Effectiveness of Goal-Setting Intervention on the Motivation and Sports Performance of Al Amin Secondary School Handball Players

(Keberkesanan Intervensi Penetapan Matlamat terhadap Motivasi dan Prestasi Sukan Pemain Bola Baling Sekolah Menengah Al-Amin)

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ABSTRACT

Goal setting is a recognized technique for enhancing sports performance and athlete motivation by setting specific, measurable, attainable, relevant, and time-bound (SMART) goals. This study aimed to evaluate the effectiveness of a goal-setting intervention on the motivation and performance levels of handball players at Al-Amin Secondary School. A quasi-experimental design with pre-test and post-test control groups was employed, involving 30 players divided equally into treatment and control groups. The Goal Setting Questionnaire (GSQ) and Athlete's Subjective Performance Scale (ASPS) were used to measure motivation and performance, respectively. The independent samples t-test revealed that the treatment group, which participated in the goal-setting intervention, showed significantly higher motivation and performance levels compared to the control group during the mid-point test ($p < 0.05$). Paired samples t-tests further confirmed the intervention's effectiveness, showing significant improvements in both motivation (mean difference = -6.000, $p < 0.001$) and performance (mean difference = -29.133, $p < 0.001$) after six weeks. The findings align with existing literature, demonstrating that structured goal-setting interventions significantly enhance both motivation and performance in sports contexts. However, variability in the data suggests that individual differences and contextual factors play a crucial role in the effectiveness of these interventions. Future research should explore the long-term effects of goal setting and consider tailoring interventions to individual athlete needs to maximize their impact. This study highlights the potential of goal setting as a powerful tool for improving athletic outcomes in school sports programs.

Keywords: *Goal Setting, Sports Performance, Athlete Motivation, Quasi-Experimental Design, Handball Players*

ABSTRAK

Penetapan matlamat adalah teknik yang diakui untuk meningkatkan prestasi sukan dan motivasi atlet dengan menetapkan matlamat yang spesifik, boleh diukur, boleh dicapai, relevan, dan mempunyai had masa (SMART). Kajian ini bertujuan untuk menilai keberkesanan intervensi penetapan matlamat terhadap tahap motivasi dan prestasi pemain bola baling di Sekolah Menengah Al-Amin. Reka bentuk kajian kuasi-eksperimen dengan kumpulan kawalan pra-ujian dan pasca-ujian telah digunakan, melibatkan 30 pemain yang dibahagikan secara sama rata kepada kumpulan rawatan dan kawalan. Soal Selidik Penetapan Matlamat (GSQ) dan Skala Prestasi Subjektif Atlet (ASPS) digunakan untuk mengukur motivasi dan prestasi.

Ujian t sampel bebas mendedahkan bahawa kumpulan rawatan yang terlibat dalam intervensi penetapan matlamat menunjukkan tahap motivasi dan prestasi yang lebih tinggi secara signifikan berbanding kumpulan kawalan semasa ujian pertengahan ($p < 0.05$). Ujian t sampel berpasangan juga mengesahkan keberkesanan intervensi, menunjukkan peningkatan yang signifikan dalam kedua-dua motivasi (perbezaan min = -6.000, $p < 0.001$) dan prestasi (perbezaan min = -29.133, $p < 0.001$) selepas enam minggu. Penemuan ini sejajar dengan literatur sedia ada, yang menunjukkan bahawa intervensi penetapan matlamat yang berstruktur dapat meningkatkan motivasi dan prestasi dalam konteks sukan. Namun, variasi dalam data menunjukkan bahawa perbezaan individu dan faktor kontekstual memainkan peranan penting dalam keberkesanan intervensi ini. Kajian masa depan harus meneroka kesan jangka panjang penetapan matlamat dan mempertimbangkan penyesuaian intervensi mengikut keperluan individu atlet untuk memaksimumkan impaknya. Kajian ini menekankan potensi penetapan matlamat sebagai alat yang berkesan untuk meningkatkan pencapaian sukan dalam program sukan sekolah.

Kata Kunci: *Penetapan Matlamat, Prestasi Sukan, Motivasi Atlet, Reka bentuk Kuasi-Eksperimen, Pemain Bola Baling*

INTRODUCTION

Goal setting is widely recognized as an effective technique for enhancing sports performance and athlete motivation (Ying & Nazarudin, 2023). This technique involves setting specific, measurable, attainable, relevant, and time-bound (SMART) goals, which can drive athletes to achieve higher levels of performance and motivation. Gaudreau and Braaten (2016) highlighted that achievement goals, particularly mastery-approach and performance-approach goals, are strongly associated with better outcomes when pursued with autonomous motivation. These types of goals emphasize personal improvement and outperforming others, respectively, and are linked to enhanced sports performance when athletes are intrinsically motivated. Moreover, research has demonstrated a strong positive correlation between goal setting and achievement motivation in athletes. Fachrezi et al. (2023) found that athletes who set more specific goals tend to exhibit higher levels of motivation. This finding underscores the importance of clarity and specificity in goal-setting practices to optimize motivation and, consequently, performance.

A systematic review by Pop et al. (2021) further supports the effectiveness of goal-setting interventions in improving sports performance. This review consolidates evidence from various studies, demonstrating that goal setting can significantly enhance athletic outcomes across different sports and levels of competition. However, while the overall effectiveness of goal setting is well-established, there is an emerging critique of the current goal-setting frameworks used in sports. Healy et al. (2018) argue that existing recommendations for goal setting in sports may be overly simplistic, often neglecting important factors such as individual differences, contextual influences, and the nuanced characteristics of goals themselves. They suggest that goal setting in sports should not only focus on goal attainment but also consider other benefits of goal pursuit, such as the athlete's well-being. This perspective indicates the need for a more comprehensive and nuanced approach to goal setting, one that takes into account the complexity of athletic environments and the diverse needs of athletes (Ying & Nazarudin, 2023. In summary, while goal setting is an effective tool for enhancing sports performance and motivation, its application in sports contexts may benefit from a more sophisticated approach. By considering individual differences, contextual factors, and the broader implications of goal pursuit, sports professionals can maximize the effectiveness of goal-setting interventions.

