-3.25-Strongly Agree/Highly Evident :3.24-2.50-Agree/Evident 2.49-1.75-Disagree/Less Evident,1.74-1.00-Strongly Disagree/Not Evident

Table 11 presents the assessment of the handball athlete-respondents on the coaching leadership styles of their coaches in terms of psychological support.

In general, the composite mean result of 3.34 and SD of 0.47 shows that the respondents strongly agreed that the coaching leadership styles of their coaches in terms of Psychological support was highly evident.

Looking closely at the mean results of the different indicators under the Psychological support, Indicator #10" *My coach underscores the need of mental preparation before to competitions*." , has the highest mean result of 3.46 and SD of 0.50. The handball athletes-respondents strongly agreed that their coaches know the importance of mental and emotional preparations among their handball players. Mental preparations before crucial competitions can prepare the handball athletes with a more focus mind and steady emotions. This can give them a higher level of self-confidence in playing their best. This could help them play better and a higher possibility of winning the competitions. This could help the handball –athletes the capability to process in their minds the possible scenario of the game and it gives their minds the readiness to anticipate the movement of the games and eventually win in the competitions.

In the contrary, the handball athletes agreed also that there is a need for the coaches encourage their handball athletes to sustain this positive psychological mindset in order for them to focus on the game and cannot be easily distracted until the end of the game or competitions. This is evident in the indicator#7,*"My coach assists athletes in maintaining mental concentration throughout competitions."* having the lowest mean result of 3.17 and SD of 0.38. This data could mean that there is a need for the coaches to clearly explain to the handball – athletes the technical details of the sport. The findings implies that the respondents need to sustain their mental concentration until the need of the competition for better sport performance. Any distractions could greatly affect the concentration of the respondents.

Table 12 The Assessment of the Handball Athlete-Respondents on the Coaching Leadership Styles of their Coaches in Terms of Team Management

Team Management Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. My coach guarantees equitable allocation of playing time according to performance.	3.59	0.49	Strongly Agree/ Highly evident	2
2. My coach delineates explicit expectations and regulations for the squad.	3.40	0.49	Strongly Agree/ Highly evident	6
3. My coach proficiently oversees training timetables and team assemblies.	3.25	0.43	Agree	9
4. My coach fosters an atmosphere of reciprocal respect among the players.	3.40	0.49	Strongly Agree/ Highly evident	6
5. My coach fosters discipline and accountability among the team members.	3.44	0.52	Strongly Agree/ Highly evident	5
6. My coach fosters transparent communication with all players.	3.27	0.45	Strongly Agree/ Highly evident	8
7. My coach cultivates a robust team identity and cohesion.	3.20	0.40	Agree	10

	Mean	SD		Rank
8. My coach adjudicates disputes among players with equity and professionalism.	3.46	0.50	Strongly Agree/ Highly evident	4
9. My coach guarantees that training sessions are systematically arranged and effective.	3.56	0.50	Strongly Agree/ Highly evident	3
10. My coach adeptly equilibrates training intensity with player recuperation periods.	3.65	0.48	Strongly Agree/ Highly evident	1
Composite Mean	**3.42**	**0.48**	**Strongly Agree/ Highly evident**	

Legend: 4-3.25-Strongly Agree/Highly Evident :3.24-2.50-Agree/Evident 2.49-1.75-Disagree/Less Evident,1.74-1.00-Strongly Disagree/Not Evident

Table 12 presents the assessment of the handball athlete-respondents on the coaching leadership styles of their coaches in terms of Team management.

In general, the composite mean result of 3.42 and SD of 0.48 shows that the respondents strongly agreed that the coaching leadership styles of their coaches in terms of Team management was highly evident.

Looking closely at the mean results of the different indicators under Team management, Indicator #10", *My coach adeptly equilibrates training intensity with player recuperation periods*". has the highest mean result of 3.65and SD of 0.48. The handball athletes-respondents strongly agreed that their coaches put into top priority the recuperation of their athletes who suffered from injuries. This is a sign of care and concern among their athletes and their athletes appreciate this kind of gestures of their coaches. These findings could imply also that the coaches value more their

athletes than strictly implanting the structure training program. It shows also that their coaches knows how to adjust their training pr0gram based on the current status or capabilities of their athletes.

In the contrary, the handball athletes agreed also that there is an there is a need for the coaches to improve their capability to improve the unity and team works of the team. This is evident in the indicator#7,*" My coach cultivates a robust team identity and cohesion"* lowest mean result of 3.20 and SD of 0.40. This data could mean that there is a need for the coaches to check the unity of the members of the team. Any conflicts among them could cause division and silent grudges and if not address immediately , this could lead to indifference among them or worst is groupings or division among them. The findings implies that the coaches should me more mindful of the attitude or treatment of the members of the team towards each other.

Table 13 The Assessment of the Handball Athlete-Respondents on the Coaching Leadership Styles of their Coaches in Terms of Adaptability

Adaptability Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. My coach modifies training techniques according to the players' strengths and deficiencies.	3.59	0.49	Strongly Agree/ Highly evident	1
2. My coach adjusts game methods while confronting more formidable opponents.	3.42	0.50	Strongly Agree/ Highly evident	2
3. My coach implements innovative training methodologies to enhance team performance.	3.20	0.40	Agree	7
4. My coach is receptive to feedback and prepared to modify coaching techniques.	3.30	0.46	Strongly Agree/ Highly evident	4
5. My coach maintains composure and swiftly adjusts to unforeseen in game circumstances.	3.30	0.48	Strongly Agree/ Highly evident	3
6. My coach customizes motivating techniques to accommodate various player personalities.	3.23	0.42	Agree	5
7. My coach evaluates player effort and modifies training intensity accordingly.	3.11	0.32	Agree	8
8. My coach advocates for players to be versatile and adaptive in their positions.	3.22	0.42	Agree	6
9. My coach employs contemporary technologies and data analysis to enhance coaching effectiveness.	2.94	0.24	Agree	10
10. My coach adeptly adapts to fluctuations in player availability and injury.	2.95	0.32	Agree	9
Composite Mean	**3.23**	**0.41**	**Agree**	

Legend: 4-3.25-Strongly Agree/Highly Evident :3.24-2.50-Agree/Evident 2.49-1.75-Disagree/Less Evident,1.74-1.00-Strongly Disagree/Not Evident

Table 13 presents the assessment of the handball athlete-respondents on the coaching leadership styles of their coaches in terms of Adaptability

In general, the composite mean result of 3.23 and SD of 0.41 shows that the respondents strongly agreed that the coaching leadership styles of their coaches in terms of Adaptability was highly evident.

Looking closely at the mean results of the different indicators under the Adaptability, Indicator #1" *My coach modifies training techniques according to the players' strengths and deficiencies*." , has the highest mean result of 3.59 and SD of 0.49. The handball athletes-respondents strongly agreed that their coaches showed them concern about their present skills and capabilities and do not push them to train beyond their physical capabilities. This is also a way for the coaches to show to their athletes that they treat their athletes based on their individual attribute , whether physical attribute or mental attribute.

In the contrary, the handball athletes agreed also that there is an there is a need for the coaches apply innovative technology in coaching. This can help them analyze better the data from the trainings of their athletes. This is evident in the indicator#9,*" My coach employs contemporary technologies and data analysis to enhance coaching effectiveness"*. Lowest mean result of 2.94 and SD of 0.24. This data could mean that there is a need for the coaches equip themselves with the knowledge and skills in incorporating technology in their coaching styles in order for them to analyze the results of the sports performance of the athletes on a more comprehensive and precise way. The findings implies a continuous improvements, in coaching by embracing the positive contribution of technology in coaching and analyzing sports large and complex data based on the training performance and performance in actual competitions of the handball –athletes.

Table 14 Summary Table about the Assessment of the Handball Athletes-Respondents on the Coaching Leadership Styles of their Coaches

Summary Statistics				
	Variables	Mean	Verbal description/Interpretation	Rank
1	Tactical/Strategic decision making	3.29	Strongly Agree Highly evident	3
2	Technical instruction	3.26	Strongly Agree Highly evident	4
3	Psychological support	3.34	Strongly Agree Highly evident	2
4	Team Management	3.42	Strongly Agree Highly evident	1
5	Adaptability	3.23	Agree	5
	Overall mean	3.31	Strongly Agree Highly evident	

Legend: 4-3.25-Strongly Agree/Highly Evident :3.24-2.50-Agree/Evident 2.49-1.75-Disagree/Less Evident,1.74-1.00-Strongly Disagree/Not Evident

Table 14 shows the summary of the different variables related to assessment of the handball athletes-respondents on the coaching leadership styles of their coaches were ranked from highest to lowest based on their mean results: Team Management (3.42); Psychological support (3.34); Tactical/Strategic decision making (3.29); Technical instruction (3.26) and Adaptability (3.23).

The summary data presented above could mean that handball athletes strongly agreed that the leadership styles of their coaches was highly evident in the way they manage their team. The findings could mean also that the coaches prioritize the wellbeing of the athletes by adjusting their training program based on the physical ability of the athletes especially when they are injured. Their psychological aspect was also put into consideration by the coaches by preparing them mentally prior to competitions.

The summary result also could implies that the coaches can put more focus on their adaptability and further knowledge and applications of modern technologies in sports. It could be inferred that the coaches are not that knowledgeable of the benefit and utilization of modern technology in their coaching.

➢ *Differences in Assessment of the Handball- Athletes on the Coaching Leadership Styles of their Coaches when they are Grouped Based on their Profile*

Table 15 Assessment of the Handball Athletes on the Coaching Leadership Styles of their Coaches when they are Grouped Based on their Sex

Mann-Whitney U Tests					
Variables	Sex	Mean Rank	p-value	Decision	Interpretation
Tactical/Strategic	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Technical	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Psychological	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Team Management	Male	15.50	0.00	Rejected	Significant

	Female	5.50			
Adaptability	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Overall	**Male**	**15.5**	**0.00**	**Rejected**	**Significant**
	Female	**5.50**			

Legend: Significant at >0.05

Table 15 shows the results of the differences in the assessment of the handball- athletes on the coaching leadership styles of their coaches when they are grouped based on their sex. The p-value of 0.00 revealed that there is a significant difference in the responses of the respondents on their assessment of the coaching leadership styles of their coaches . And the result implies that the null hypothesis is rejected. The data on the table could be inferred that the perceptions of the handball-athletes based of their sex varied when they assessed the different leadership styles of their coaches.

Table 16 Assessment of the Handball Athletes on the Coaching Leadership Styles of their Coaches when they are Grouped Based on their Age

Mann-Whitney U Tests					
Variables	Age	Mean Rank	p-value	Decision	Interpretation
Tactical/Strategic	18 years old and below	12.93	0.18	Accepted	Not significant
	19 years old and above	9.19			
Technical	18 years old and below	12.93	0.18	Accepted	Not significant
	19 years old and above	9.19			
Psychological	18 years old and below	12.00	0.41	Accepted	Not significant
	19 years old and above	9.69			
Team Management	18 years old and below	12.00	0.13	Accepted	Not significant
	19 years old and above	9.69			
Adaptability	18 years old and below	12.07	0.38	Accepted	Not significant
	19 years old and above	9.65			
Overall	**18years old and below**	**12.39**	**0.26**	**Accepted**	**Not significant**
	19 years old and above	**9.48**			

Legend: Significant at >0.05

Table 16 shows the results of the differences in the assessment of the handball- athletes on the coaching leadership styles of their coaches when they are grouped based on their age. The data above shows that regardless of their age, the handball-athletes have similar responses relative to their assessment on the coaching leadership styles of their coaches This is evident in the p- value of 0.26. The result implies that regardless of their age group , their assessment is not significant and the null hypothesis is accepted.