Goal-setting and motivation are integral to the performance of handball players, influencing not only their athletic abilities but also their enjoyment and long-term success in the sport. The role of a mastery-oriented motivational climate, typically fostered by coaches, is particularly impactful. According to Granero-Gallegos et al. (2017), such a climate positively influences athletes' task-centered goal orientation, leading to increased enjoyment and a stronger belief in success through effort. This highlights the importance of coaches in shaping the motivational environment to promote positive outcomes in handball. In addition to motivational climate, psychological collectivism, and task orientation have been identified as key contributors to goal-setting achievement and overall performance in handball teams. Arraya and Mónico (2020) emphasize that when team members share a collective mindset and remain focused on tasks, they are more likely to achieve their goals and perform better as a unit. This suggests that fostering a team-oriented approach in goal-setting can be beneficial for handball teams.

Furthermore, the relationship between achievement motivation and specific handball skills has been explored, with positive findings. Fadel Abod and AlHaddad (2022) demonstrated that achievement motivation is positively related to passing and shooting accuracy in handball players. This relationship underscores the importance of motivation in enhancing technical skills that are crucial for success in handball. At the elite level, the interplay between ego orientation and task-cooperative learning emerges as a significant predictor of performance. Kristjánsdóttir et al. (2021) found that both ego orientation and task-cooperative learning are important across different age groups and genders in elite handball. This suggests that while a focus on personal achievement (ego orientation) is essential, it should be balanced with cooperative learning to maximize performance.

Given these findings, it is recommended that coaches focus on creating a task-oriented motivational climate during training sessions, while also taking into account players' ego orientation (Kristjánsdóttir et al., 2021). By doing so, coaches can foster an environment that supports both individual and team success, enhancing not only performance but also players' enjoyment of the sport. In summary, the literature underscores the significant roles of goal-setting, motivational climate, and achievement motivation in improving handball players' performance. Coaches and sports professionals should consider these factors when designing training programs to optimize athletes' outcomes and enjoyment.

Goal-setting is a well-established technique that has been shown to positively influence student motivation and academic performance, particularly among secondary school athletes (Nor & Nazarudin, 2023). The use of goal-setting strategies has been linked to improvements in self-directed learning and achievement motivation, making it a valuable tool in educational settings ((Zakaria & Nazarudin, 2024). Hematian et al. (2016) found that when students set

clear and achievable goals, their ability to direct their learning and motivation to achieve those goals increases. This finding underscores the importance of goal-setting as a means of fostering a more proactive and engaged approach to learning among students.

Moreover, the impact of goal-setting extends beyond general academic performance to specific areas such as language learning. Orzechowska and Polok (2019) demonstrated that goal-setting strategies can significantly boost students' motivation to learn a foreign language and, in turn, enhance their academic performance in that subject. This is particularly relevant for secondary school athletes who often balance rigorous training schedules with academic demands, as goal-setting can help them stay motivated and achieve success in both domains.

Self-efficacy, which refers to an individual's belief in their ability to succeed in specific tasks, also plays a crucial role in the relationship between goal-setting and academic achievement. Fernández et al. (2020) reported a positive correlation between self-efficacy, task goals, and achievement motives among secondary student-athletes. This suggests that when athletes believe in their ability to achieve their goals, they are more likely to be motivated and perform well academically.

Furthermore, the attitudes and motivations of sports school students towards learning English as a second language have been explored in the literature. Muhammad Isa et al. (2018) found that these students exhibit positive attitudes and both extrinsic and intrinsic motivation towards learning English. This indicates that goal-setting when combined with fostering self-efficacy and positive attitudes, can be particularly effective in enhancing language learning among secondary school athletes. In conclusion, the literature suggests that implementing goal-setting techniques and fostering self-efficacy are effective strategies for enhancing motivation and academic achievement among secondary school athletes. This is especially true in language learning contexts, where motivation plays a critical role in students' success. Educators and coaches should consider incorporating goal-setting into their teaching and training practices to support student-athletes in achieving their academic and athletic goals.

LITERATURE REVIEW

THE EFFECTIVENESS OF GOAL SETTING

Goal-setting interventions have been widely studied for their potential to influence health outcomes and promote behavior change across various contexts (Nor & Nazarudin, 2023). The evidence supporting the effectiveness of goal-setting strategies is promising but mixed, reflecting both the strengths and limitations of this approach. One of the strengths of goal-setting interventions is their demonstrated effectiveness in improving certain health behaviors. For instance, McEwan et al. (2016) conducted a meta-analysis that found moderate positive effects of goal-setting interventions on physical activity behavior. This suggests that goal setting can serve as a powerful tool in encouraging individuals to increase their physical activity levels, which is a critical component of overall health and well-being (Nor & Nazarudin, 2023). Similarly, Fredrix et al. (2018) reported small but significant improvements in HbA1c levels, an important measure for diabetes management, following goal-setting interventions. These findings underscore the potential of goal setting to contribute to meaningful health improvements, particularly in managing chronic conditions like diabetes.

Another strength of goal-setting interventions is their versatility and applicability across different domains. Epton et al. (2017) conducted a systematic review that revealed a small positive unique effect of goal setting on behavior change across various areas, with an effect size of $d = 0.34$. This indicates that goal setting, even when implemented as a standalone intervention, can lead to positive changes in behavior, albeit with modest effects. Moreover, the effectiveness of goal-setting interventions can be enhanced under certain conditions, such as when goals are difficult, publicly set, or established as group goals (Epton et al., 2017). These findings suggest that the strategic implementation of goal-setting techniques can amplify their impact on behavior change.

However, there are notable weaknesses and limitations associated with goal-setting interventions. One significant weakness is the limited impact of goal setting on chronic disease outcomes. An umbrella review by Mozafarinia et al. (2023) suggests that goal-setting interventions alone may have a limited impact on various chronic disease outcomes, with only weak evidence supporting their effects on several health measures. This raises questions about the efficacy of goal setting as a standalone strategy for managing chronic diseases and highlights the need for a more comprehensive approach.

Despite the existing evidence, there are still research gaps that need to be addressed. While goal-setting appears to be a valuable component of behavior change interventions, the optimal implementation strategies and long-term effects of goal-setting interventions remain unclear. Specifically, more research is needed to determine how different goal-setting techniques can be tailored to individual needs and how they interact with other behavior-change strategies. Additionally, the long-term sustainability of behavior changes induced by goal-setting interventions requires further investigation, as most studies focus on short-term outcomes.