Table 17 Assessment of the Handball Athletes on the Coaching Leadership Styles of their Coaches when they are Grouped Based on their Program

Kruskal-Wallis H Test					
Variables	Course/Program	Mean Rank	p	Decision	Interpretation
Tactical/Strategic	Business	25.75	0.00	Rejected	Significant
	Science	35.25			
	Engineering	11.90			
	Technology	9.10			
Technical	Business	25.65	0.00	Rejected	Significant
	Science	35.35			
	Engineering	11.80			
	Technology	9.20			
Psychological	Business	26.10	0.00	Rejected	Significant
	Science	34.90			
	Engineering	10.50			
	Technology	10.50			
Team Management	Business	26.60	0.00	Rejected	Significant
	Science	34.40			
	Engineering	9.90			
	Technology	11.10			
Adaptability	Business	27.75	0.00	Rejected	Significant

	Science	33.25			
	Engineering	9.55			
	Technology	11.45			
Overall	**Business**	**26.37**	**0.00**	**Rejected**	**Significant**
	Science	**34.63**			
	Engineering	**10.73**			
	Technology	**10.27**			

Legend: Significant at >0.05

Table 17 shows the results of the differences in the assessment of the handball- athletes on the coaching leadership styles of their coaches when they are grouped based on their program. The p-value of 0.00 revealed that there is a significant difference in the responses of the respondents on their assessment of the coaching leadership styles of their coaches. And the result implies that the null hypothesis is rejected.

Table 18 Assessment of the Handball Athletes on the Coaching Leadership Styles of their Coaches when they are Grouped Based on their Grade Level

Kruskal-Wallis H Test					
Variables	**Academic Level**	**Mean Rank**	**p-value**	**Decision**	**Interpretation**
Tactical/Strategic	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Technical	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Psychological	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Team Management	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Adaptability	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Overall	**Freshman**	**5.50**	**0.00**	**Rejected**	**Significant**
	Sophomore	**15.50**			
	Junior	**35.50**			
	Senior	**25.50**			

Legend: Significant at >0.05

Table 18 shows the results of the differences in the assessment of the handball- athletes on the coaching leadership styles of their coaches when they are grouped based on their year level. The p-value of 0.00 revealed that there is a significant difference in the responses of the respondents on their assessment of the coaching leadership styles of their coaches. And the result implies that the null hypothesis is rejected

Table 19 The Assessment of the Handball Athlete-Respondents on the Level of their Motivation in Chinese Handball in Terms of Goal Setting

Goal Setting Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. I made clear plans for how to get better at handball.	3.66	0.48	Strongly Agree/Highly motivated	2
2. I should set both short-term and long-term goals, says my guide.	3.50	0.50	Strongly Agree/ Highly motivated	4
3. I always keep track of how close I am to reaching my handball goals.	3.34	0.48	Strongly Agree /Highly motivated	10

	Mean	SD	Verbal description/ Interpretation	Rank
4. Working toward my personal and team achievement goals keeps me going.	3.44	0.50	Strongly Agree/ Highly motivated	8
5. I change my goals based on what I'm good at and what I need to work on.	3.46	0.50	Strongly Agree/ Highly motivated	7
6. When I reach the training and racing goals I set for myself, it keeps me going.	3.50	0.50	Strongly Agree/ Highly motivated	4
7. Setting goals helps me stay on track with my handball training.	3.46	0.50	Strongly Agree Highly motivated	6
8. Each season, I push myself by making goals that are a little higher than the last.	3.38	0.49	Strongly Agree/ Highly motivated	9
9. My coach helps me refine my goals so that I can keep getting better.	3.58	0.50	Strongly Agree/ Highly motivated	3
10. I'm a more focused and committed athlete now that I have goals.	3.67	0.47	Strongly Agree/ Highly motivated	1
Composite Mean	**3.50**	**0.49**	**Strongly Agree/ Highly motivated**	

Legend: 4-3.25-Strongly Agree/Highly Motivated :3.24-2.50-Agree/Motivated 2.49-1.75disagree/Less Motivated,1.74-1.00-Strongly Disagree/Not Motivated

Table 19 presents the assessment of the handball athlete-respondents on the level of their motivation in playing Chinese handball in terms of Goal setting.In general , the composite mean result of 3.50 and SD of 0.49 shows that the respondents strongly agreed that they are highly motivated to write and set their goals to become more focus and committed handball-athletes.

Looking closely at the mean results of the different indicators under Goal setting, Indicator #10". *I'm a more focused and committed athlete now that I have goals*." , has the highest mean result of 3.67 and SD of 0.47. The handball athletes-respondents strongly agreed that the set goals that they put on themselves serve as their driving force to practice better and play better. They admitted that they are more focus to achieve their set plans of actions in order for them to perform better in their chosen sport.

Indicator #3,". *I always keep track of how close I am to reaching my handball goals*." has the lowest mean result of 3.34 and SD of 0.48. Although this indicator received the lowest mean value , the respondents that they strongly agreed that they are highly motivated to track their skills improvement too. This could mean that the goals that the athletes set for themselves motivate them to achieve their goals in life especially the goals that they set for their chosen sport.