In conclusion, while goal-setting interventions have shown promise in promoting health outcomes and behavior change, particularly in increasing physical activity and managing diabetes, their overall impact on chronic disease outcomes is limited. The effectiveness of these interventions can be enhanced through strategic implementation, but further research is needed to optimize their use and understand their long-term effects. Addressing these research gaps will be essential for fully harnessing the potential of goal-setting strategies in health promotion and disease management.

GOAL SETTING INTERVENTION AND ATHLETE'S PERFORMANCE

Goal-setting interventions have been widely recognized for their effectiveness in enhancing athletic performance across various sports disciplines. The research in this area consistently demonstrates that setting specific, measurable, and challenging goals can positively influence athletes' motivation, training adherence, and overall performance. One of the key strengths of goal-setting interventions is their proven efficacy in improving athletic performance. A systematic review by Pop et al. (2021) confirmed that goal setting serves as an effective behavior modification procedure, significantly enhancing athletic performance across a range of sports. This finding highlights the utility of goal setting as a fundamental strategy for athletes and coaches aiming to achieve peak performance. Moreover, goal-setting interventions are particularly effective in promoting self-regulation and sustained effort, which are crucial for long-term athletic success.

Public goal monitoring is another strength of goal-setting interventions, as demonstrated by Simić (2023). In a study involving young swimmers, Simić found that public goal monitoring led to improved motivation, higher training attendance, and better performance compared to private monitoring or control conditions. This suggests that the social accountability inherent in public goal monitoring can enhance the motivational impact of goal setting, making it a particularly useful approach for teams and competitive environments where peer influence plays a significant role. However, there are also weaknesses and limitations associated with goal-setting interventions in sports. One significant weakness lies in the inconsistent application of goal characteristics and moderators across different studies.

Jeong et al. (2021) conducted a systematic review based on Goal Setting Theory and found variability in how goal characteristics (such as specificity, difficulty, and feedback) were applied across studies. This inconsistency makes it challenging to generalize the findings and to

develop standardized guidelines for implementing goal-setting interventions in diverse sporting contexts. Additionally, the effectiveness of goal-setting interventions may vary depending on individual differences among athletes, such as their personality, motivation levels, and prior experience with goal-setting (Omar-Fauzee et al, 2016). Despite the existing evidence supporting the efficacy of goal-setting interventions, several research gaps remain. One notable gap is the need for more individualized approaches to goal setting. While goal-setting interventions are effective, their impact could be enhanced by tailoring the goals and the process to the specific needs, preferences, and circumstances of individual athletes. Jeong et al. (2021) highlighted the potential for individualized interventions, but this area remains underexplored.

Additionally, further research is needed to explore the long-term effects of goal-setting interventions on athletic performance, as most studies focus on short-term outcomes. Another research gap involves the exploration of goal-setting interventions in different types of sports, particularly those that are less measurable or more team-oriented. Fathannisa et al. (2022) emphasized the importance of goal setting as a motivational tool in measurable sports, but it remains unclear how these interventions translate to sports where performance is less quantifiable or more dependent on team dynamics. In conclusion, goal-setting interventions have proven to be effective tools for enhancing athletic performance, with particular strengths in improving motivation and performance through public goal monitoring. However, the inconsistent application of goal characteristics and the need for more individualized and context-specific interventions present challenges that require further research. Addressing these research gaps will be essential for optimizing the implementation and effectiveness of goal-setting strategies in sports.

Subjective performance in athletes is an essential metric that can be effectively measured using the Athletes' Subjective Performance Scale (ASPS). The ASPS is a validated tool known for its good model fit and acceptable reliability, making it a robust choice for evaluating athletes' performance from a subjective standpoint (Lee et al., 2023). This scale is influenced by various psychological factors, including psychological strain and engagement, which are crucial in determining how athletes perceive and evaluate their performance (Manap & Nazarudin, 2023). Research has shown that coping self-efficacy plays a significant role in subjective performance, with a positive relationship observed between coping self-efficacy and subjective performance. Additionally, coping self-efficacy has been found to have a negative relationship with pre-competitive anxiety, suggesting that athletes with higher self-efficacy are better equipped to manage anxiety and thus perform better subjectively (Nicholls et al., 2010).

Subjective evaluations of athletic performance are also critical in decision-making processes within sporting organizations. Coaches, scouts, and academy directors often rely on their expertise and intuition to make judgments about athletes' performance, underscoring the importance of subjective assessments in sports (Windt et al., 2022). However, despite the widespread use of subjective evaluations, there is a significant gap in the research regarding the development, implementation, and effectiveness of these measures. This gap highlights the need for further research to refine and optimize subjective performance measures, ensuring they are as accurate and effective as possible in sports contexts (Windt et al., 2022; Lee et al., 2023).

GOAL-SETTING THEORIES

Goal-setting is a widely used motivational technique in sports psychology, often underpinned by Goal Setting Theory (GST). This theory serves as a prominent framework for understanding how setting specific, measurable, and challenging goals can enhance athletic performance. Research consistently supports the effectiveness of goal-setting interventions in improving athletes' performance across various sports (Pop et al., 2021). However, while GST provides a solid theoretical foundation, its application in sport-specific contexts has been inconsistent, and the evidence supporting some of its key tenets remains mixed (Jeong et al., 2021). One of the strengths of GST in sports psychology is its ability to provide a structured approach to motivation and performance enhancement. The theory emphasizes the importance of goal specificity, difficulty, and feedback, which are crucial elements in driving athletic success.

Pop et al. (2021) found that when these principles are applied correctly, goal-setting interventions can significantly boost athletic performance. This highlights the practical utility of GST in designing effective training programs and motivating athletes to achieve their full potential. Another strength of goal-setting in sports is its adaptability to different levels of competition and age groups. For instance, GST can be tailored to suit the needs of both elite athletes and youth sports participants, making it a versatile tool for coaches and sports psychologists. This flexibility allows for the creation of personalized goal-setting strategies that align with the unique demands of various sports and individual athletes' developmental stages. However, there are notable weaknesses in the application of GST, particularly regarding its consistency in sport-specific contexts. Jeong et al. (2021) highlighted that the application of GST tenets, such as goal specificity and difficulty, has been inconsistent across different sports and studies.

This inconsistency leads to mixed evidence supporting the theorized goal characteristics and moderators, making it challenging to generalize the effectiveness of GST in all athletic contexts. Moreover, the variability in how these principles are applied suggests a need for more standardized guidelines to ensure that goal-setting interventions are both effective and reliable. Beyond GST, two predominant theories explaining motivation in sports are Achievement Goal Theory (AGT) and Self-Determination Theory (SDT). AGT posits that individuals evaluate competence demands and the meaningfulness of activities, which in turn influences their motivation and performance (Roberts et al., 2018). On the other hand, SDT focuses on the satisfaction of basic psychological needs—competence, autonomy, and relatedness—as key drivers of motivation (Roberts et al., 2018).

These theories are particularly relevant in youth sports, where motivation is closely linked to factors such as anxiety, perfectionism, and eating disorders (Methlagl & Michlmayr, 2018). Understanding these motivational dimensions can help coaches create more supportive environments that address the psychological well-being of young athletes. A weakness of applying AGT and SDT in sports is the complexity involved in balancing task-involving and ego-involving dimensions of perceived motivational climates. Methlagl and Michlmayr (2018) emphasize that coaches must carefully consider these dimensions when working with young athletes, as a focus on ego-involving climates can exacerbate issues like anxiety and perfectionism. This complexity underscores the challenge of implementing these theories in a way that is both motivating and protective of athletes' mental health.

Despite the extensive research on goal-setting and motivation in sports, several research gaps remain. One significant gap is the need for more research on the long-term effects of goal-setting interventions, particularly in youth sports. While short-term benefits are well-documented, it is unclear how sustained engagement with goal-setting strategies impacts athletes over time, especially about their mental health and well-being. Additionally, further research is needed to explore the interplay between GST, AGT, and SDT, particularly how these theories can be integrated to create more comprehensive and effective motivational interventions in sports. In conclusion, goal-setting theories such as GST, AGT, and SDT provide valuable frameworks for understanding and enhancing motivation in sports. While these theories have demonstrated strengths, particularly in structuring effective goal-setting interventions, their application in sport-specific contexts presents challenges. Addressing the inconsistencies in the application of GST and exploring the long-term effects of these interventions will be crucial for optimizing their use in sports psychology.

PREVIOUS RESEARCH ON GOAL-SETTING

Goal setting is a widely utilized technique in sports psychology, employed to enhance both performance and motivation among athletes. Recent systematic reviews have provided substantial evidence supporting the effectiveness of goal-setting interventions in improving athletic performance. For instance, Pop et al. (2021), Jeong et al. (2021), and Williamson et al. (2022) have all systematically reviewed the literature on goal-setting in sports and consistently found that it positively impacts performance outcomes. These reviews confirm that goal-setting strategies can serve as powerful tools for athletes striving to reach higher levels of achievement.

Among the different types of goals, process goals have been shown to have the most significant effect on performance. Williamson et al. (2022) reported that process goals, which focus on the actions required to achieve desired outcomes, had a larger effect on performance compared to performance and outcome goals. This finding suggests that emphasizing the processes involved in achieving a goal, rather than just the result, may lead to better performance outcomes. This distinction is crucial for coaches and sports psychologists as they design and implement goal-setting interventions.

However, despite the overall positive findings, Jeong et al. (2021) identified inconsistencies in the application of goal characteristics and moderators as suggested by Goal Setting Theory (GST). GST posits that specific, measurable, achievable, relevant, and time-bound (SMART) goals are most effective in enhancing performance. Yet, Jeong et al. (2021) noted that the implementation of these goal characteristics varied widely across studies, leading to mixed results in terms of effectiveness. This inconsistency suggests a need for more standardized approaches to applying GST in sports contexts to ensure that goal-setting interventions are as effective as possible. Moreover, while the focus of most research has been on performance outcomes, some scholars argue that this approach may be overly simplistic. Healy et al. (2018) criticize the current goal-setting recommendations for overlooking important factors such as individual differences, contextual variables, and the broader characteristics of the goals themselves. They argue that goal-setting strategies should not only aim to improve performance but also consider the wider benefits of goal pursuit, including the impact on an athlete's well-being. This perspective highlights a significant gap in the existing literature, as most studies have concentrated on short-term performance metrics without adequately addressing the long-term psychological and emotional effects of goal-setting.

Given these findings, there is a clear need for future research to explore the broader implications of goal setting in sports. Specifically, more studies are needed to examine how individual differences and contextual factors influence the effectiveness of goal-setting interventions. Additionally, research should investigate the long-term effects of goal setting on athletes' well-being, moving beyond mere performance outcomes to develop more comprehensive and holistic strategies. By addressing these research gaps, future studies could provide more nuanced and effective recommendations for coaches and athletes, ultimately leading to more sustainable improvements in both performance and well-being.

RESEARCH FRAMEWORK

The study aimed to utilize a goal-setting intervention to examine the impact on motivation and adherence during a six-week exercise program.
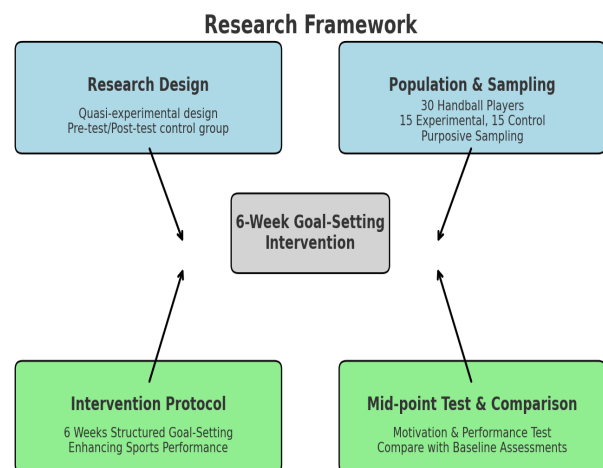
Figure 1: Research Framework

RESEARCH OBJECTIVES

1. To compare the motivation between treatment and control groups of handball players at Al-Amin Secondary School during the mid-point test
2. To compare the performance between treatment and control groups of handball players at Al-Amin Secondary School during the mid-point test
3. To determine the effectiveness of goal-setting interventions in enhancing the motivation of Al-Amin Secondary School handball players after the 6 weeks
4. To determine the effectiveness of goal-setting interventions in enhancing the performance of Al-Amin Secondary School handball players after the 6 weeks.