Table 20 The Assessment of the Handball Athlete-Respondents on the Level of their Motivation in Chinese Handball in Terms of Personal Achievement

Personal Achievement Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. I feel good about myself when I learn something new in handball.	3.66	0.48	Strongly Agree/ Highly motivated	2
2. When I reach personal goals in the sport, it makes me more motivated.	3.53	0.50	Strongly Agree Highly motivated /	4
3. In every game and exercise practice, I push myself to do better.	3.41	0.49	Strongly Agree/ Highly motivated	9
4. My accomplishments in handball make me feel good about my athletic skills.	3.45	0.50	Strongly Agree/ Highly motivated	8
5. Getting past problems in handball makes me feel very satisfied.	3.48	0.50	Strongly Agree/ Highly motivated	7
6. My own progress in handball drives me to keep getting better.	3.53	0.50	Strongly Agree /Highly motivated	4
7. Personally, I'm proud of what I've done to help the team succeed.	3.50	0.50	Strongly Agree/ Highly motivated	6
8. I keep myself going because I want to reach my full ability.	3.41	0.49	Strongly Agree/ Highly motivated	10
9. When I think about what I've accomplished in the past, it helps me set goals for the future.	3.58	0.50	Strongly Agree/ Highly motivated	3
10. The things I've done well in handball push me to do better in other parts of my life as well.	3.68	0.47	Strongly Agree/ Highly motivated	1
Composite Mean	**3.52**	**0.54**	**Strongly Agree/ Highly motivated**	

Legend: 4-3.25-Strongly Agree/Highly Motivated :3.24-2.50-Agree/Motivated 2.49-1.75 Disagree/Less Motivated, 1.74-1.00-Strongly Disagree/Not Motivated

Table 20 presents the assessment of the handball athlete-respondents on the level of their motivation in playing Chinese handball in terms of Personal achievement. In general , the composite mean result of 3.52 and SD of 0.54 shows that the respondents strongly agreed that they are highly motivated to play their favorite sports because they know that they can excel in this sport. They motivate themselves to learn new skills and techniques in playing handball which they can apply in their personal life too.

Looking closely at the mean results of the different indicators under the personal achievement, Indicator #10" *The things I've done well in handball push me to do better in other parts of my life as well". *, has the highest mean result of 3.68 and SD of 0.47. The handball athletes-respondents strongly agreed that the personal goals and plans related to their chosen sport inspire them to apply it also in their personal life as well. This could mean that the athletes are aware of the importance of having personal goals that they need to apply in their daily life ,whether as an athlete or as a student .

Indicator #8,*". I keep myself going because I want to reach my full ability*." has the lowest mean result of 3.41 and SD of 0.49. Although this indicator received the lowest mean value , the respondents admitted that they strongly agreed that they are highly motivated to do their best to reach their full potential as an athlete and as a student.

Table 21 The Assessment of the Handball Athlete-Respondents on the Level of their Motivation in Chinese Handball in Terms of Skill Development

Skill Development Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. I'm always excited to learn new things about handball.	3.66	0.48	Strongly Agree/ Highly motivated	2
2. Getting better at technical and practical skills keeps me going.	3.56	0.50	Strongly Agree/ Highly motivated	4
3. I worked harder at training to get better at handball.	3.43	0.50	Strongly Agree/ Highly motivated	8
4. When I see improvement in how I play, it makes me more motivated.	3.37	0.48	Strongly Agree/ Highly motivated	10
5. I actively ask my teacher for feedback to improve my skills.	3.50	0.50	Strongly Agree/ Highly motivated	6
6. I'm ready to practice over and over to get better.	3.53	0.50	Strongly Agree/ Highly motivated	5
7. I want to improve my game by learning more complicated methods.	3.39	0.49	Strongly Agree/ Highly motivated	9
8. Getting better at handball is a big part of why I want to keep playing for a long time.	3.46	0.50	Strongly Agree/ Highly motivated	7
9. I'm responsible for working hard to get better at the things I'm not good at.	3.63	0.48	Strongly Agree/ Highly motivated	3
10. I keep working because I really want to get better at handball.	3.68	0.47	Strongly Agree/ Highly motivated	1
Composite Mean	**3.52**	**0.49**	**Strongly Agree/ Highly motivated**	

Legend: 4-3.25-Strongly Agree/Highly Motivated :3.24-2.50-Agree/Motivated 2.49-1.75disagree/Less Motivated, 1.74-1.00-Strongly Disagree/Not Motivated

Table 21 presents the assessment of the handball athlete-respondents on the level of their motivation in playing Chinese handball in terms of Skills development. In general , the composite mean result of 3.52 and SD of 0.49 shows that the respondents strongly agreed that they are highly motivated and very excited to learn new skills which could help them improve their skills in Chinese handball.

Looking closely at the mean results of the different indicators under the Skills development, Indicator #10" *I keep working because I really want to get better at handball.* ", has the highest mean result of 3.68 and SD of 0.47. The handball athletes-respondents strongly agreed that they are doing their best to improve their skills in handball. They admitted that they keep practicing to achieve their desired goals and plans .

Indicator #4,*". When I see improvement in how I play, it makes me more motivated"* has the lowest mean result of 3.37 and SD of 0.48. Although this indicator received the lowest mean value , the respondents admitted that they strongly agreed that they are highly motivated to do their best in practicing their sport whenever they see improvement in their sport performance and in the execution of the different skills of the sport handball.

Table 22 The Assessment of the Handball Athlete-Respondents on the Level of their Motivation in Chinese Handball in Terms of Recognition

Recognition Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. When my coach praises my work in practice and games, it keeps me going.	3.66	0.48	Strongly Agree/ Highly motivated	2
2. Getting praise from my friends makes me feel better about myself and drives me to do better.	3.56	0.50	Strongly Agree/ Highly motivated	4
3. When I hear good things about my work, I put in more effort.	3.43	0.50	Strongly Agree/ Highly motivated	8
4. When I'm picked for important games or events, it makes me more motivated.	3.37	0.48	Strongly Agree/ Highly motivated	10
5. Being thanked for what I do for the team motivates me to keep getting better.	3.50	0.50	Strongly Agree/ Highly motivated	6
6. I'm grateful that my teachers and classmates who support and praise me.	3.53	0.50	Strongly Agree/ Highly motivated	5
7. When people notice how hard I've worked, it makes me feel very proud.	3.39	0.49	Strongly Agree/ Highly motivated	9
8. Receiving awards or praise for my work motivates me to do even better next time.	3.46	0.50	Strongly Agree/ Highly motivated	7
9. Knowing that my hard work is noticed makes me committed to handball.	3.63	0.48	Strongly Agree/ Highly motivated	3
10. When my growth is recognized, it makes me feel better about myself and gives me more drive to do better .	3.68	0.47	Strongly Agree/ Highly motivated	1
Composite Mean	**3.52**	**0.44**	**Strongly Agree/ Highly motivated**	

Legend: 4-3.25-Strongly Agree/Highly Motivated :3.24-2.50-Agree/Motivated 2.49-1.75 Disagree/Less Motivated, 1.74-1.00-Strongly Disagree/Not Motivated

Table 22 presents the assessment of the handball athlete-respondents on the level of their motivation in playing Chinese handball in terms of Recognition. In general , the composite mean result of 3.52 and SD of 0.44 shows that the respondents strongly agreed that they are highly motivated to play handball better when they receive recognition from their coaches , praises from their friends, teachers and co-teammates .

Looking closely at the mean results of the different indicators under the Recognition, Indicator #10" *When my growth is recognized, it makes me feel better about myself and gives me more drive to do better*". has the highest mean result of 3.68 and SD of 0.47. The handball athletes-respondents strongly agreed that they are doing their best to improve their skills in handball when they received recognition from the people around them like their coaches , their teammates , their parents , their teachers .classmates and friends too .They admitted that they keep practicing to achieve their desired goals and plans . The praises and positive comments of these people inspired them to play better .

Indicator #4 *" When I'm picked for important games or events, it makes me more motivated.*" has the lowest mean result of 3.37 and SD of 0.48. Although this indicator received the lowest mean value , the respondents admitted that they strongly agreed that they are highly motivated to do their best in practicing their sport whenever they are being chosen to play in the competitions. This could imply that the trust that their coaches gave to them whenever they are being chosen to play boost their confidence to play very well.

Table 23 The Assessment of the Handball Athlete-Respondents on the Level of their Motivation in Chinese Handball in Terms of Self – Regulation

Self-regulation Indicators	Mean	SD	Verbal description/ Interpretation	Rank
1. Even when training gets hard, I can stay engaged and follow through.	3.66	0.48	Strongly Agree/ Highly motivated	2
2. I'm good at controlling my feelings when games and events get tough.	3.44	0.50	Strongly Agree/ Highly motivated	7
3. I keep my promise to train even when I don't feel like it.	3.36	0.48	Strongly Agree/ Highly motivated	10
4. I keep a good attitude even when I lose or have problems in handball.	3.37	0.48	Strongly Agree/ Highly motivated	9
5. Participating in handball has helped me become very selfdisciplined.	3.50	0.50	Strongly Agree /Highly motivated	5

	Mean	SD	Verbal Description	Rank
6. Improving my success is my own duty; I don't count on outside motivation alone.	3.53	0.50	Strongly Agree/ Highly motivated	4
7. I use methods for self-motivation to keep going with my training and contests.	3.39	0.49	Strongly Agree/ Highly motivated	8
8. Without outside pressure, I can push myself to work hard and do well.	3.46	0.50	Strongly Agree/ Highly motivated	6
9. I stick to the same exercise schedule even when things get tough.	3.63	0.48	Strongly Agree/ Highly motivated	3
10. Being able to control my feelings helps me do well when I'm under a lot of stress.	3.68	0.47	Strongly Agree/ Highly motivated	1
Composite Mean	**3.50**	**0.49**	**Strongly Agree/ Highly motivated**	

Legend: 4-3.25-Strongly Agree/Highly Motivated :3.24-2.50-Agree/Motivated 2.49-1.75 Disagree/Less Motivated, 1.74-1.00-Strongly Disagree/Not Motivated

Table 23 presents the assessment of the handball athlete-respondents on the level of their motivation in playing Chinese handball in terms of Self-regulation. In general , the composite mean result of 3.50 and SD of 0.49 shows that the respondents strongly agreed that they are highly motivated to observe their emotions and try their best to handle it especially during crucial times and during competition. They admitted also that they try their best to control their negative emotions and try their best to stay positive even in tough and challenging situations.

Looking closely at the mean results of the different indicators under the Recognition, Indicator #10" *Being able to control my feelings helps me do well when I'm under a lot*

of stress." has the highest mean result of 3.68 and SD of 0.47. The handball athletes-respondents strongly agreed that they can control their emotions or feelings even a stressful situations . This could be seen during competitions especially during quarter finals or during final games. The athletes admitted that they show a higher level of emotional control and focus only on the games.

Indicator #3*" . I keep my promise to train even when I don't feel like it.*" has the lowest mean result of 3.36 and SD of 0.48. Although this indicator received the lowest mean value , the respondents admitted that they strongly agreed that they are highly motivated to train better even when they are less motivated to practice .

Table 24 Summary Table on the Assessment of the Handball Athletes on the Level of Motivation in Playing Chinese Handball

	Summary Statistics			
	Variables	Overall Mean	Verbal description/ Interpretation	Rank
1	Goal Setting	3.50	Strongly Agree/ Highly motivated	4.5
2	Personal Achievement	3.52	Strongly Agree/ Highly motivated	3
3	Skill Development	3.52	Strongly Agree/ Highly motivated	3
4	Recognition	3.52	Strongly Agree/ Highly motivated	3
5	Self-regulation	3.50	Strongly Agree/ Highly motivated	4.5
	Overall	**3.5**	**Strongly Agree/ Highly motivated**	

Legend: 4-3.25-Strongly Agree/Highly Motivated :3.24-2.50-Agree/Motivated 2.49-1.75 Disagree/Less Motivated, 1.74-1.00-Strongly Disagree/Not Motivated

Table 24 shows the summary of the different variables related to assessment of the handball athletes-respondents on their level of motivation in playing Chinese handball .The variables were ranked from highest to lowest based on their mean results : Personal achievement (3.52); Skills development (3.52); Recognition (3.52) ; Goal setting(3.50) and Self-regulation(3.50).