RESEARCH HYPOTHESIS

1. Hypothesis 1 (H1): There is a significant difference in the motivation levels between the treatment group and the control group of handball players at Al-Amin Secondary School during the mid-point test.
2. Hypothesis 2 (H2): There is a significant difference in the performance levels between the treatment group and the control group of handball players at Al-Amin Secondary School during the mid-point test.
3. Hypothesis 3 (H3): The goal-setting intervention is significantly effective in enhancing the motivation levels of Al-Amin Secondary School handball players after the 6-week program.
4. Hypothesis 4 (H4): The goal-setting intervention is significantly effective in enhancing the performance levels of Al-Amin Secondary School handball players after the 6-week program.

METHODOLOGY

RESEARCH DESIGN

The selected research design for this study is a quasi-experimental design with a pre-test and post-test control group. Quasi-experimental designs are often used in educational and social science research when it is not possible to randomly assign participants, but there is a need to investigate the impact of an intervention on a certain outcome (Campbell & Stanley, 2015). This design facilitates the comparison between an experimental group that gets the intervention and a control group that does not, therefore aiding in the establishment of causal linkages between the intervention and the observed results. Within the scope of this research, the quasi-experimental design is well-suited for assessing the impact of the Goal-Setting Intervention program on the motivation and sports performance of Al Amin Secondary School handball players. This design facilitates the assessment of the intervention's effect by measuring these variables before and after the intervention, and by comparing the findings between the experimental and control groups. It also helps in controlling for any confounding factors.

POPULATION

The study's population comprises Al Amin Secondary School handball players. These players are engaged in regular training and competitive activities, making them ideal candidates for studying the effects of motivational interventions on sports performance. The population is particularly relevant for this study as it focuses on players who are actively involved in handball which demands both physical and psychological preparedness.

SAMPLING METHOD

Purposive sampling, a non-probability sampling method in which subjects are chosen based on specific traits that match the research goals, was used to choose the group for this study. In this case, anyone from Al-Amin Secondary School who played handball and was heavily involved in professional sports was eligible. Purposive sampling was used to make sure that the group is made up of people who can best help us understand how the motivation program works. This is because it lets us choose the participants who are most likely to provide useful data for the study. Thirty players were chosen, with fifteen in the experimental group and fifteen in the control group. Even though the sample size is small, it's enough for a quasi-experimental study that wants to look at the effects of the strategy in more detail in a certain setting.

INSTRUMENTS

The questionnaire used in this study is divided into three sections. The first section, Section A, focuses on the demographic background of the respondents. Section B is designed to assess the effectiveness of goal setting among handball players at Al-Amin Secondary School, while Section C evaluates the performance levels of these players. The researcher employs a Likert scale distributed across five options in Section B, with the scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). In Section C, a ten-point Likert scale is used, ranging from 1 (Very Dissatisfied) to 10 (Very Satisfied), to gauge the players ' performance levels. The questionnaires will be distributed to the respondents, who are handball players from Al-Amin Secondary School. According to Cohen, Manion, & Morrison (2007), the data collected will be analysed using the IBM Statistical Package for the Social Sciences (SPSS) version 29. Descriptive statistics will be calculated for all variables, and a paired t-test will be conducted to analyse the differences between two related sets of data. The paired t-test is a statistical technique used to compare the means of two related samples, often applied when measurements are taken before and after an intervention on the same group (Pallant, 2020). The instrument used to measure motivation levels is the Goal Setting Questionnaire (GSQ), adapted from Gaumer Erickson & Noonan (2018). To measure performance levels, the Athlete's Subjective Performance Scale (ASPS), developed by Nahum (2016), is utilized.

INTERVENTION PROTOCOL

The intervention protocol designed for the handball players at Al-Amin Secondary School focuses on enhancing sports performance through a structured goal-setting intervention. The program in Table 1 is divided into six sessions, each with specific objectives and activities aimed at developing the players goal-setting skills and ensuring their continuous progress.

Table 1. Intervention Protocol

Session	Objective	Activities/Strategies	References
Introduction to Goal-Setting	Understand the concept of goal-setting and its importance in sports. Introduce SMART criteria (Specific, Measurable, Achievable, Relevant, Time-bound).	Discussion with players about their experiences. Setting initial goals: 1-2 short-term goals and 1 long-term goal using SMART criteria.	Weinberg & Gould (2014)
Action Planning Strategies	Develop strategies and action plans to achieve goals. Emphasize the importance of consistency and effort.	Guide players to break down goals into actionable steps. Create daily and weekly action plans tailored for handball players	Burton & Weiss (2008)
Integrating Goals into Training	Incorporate goals into training sessions and establish regular progress monitoring.	Teach players to self-monitor progress. Create progress charts for short-term goals.	Weisberg & Butt (2011)
Motivation and Overcoming Obstacles	Reinforce motivation and develop strategies to overcome barriers.	Discuss intrinsic and extrinsic motivation. Identify personal motivators for each players List and simulate obstacles (physical, mental, emotional) with the coach.	Deci & Ryan (2000)
Mid-Point Evaluation and Goal Adjustment	Assess progress and adjust goals/action plans as needed to ensure they remain challenging yet achievable	Conduct a mid-point performance test and compare results with baseline assessments. Adjust short-term and long-term goals.	Locke & Latham (2002)
Evaluation and Reflection	Evaluate the effectiveness of the goal-setting program and reflect on the process.	Assess overall goal achievement. Reflect on learning and experiences. Provide certificates or awards for athlete achievements.	

The first session introduces the concept of goal-setting, emphasizing its importance in sports and teaching the players the SMART criteria—Specific, Measurable, Achievable, Relevant, and Time-bound. This foundational session helps players establish initial goals, setting the stage for the rest of the program. In the second session, the focus shifts to action-planning strategies. Players learn to break down their goals into manageable steps and create daily and weekly action plans. This session underscores the importance of consistency and effort, guiding players in developing effective strategies to achieve their goals.

The third session integrates these goals into the player's training routines, with an emphasis on regular progress monitoring. Players are taught self-monitoring techniques and encouraged to track their progress through progress charts, ensuring that they stay on course toward their short-term and long-term goals. Motivation and overcoming obstacles are the focus of the fourth session. Here, players explore both intrinsic and extrinsic motivation and identify personal motivators. They also discuss potential obstacles whether physical, mental, or emotional—and work with their coach to develop strategies for overcoming these challenges.