The summary results shown above could mean that the handball-athletes have a very high level of motivation in achieving the goals that they set for themselves especially that they personally motivated to excel in their chosen sport.

Even though the result of the mean value of the variable self-regulation is very high but it received the lowest mean value based on the responses of the handball athletes-respondents. There is still a need to improve their level of self-regulation to achieved their personal goals and plans that they set for themselves.

➢ *Difference in the Assessment of the Handball Athletes on the Level of Motivation in Chinese Handball when they are Grouped Based on their Profile*

Table 25 Assessment of the Handball Athletes on the Level of Motivation in Chinese Handball when they are Grouped Based on their Sex

Mann-Whitney U Tests					
Variables	Sex	Mean Rank	p-value	Decision	Interpretation
Goal Setting	Male	15.50	0.00	Rejected	Significant

	Female	5.50			
Personal Achievement	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Skill Development	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Recognition	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Self-regulation	Male	15.50	0.00	Rejected	Significant
	Female	5.50			
Overall	**Male**	**15.50**	**0.00**	**Rejected**	**Significant**
	Female	**5.50**			

Legend: Significant at >0.05

Table 25 shows the results of the differences in the assessment of the handball- athletes on their level of motivation in Chinese handball when they are grouped based on their sex. The p-value of 0.00 revealed that there is a significant difference in the responses of the respondents on their level of motivation based on their sex. And the result implies that the null hypothesis is rejected.

Table 26 Assessment of the Handball Athletes on the Level of Motivation in Chinese Handball when they are Grouped Based on their Age

Mann-Whitney U Tests					
Variables	**Age**	**Mean Rank**	**p-value**	**Decision**	**Interpretation**
Goal Setting	18 years old and below	13.64	0.80	Accepted	Not significant
	19 years old and above	8.81			
Personal Achievement	18 years old and below	13.64	0.80	Accepted	Not significant
	19 years old and above	8.81			
Skill Development	18 years old and below	13.64	0.81	Accepted	Not significant
	19 years old and above	8.81			
Recognition	18 years old and below	13.64	0.81	Accepted	Not significant
	19 years old and above	8.81			
Self-regulation	18 years old and below	13.71	0.07	Accepted	Not significant
	19 years old and above	8.77			
Overall	**18 years old and below**	**13.65**	**0.66**	**Accepted**	**Not significant**
	19 years old and above	**8.80**			

Legend: Significant at <0.05

Table 26 shows the results of the differences in the assessment of the handball- athletes on their level of motivation in Chinese handball when they are grouped based on their Age.

The data above shows that regardless of their age, the handball-athletes have similar responses relative to their assessment on their level of motivation in Chinese handball. This is evident in the p- value of 0.66. The result implies that regardless of their age group, their assessment is not significant and the null hypothesis is accepted.

Table 27 Assessment of the Handball Athletes on the Level of Motivation in Chinese Handball when they are Grouped Based on their Program

Kruskal-Wallis H Test					
Assessment of the handball athletes on the level of motivation in Chinese	**Program**	**Mean Rank**	**p-value**	**Decision**	**Interpretation**
Goal Setting	Business	26.10	0.00	Rejected	Significant
	Science	34.90			
	Engineering	9.10			
	Technology	11.90			
Personal Achievement	Business	25.90	0.00	Rejected	Significant
	Science	35.10			
	Engineering	9.00			
	Technology	12.00			
Skill Development	Business	26.35	0.00	Rejected	Significant
	Science	34.65			
	Engineering	9.10			

	Technology	11.90			
Recognition	Business	26.35	0.00	Rejected	Significant
	Science	34.65			
	Engineering	9.10			
	Technology	11.90			
Self-regulation	Business	26.45	0.00	Rejected	Significant
	Science	34.55			
	Engineering	9.25			
	Technology	11.75			
Overall	**Business**	**26.23**	**0.00**	**Rejected**	**Significant**
	Science	**34.77**			
	Engineering	**9.11**			
	Technology	**11.89**			

Legend: Significant at >0.05

Table 27 shows the results of the differences in the assessment of the handball- athletes on their level of motivation in Chinese handball when they are grouped based on their program . The p-value of 0.00 revealed that there is a significant difference in the responses of the respondents on their level of motivation based on their course/program. And the result implies that the null hypothesis is rejected.

Table 28 Assessment of the Handball Athletes on the Level of Motivation in Chinese Handball when they are Grouped
Based on their Grade Level

Kruskal-Wallis H Test					
Variables	**Academic Level**	**Mean Rank**	**p-value**	**Decision**	**Interpretation**
Goal Setting	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Personal Achievement	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Skill Development	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Recognition	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Self-regulation	Freshman	5.50	0.00	Rejected	Significant
	Sophomore	15.50			
	Junior	35.50			
	Senior	25.50			
Overall	**Freshman**	**5.50**	**0.00**	**Rejected**	**Significant**
	Sophomore	**15.50**			
	Junior	**35.50**			
	Senior	**25.50**			

Legend: Significant at >0.05

Table 28 shows the results of the differences in the assessment of the handball- athletes on their level of motivation in Chinese handball when they are grouped based on their year level . The p-value of 0.00 revealed that there is a significant difference in th e responses of the respondents on their level of motivation based on their year level. And the result implies that the null hypothesis is rejected.

Table 29 Relationship Between the Assessment of the Handball Athletes-Respondents on the Coaching Leadership Styles of their Coaches and Assessment of the Chinese Handball Athletes on the Level of Motivation in Chinese Handball.

Spearman's Correlation						
Assessment of the handball athletes on the coaching leadership styles of their coaches	Assessment of the handball athletes on the level of motivation in Chinese	ρ	Strength of Relationship	p-value	Decision	Interpretation
Tactical/Strategic	Goal Setting	-0.04	Weak Negative Relationship	0.91	Accepted	No significant relationship
	Personal Achievement	-0.10	Weak Negative Relationship	0.79		
	Skill Development	0.21	Weak Positive Relationship	0.57	Accepted	No significant relationship
	Recognition	0.21	Weak Negative Relationship	0.57	Accepted	No significant relationship
	Self-regulation	0.15	Weak Positive Relationship	0.68	Accepted	No significant relationship
Technical	Goal Setting	-0.02	Weak Negative Relationship	0.97	Accepted	No significant relationship
	Personal Achievement	-0.05	Weak Negative Relationship	0.89	Accepted	No significant relationship
	Skill Development	0.24	Weak Positive Relationship	0.50	Accepted	No significant relationship
	Recognition	0.24	Weak Negative Relationship	0.50	Accepted	No significant relationship
	Self-regulation	0.15	Weak Positive Relationship	0.68	Accepted	No significant relationship
Psychologic al	Goal Setting	0.22	Weak Positive Relationship	0.55	Accepted	No significant relationship
	Personal Achievement	0.13	Weak Negative Relationship	0.72	Accepted	No significant relationship
	Skill Development	0.34	Moderate Positive Relationship	0.34		
	Recognition	0.34	Moderate Positive Relationship	0.34	Accepted	No significant relationship
	Self-regulation	0.47	Moderate Positive Relationship	0.17	Accepted	No significant relationship
Team Management	Goal Setting	0.64*	Strong Positive Relationship	0.05	Reject Ho	Significant
	Personal Achievement	0.58	Strong Positive	0.08	Accepted	No

			Relationship			significant relationship
	Skill Development	0.76*	Very Strong Positive Relationship	0.01	Accepted	Significant
	Recognition	0.76*	Very Strong Positive Relationship	0.01	Accepted	Significant
	Self-regulation	0.81*	Very Strong Positive Relationship	0.00	Reject Ho	Significant
Adaptability	Goal Setting	-0.04	Weak Negative Relationship	0.91	Accepted	No significant relationship
	Personal Achievement	-0.07	Weak Negative Relationship	0.84	Accepted	No significant relationship
	Skill Development	-0.03	Weak Negative Relationship	0.93	Accepted	No significant relationship
	Recognition	-0.03	Weak Negative Relationship	0.93		
	Self-regulation	-0.10	Weak Negative Relationship	0.78	Accepted	No significant relationship

Spearman's Correlation						
Variables	ρ	Strength of Relationship	P value	Decision	Interpretation	
Assessment of the handball -athletes on the coaching leadership styles of their coaches	Assessment of the handball -athletes on the level of motivation in Chinese Handball	0.16	Weak Positive Relationship	0.27	Accepted	No significant relationship

➢ *Legend:*

Correlation Coefficient ρ	Verbal Interpretation
±0.90 – ±1.00	Near Perfect/Perfect
±0.70 – ±0.89	Very Strong
±0.50 – ±0.69	Strong
±0.30 – ±0.49	Moderate
±0.10 – ±0.29	Weak
0.00 – ±0.09	Negligible/Weak

Table 29 shows the relationship between the assessment of the Chinese handball athletes-respondents on the coaching leadership styles of their coaches and assessment of the handball athletes on their level of motivation in Chinese Handball.

The overall result for both variables which *is p* 0.16 shows that there is a weak positive relationship between the two main variables. The result could imply that the coaching leadership styles of the coaches do not have a direct influence on the level of motivation of the Handball-athletes-respondents.

Looking closely at the results of the different variables, there is a strong positive relationship between team management and goal-setting (p-value-0.05). This result could mean that when the coaches and their team set goals together , the chances success and winning is highly possible . They are aware that playing a team sport like Handball requires team effort, commitment , team work and team accountability.

Furthermore , Team management has a very positive relationship with the variables skills development(p-value=001 , recognition (p- value=0.01)and selfregulation (p-value=0.00). This data could mean that coaches focusing on the improvement of the skills and self-regulation of the

team. And recognizing gthe skills improvement of the handball-athletes inspire them to focus more in practicing as well as playing better during competitions . This is due to the fact that the athletes feel valued and trusted by their coaches.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions:

- Majority of the handball athletes – respondents are males . This could be associated to team sports like handball is mostly played by males. The results also showed that majority of the respondents   are 19 years of age already and in their Junior grade level already. This signifies that they have a greater autonomy to choose the kind of sport that they want to engaged in.

- Notably, the handball athletes-respondents admitted that their coaches showed a higher level of leadership styles which helped them gained necessary skills , management skills and mental and psychological preparations in their chosen sport.. This is very crucial in a sport like handball because it is a team sport. The result implies that through the guidance and supervision of coaches who apply an appropriate leadership style could help the athletes perform better , gain more confidence, focus ,team cohesiveness and being more adaptive of the nature of the sport and the situations both during trainings and actual competitions.

- Moreover, the handball athletes-respondents admitted also that their level of motivation in playing this chosen sport helped them to be more internally motivated to practice and play better because they want to improve their skills , challenge their sport capability . Their externally motivated to play better because they also want to gain recognition and appreciation from their coaches , parents , teachers , classmates, friends and teammates.

- It can be noted also that when grouped by sex , course or program and year level, there is a significant differences in the responses of the respondents regarding the coaching leadership styles of their coaches. On the contrary , there is no significant difference in the responses of the respondents when grouped based on their age.

- Furthermore , there is also a significant difference in the responses of the respondents on their level of motivation when they are grouped based on sex, course or program and grade level and no significant different in their responses when they are grouped based on their age.