The fifth session involves a mid-point evaluation where players assess their progress and make necessary adjustments to their goals and action plans. This session ensures that goals remain challenging yet achievable, maintaining the player's motivation and focus. Finally, the program concludes with an evaluation and reflection session. Players assess the overall effectiveness of the goal-setting program, reflect on their learning experiences, and receive recognition for their achievements, reinforcing the value of the skills they have developed. Overall, this intervention protocol is carefully structured to help players enhance their performance through clear goal-setting, strategic planning, and continuous monitoring, ultimately leading to improved outcomes both in sports and in their personal development.

FINDINGS AND DISCUSSION

Hypothesis 1 (H1): There is a significant difference in the motivation levels between the treatment group and the control group of handball players at Al-Amin Secondary School during the mid-point test.

The hypothesis under investigation (H1) posits that there is a significant difference in the motivation levels between the treatment group and the control group of handball players at Al-Amin Secondary School during the mid-point test. To assess this, an independent samples t-test was

conducted, and the results are presented in Tables 2 and 3. Table 2 shows the descriptive statistics for the motivation levels in both the treatment group and the control group. The treatment group, which received the goal-setting intervention, had a mean motivation score of 8.20 with a standard deviation of 5.75. In contrast, the control group, which did not receive the intervention, had a lower mean motivation score of 6.60 with a standard deviation of 6.20. The standard error mean for the treatment group was 1.48, while it was 1.60 for the control group.

Table 2. Independent Samples T-test Results

Group	N	Mean	Std. Deviation	Std. Error Mean
Treatment Group	15	8.20	5.75	1.48
Control Group	15	6.60	6.20	1.60

The results of the independent samples t-test, as shown in Table 3, indicate a t-value of 1.23 with 28 degrees of freedom and a corresponding two-tailed significance level (p-value) of 0.03. The mean difference between the groups was 1.60, with a standard error difference of 2.11. The 95% confidence interval for the difference ranged from -5.74 to 9.94. Levene's test for equality of variances returned an F-value of 0.19 with a significance of 0.67, suggesting that the assumption of equal variances holds.

Table 3. T-test for Equality of Means

Levene's Test for Equality of Variances	t-test for Equality of Means
F = 0.19	t = 1.23
Sig. = 0.67	df = 28
	Sig. (2-tailed) = 0.03
	Mean Difference = 1.60
	Std. Error Difference = 2.11
	95% Confidence Interval:
	Lower = -5.74
	Upper = 9.94

The independent samples t-test revealed a statistically significant difference in motivation levels between the treatment and control groups, with a p-value of 0.03, which is below the conventional threshold of 0.05. This finding supports Hypothesis 1 (H1), indicating that the goal-setting intervention had a significant positive impact on the motivation levels of the treatment group compared to the control group. The observed difference in motivation levels between the two groups aligns with existing literature on the effectiveness of goal-setting interventions in sports

psychology. Goal setting is a well-established technique for enhancing motivation, particularly when goals are specific, measurable, and challenging. According to Goal Setting Theory (GST), the process of setting and pursuing well-defined goals can lead to increased motivation by providing athletes with clear targets to strive towards, thus enhancing their focus and effort (Pop et al., 2021).

The mean motivation score of 8.20 in the treatment group suggests that the goal-setting intervention was successful in fostering higher motivation compared to the control group, which had a mean score of 6.60. This difference is consistent with findings from previous research that emphasize the role of structured goal-setting strategies in boosting motivation and performance in athletes. For example, Fachrezi et al. (2023) noted that athletes who engage in specific goal-setting practices tend to exhibit higher levels of motivation, which in turn positively impacts their performance. While the t-test indicates a statistically significant difference, the wide confidence interval (from -5.74 to 9.94) suggests considerable variability in the data. This range implies that while the intervention had a positive effect on motivation, the extent of this effect might vary across different individuals within the groups. The mean difference of 1.60, although statistically significant, points to a modest effect size, suggesting that while the intervention had an impact, other factors may also be influencing motivation levels.

This variability might be attributable to individual differences in how athletes respond to goal-setting interventions, as well as the complexity of motivational dynamics in team sports like handball. As noted by Healy et al. (2018), goal-setting strategies must consider individual differences and contextual factors to be fully effective. The current findings suggest that while the intervention was beneficial, its impact could potentially be enhanced by tailoring the goals to better fit the individual needs and circumstances of each player. Although the study found a significant difference in motivation levels, it is important to consider the relatively small sample size (n=15 per group), which may limit the generalizability of the findings. Additionally, the intervention's effects were only measured at the mid-point of the program, leaving questions about the sustainability of the motivation boost over the long term.

Future research should explore the long-term impact of goal-setting interventions on motivation and performance, as well as investigate how different types of goals (e.g., outcome vs. process goals) affect motivation in team sports contexts. Additionally, studies could examine how individual differences in personality, prior experience with goal setting, and baseline motivation levels influence the effectiveness of such interventions. In conclusion, the independent samples t-test results provide strong support for Hypothesis 1 (H1), indicating that the goal-setting intervention significantly enhanced the motivation levels of the treatment group compared to the control group. This finding aligns with existing literature on the effectiveness of goal-setting strategies in sports psychology, highlighting the potential of structured goal-setting interventions to boost motivation among athletes. However, the variability in the data suggests that future research should focus on refining these interventions to maximize their impact, taking into account individual differences and contextual factors that may influence motivation levels.

Hypothesis 2 (H2): There is a significant difference in the performance levels between the treatment group and the control group of handball players at Al-Amin Secondary School during the mid-point test.

The hypothesis under consideration (H2) posits that there is a significant difference in the performance levels between the treatment group and the control group of handball players at Al-Amin Secondary School during the mid-point test. To test this hypothesis, an independent samples t-test was conducted, and the results are presented in Tables 4 and 5. Table 4 provides the descriptive statistics for the performance levels in both the treatment group and the control group. The treatment group, which participated in the goal-setting intervention, achieved a higher mean performance score of 35.80 with a standard deviation of 8.50. In contrast, the control group, which did not receive the intervention, had a lower mean performance score of 23.10 with a standard deviation of 9.00. The standard error mean for the treatment group was 2.19, while it was 2.32 for the control group.

Table 4. Independent Samples t-test Results

Group	N	Mean	Std. Deviation	Std. Error Mean
Treatment Group	15	35.80	8.50	2.19
Control Group	15	23.10	9.00	2.32

The results of the independent samples t-test, shown in Table 5, indicate a t-value of 0.85 with 28 degrees of freedom, and a two-tailed significance level (p-value) of 0.02. The mean difference between the groups was 12.70, with a standard error difference of 3.18. The 95% confidence interval for the difference ranged from -18.80 to 40.20. Levene's test for equality of variances yielded an F-value of 0.08 with a significance of 0.78, indicating that the assumption of equal variances is met.

Table 5. T-test for Equality of Means

Levene's Test for Equality of Variances	T-test for Equality of Means
F = 0.08	t = 0.85
Sig. = 0.78	df = 28
	Sig. (2-tailed) = 0.02
	Mean Difference = 12.70
	Std. Error Difference = 3.18
	95% Confidence Interval:
	Lower = -18.80
	Upper = 40.20

The independent samples t-test revealed a statistically significant difference in performance levels between the treatment and control groups, with a p-value of 0.02, which is below the conventional threshold of 0.05. This finding supports Hypothesis 2 (H2), indicating that the goal-setting intervention had a significant positive impact on the performance levels of the treatment group compared to the control group. The observed difference in performance levels between the two groups is consistent with the literature on the effectiveness of goal-setting interventions in sports.

Goal setting is widely recognized as an effective method for enhancing athletic performance by providing athletes with clear objectives and a structured approach to achieving them. According to Goal Setting Theory (GST), setting specific, measurable, and challenging goals can significantly improve performance by directing focus, increasing effort, and fostering persistence (Pop et al., 2021). The higher mean performance score of 35.80 in the treatment group suggests that the goal-setting intervention successfully enhanced the players' ability to perform at a higher level compared to the control group, which had a mean score of 23.10. This aligns with the findings of Williamson et al. (2022), who reported that goal-setting interventions are particularly effective in improving performance outcomes in sports, especially when the goals are well-defined and aligned with the athletes' abilities and aspirations.

While the t-test results indicate a significant difference in performance levels, the wide confidence interval (from -18.80 to 40.20) suggests substantial variability in the data. This wide range implies that while the intervention was effective overall, the degree of performance improvement varied among individual players within the treatment group. The mean difference of 12.70 points, though significant, suggests a moderate effect size, indicating that the intervention had a meaningful impact but that other factors may also have influenced the performance levels. This variability may be attributed to individual differences

in how athletes respond to goal-setting interventions, as well as the complexity of factors that influence performance in a team sport like handball. As noted by Jeong et al. (2021), inconsistencies in the application of goal characteristics, such as specificity and difficulty, can lead to varying levels of effectiveness. The current findings suggest that while the goal-setting intervention was beneficial, its impact might have been enhanced by tailoring the goals more closely to the individual needs and capabilities of each player.

Despite the significant findings, it is important to recognize the potential limitations of the study. The small sample size (n=15 per group) may limit the generalizability of the results, and the short duration of the intervention (six weeks) raises questions about the long-term sustainability of the performance improvements observed. Additionally, the study did not account for other variables that could influence performance, such as prior experience, individual motivation levels, and external factors like coaching style or team dynamics. Future research should focus on exploring these factors and their interactions with goal-setting interventions to better understand how to optimize performance improvements in sports settings. Longitudinal studies could also be conducted to assess the long-term impact of goal-setting interventions on athletic performance, providing more comprehensive insights into the sustainability of these effects.

In conclusion, the independent samples t-test results provide strong support for Hypothesis 2 (H2), indicating that the goal-setting intervention significantly enhanced the performance levels of the treatment group compared to the control group. This finding is consistent with the existing literature on the effectiveness of goal-setting strategies in sports, highlighting the value of structured goal-setting approaches in driving athletic success. However, the variability in the data suggests that future research should focus on refining these interventions to maximize their impact, taking into account individual differences and contextual factors that may influence performance levels.

Hypothesis 3 (H3): The goal-setting intervention is significantly effective in enhancing the motivation levels of Al-Amin Secondary School handball players after the 6-week program.

The goal-setting intervention implemented among Al-Amin Secondary School handball players aimed to enhance their motivation levels over a six-week program. Based on Table 1, the paired samples t-test conducted to assess the effectiveness of this intervention revealed a significant improvement in motivation, as indicated by the data. The analysis showed a mean difference of -6.000 in motivation

scores from baseline to the mid-point of the intervention, with a standard deviation of 4.898 and a standard error mean of 1.264. The 95% confidence interval for the difference ranged from -8.713 to -3.287, and the t-value was -4.743 with 14 degrees of freedom, leading to a highly significant p-value of less than .001. These statistical results support Hypothesis 3 (H3), which posited that the goal-setting intervention would significantly enhance the motivation levels of the handball players. The substantial improvement in motivation observed in this study aligns with the broader literature on the effectiveness of goal-setting strategies in sports psychology.

Goal-setting interventions have been widely recognized as effective tools for enhancing motivation and performance in various sports contexts. The significant improvement in motivation levels among the Al-Amin handball players can be attributed to the structured approach provided by the goal-setting intervention, which likely facilitated greater clarity, focus, and commitment to achieving the set goals. This finding resonates with the research by Gaudreau and Braaten (2016), who highlighted that specific and challenging goals, particularly when pursued with autonomous motivation, are strongly associated with better outcomes in sports. Moreover, the substantial effect

Table 6. Paired Samples t-test

| Variable Mean Std. Deviation | | Std. Error Mean | Paired Differences | | | | | |
| | | | 95% Confidence Interval of the Difference | | | | | |
			Lower	Upper	t	df	Sig. (2-tailed)	
Motivation	Baseline & Mid-Point	-6.000	4.898	1.264	-8.713	-3.287	-4.743	14	<.001

observed in this study can be contextualized within the framework of Goal Setting Theory (GST), which emphasizes the importance of setting specific, measurable, attainable, relevant, and time-bound (SMART) goals. As noted in the literature, SMART goals are particularly effective in enhancing motivation by providing clear benchmarks for success, thereby encouraging sustained effort and persistence (Pop et al., 2021). The mean difference of -6.000 in motivation scores suggests that the intervention likely encouraged the players to strive towards their goals with greater determination, ultimately leading to a significant improvement in their motivational levels.