- Lastly , the relationship between the assessment of the Chinese handball athletes-respondents on the coaching leadership styles of their coaches and assessment on their level of motivation in Chinese handball shows that there is a weak positive relationship between the two main variables. The result could imply that the coaching leadership styles of the coaches do not have a direct

influence on the level of motivation of the Handball-athletes-respondents.

B. Recommendations:

➢ *Continue to Recruit and Train Students who are Interested in Chinese Handball for Holistic Development of the Student-Athletes*

The overall results showed that Chinese handball is mostly played by males. It is recommended for the sports directors and coaches to enhance their recruitment program to entice more players to join the Chinse handball team.

➢ *Strengthen the Coaching Capability of the Coaches*

The results showed that there is still rooms for improvement in the implementation of the coaching styles of the coaches particularly in the area of technical instruction and adaptability of the players to the sport. The sports management team could Conduct training – workshop for the coaches and staff to enhance their leadership styles and skills in coaching the Chinese handball. Conduct seminars to enhance their innovative strategies and technique in coaching as well as how to handle the student-athletes well.

➢ *Enhance the Level of Motivation of the Student-Athletes:*

The sports management team and coaches could conduct training workshops among the student-athletes to enhance their level of motivation both internal and external motivation. The seminar –workshop could focus on personal development , goal setting , stress management, self regulation and skills development .

- The researcher would like to recommends to pilot test the proposed output of the study and contextualized it based on the situation of the end user.

PROPOSED OUTPUT OF THE STUDY ENHANCED COACHING LEADERSHIP STYLES AND MOTIVATION PROGRAMS

➢ *Rationale*

Handball is one such team sport, and its dynamic nature – agility, strategy, and teamwork – has made it very popular in sports programs offered in many universities globally. Among the sports in Chinese universities, handball has gained increasing popularity as a significant sport with physical and student engagement benefits. Nevertheless, the state of handball in college is mixed, as several colleges and universities develop competitive programs, while others face low participation, and inadequate funding (Chen, 2022). Given its potential, however, handball remains underdeveloped in some regions of China because of inadequate infrastructure, lesser media exposure, and general unawareness about the sport (Zhang, 2023). Although there has been some improvement in recent years, especially in institutions with strong physical education departments, the sport still faces challenges due to low participation rates, and difficulty in identifying potential talent. 8. motivational coaching and leadership development program can be designed?

> *General Objectives:*

The proposed enhanced coaching leadership styles and motivational program aims to:

- Acquire the necessary skills and competences of the coaching leadership styles motivational programs;

- Enhance the coaching performance of the coaches and motivational skills of the athletes;
- Apply all the knowledge and skills learned during their trainings and competitions.

Key result area	Objectives	Activity/ies	Persons involved	Budget	Expected outcome
A. **Coaching Leadership Program** 1.Qualification of the coaches	Enhance the coaches ' leadership styles	The sport management should conduct innovative seminar – work shop to enhance the coaching styles , strategies and technique of the coaches in the sport Handball	Sport Managem ent team Coaches	3,000 CNY	Coaches can apply the latest and innovative strategies and techniques in skills development of the sport handball.
2. Adaptability of the coaches in the utilization of innovative technology in sport	Update on the knowledge and skills in the applicatio n of modern technolog y in sports Apply technolog y in evaluating data gathered sport performances	Review the training program or plan particularly in evaluating the athletes' performances during trainings and competitions and apply innovative tools	Sport Managem ents team Coaches	5,0000 CNY	Mastery of innovative and sport technology in evaluating sport performances
3.Seminar work shop focusing on goal setting and selfregulation	Enhanced the level of Selfregulation and goal setting of the Handball – athletes	The sport management should conduct innovative seminar – work shop to enhance the level of Self – regulation and goal-setting of the Handball athletes	Sport Managem ents team Coaches Handball - athletes	2,000 CHY	High level of sport performances
B. Motivational Approaches and techniques for handball athletes	Enhance the level of motivation of the Handball athletes	Conduct workshop sessions for enhancement the level of motivations of the Handball athletes Conduct Psychological test	Sport Managem ents team Coaches Handball – athletes Guidance counselor	1000C HY	Handball athletes become more motivated to perform their best in their chosen sports and in their studies too More composed Athletes

PLAN OF IMPLEMENTATION

- Develop a detailed implementation plan: In response to the research outputs, develop a specific implementation plan, including activities, timelines, and responsible individuals. Ensure that all aspects of how to improve the implementation of the enhanced Coaching Leadership Styles and Motivational Program are included in the plan..
- Designate responsible persons: Designate responsible persons for each activity to ensure that someone is responsible for overseeing and facilitating implementation.

- Allocate resources: Ensure that there are sufficient resources to support the implementation of the program, including human, financial, and physical resources.
- Conduct training and workshops: Provide coaches , athletes and staff with the necessary training and workshops to help them understand and participate in the implementation plan.
- Monitoring and evaluation: Establish monitoring and evaluation mechanisms to track the progress and effectiveness of the program. This may include regular data collection and coaches and athletes' feedback.
- Adjustment and improvement: Based on the results of monitoring and evaluation, make necessary adjustments

and improvements to the implementation plan. Ensure that the program remains effective.

- Promotion and Advocacy: Communicate the goals and benefits of the program to sports management team , coaches , athletes , teachers, staff, parents and other interested parties to increase their participation and support.
- Engage Stakeholders: Actively work with stakeholders such as sports donors and other clients, staff, parents, and school administration to ensure their cooperation and support.
- Continuous Improvement: Implementing the program should be a continuous improvement process. Feedback is continually collected, improvements are made based on lessons learned, and adaptations are made to meet changing needs.
- Regular Reporting and Communication: Maintain transparency and
- communication by reporting regularly on the progress and results of the implementation plan to the sport management other interested parties.
- Knowledge Sharing and Diffusion: If the implementation plan is successful, consider sharing experiences and best practices in other schools or organizations to drive broader impact.

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