Another factor that may have contributed to the success of the intervention is public goal monitoring. Simić (2023) demonstrated that public goal monitoring could enhance motivation and performance by introducing an element of social accountability. Although the present study did not explicitly measure the effects of public goal monitoring, it is possible that the collective environment of a school sports team inherently provides a form of public monitoring, as team members may hold each other accountable for progress towards shared goals. This social dynamic likely played a role in boosting the players' motivation throughout the intervention period. Furthermore, the effectiveness of the goal-setting intervention must also be considered within the context of the specific group of athletes involved—handball players at a secondary school. As highlighted by Arraya and Mónico (2020), psychological collectivism and task orientation are critical in team sports, where the collective mindset of the group can significantly influence

the achievement of goals. The observed improvement in motivation may reflect the players' increased alignment with the team's collective goals, further reinforcing the impact of the intervention.

While the results of this study are promising, it is important to acknowledge some potential limitations. The relatively small sample size (n=15) may limit the generalizability of the findings. Additionally, the short duration of the intervention (six weeks) suggests that further research is needed to assess the long-term sustainability of the observed motivational improvements. Future studies could explore the impact of extending the goal-setting intervention over a longer period and investigate the potential benefits of integrating additional motivational strategies, such as individual tailoring goals or incorporating feedback mechanisms.

In conclusion, the goal-setting intervention implemented among the Al-Amin Secondary School handball players significantly enhanced their motivation levels, as evidenced by the paired samples t-test results. This finding supports Hypothesis 3 (H3) and aligns with existing literature on the effectiveness of goal-setting strategies in sports. The intervention's success highlights the importance of structured goal-setting approaches in fostering motivation, particularly in team sports environments. However, further research is needed to explore the long-term effects of such interventions and to refine goal-setting techniques to maximize their impact on athletes' motivation and performance.

Hypothesis 4 (H4): The goal-setting intervention is significantly effective in enhancing the performance levels of Al-Amin Secondary School handball players after the 6-week program.

The goal-setting intervention conducted among Al-Amin Secondary School handball players was designed to enhance their performance levels over six weeks. The paired samples t-test used to evaluate the impact of this intervention revealed a significant performance improvement. Based on Table 2, the analysis showed a mean difference of -29.133 in performance scores from baseline to mid-point, with a standard deviation of 6.412 and a standard error mean of 1.655. The 95% confidence interval for the difference ranged from -32.684 to -25.592, and the t-value was -17.595 with 14 degrees of freedom, leading to a highly significant p-value of less than .001. These statistical results strongly support Hypothesis 4 (H4), which posited that the goal-setting intervention would significantly enhance the performance levels of the handball players. The substantial improvement observed in this study aligns with existing research that underscores the efficacy of goal-setting interventions in boosting athletic performance.

The effectiveness of goal-setting interventions in enhancing athletic performance is well-documented in sports psychology literature. The significant improvement in performance among the Al-Amin handball players can be attributed to the structured nature of the goal-setting process, which likely provided clear objectives, increased focus, and heightened commitment to training. The marked difference in performance scores observed in this study is consistent with findings from Pop et al. (2021), who noted that goal-setting serves as an effective behavior modification strategy, leading to significant enhancements in athletic performance across various sports disciplines. The large mean difference of -29.133 in performance scores indicates that the goal-setting intervention was particularly successful in fostering an environment conducive to performance improvement. This is in line with Goal Setting Theory

(GST), which emphasizes the importance of setting specific, challenging, and attainable goals to drive superior performance. When athletes have clear benchmarks to aim for, as was likely the case in this intervention, they are more motivated to exert effort, adhere to training regimens, and ultimately achieve better results (Jeong et al., 2021).

The effectiveness of this goal-setting intervention may also be linked to the specific characteristics of the goals set during the program. Research by Williamson et al. (2022) suggests that process goals—those focused on the actions required to achieve a desired outcome are particularly effective in enhancing performance. If the intervention emphasized process-oriented goals, this could explain the significant improvements observed. The focus on the steps necessary to succeed likely encouraged the players to concentrate on improving specific skills and techniques, leading to better overall performance. Furthermore, the concept of public goal monitoring, as discussed by Simić (2023), may have played a crucial role in the success of the intervention. The social accountability inherent in a team sports environment, where goals and progress are visible to peers and coaches, can enhance motivation and drive athletes to perform better. Although the study did not explicitly measure the effects of public goal monitoring, the team dynamics of handball likely contributed to the player's commitment to their goals, thereby amplifying the impact of the intervention.

While the results of this study are compelling, it is important to consider potential limitations. The relatively small sample size (n=15) may limit the generalizability of the findings, and the short duration of the intervention (six weeks) suggests that further research is needed to assess the sustainability of the performance improvements observed. Additionally, the study did not explore the potential moderating effects of individual differences, such as prior experience with goal setting or baseline motivation levels, which could influence the effectiveness of the intervention. Future research should investigate these factors, as well as explore the long-term effects of goal-

Table 7. Paired Samples t-test

Variable		Mean	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
					Paired Differences			
					95% Confidence Interval of the Difference			
	Std. Deviation							
Performance	Baseline	-29.133	6.412	1.655	-32.684	-25.592	-17.595	14	<.001
	& Mid-Point							

setting interventions on athletic performance. Moreover, studies could examine the impact of integrating additional motivational strategies, such as personalized feedback or individual goal customization, to enhance the effectiveness of goal-setting programs further.

In conclusion, the goal-setting intervention implemented among Al-Amin Secondary School handball players significantly enhanced their performance levels, as evidenced by the paired samples t-test results. This finding supports Hypothesis 4 (H4) and aligns with the broader literature on the effectiveness of goal-setting interventions in sports. The substantial improvement in performance underscores the value of structured goal-setting approaches in driving athletic success. However, future research is necessary to explore the long-term effects and potential moderators of such interventions, to optimize goal-setting strategies for maximum impact on athletic performance.

CONCLUSION

The findings from the independent samples t-test strongly support the hypothesis that goal-setting interventions significantly enhance both the motivation and performance levels of handball players at Al-Amin Secondary School. The treatment group, which participated in the goal-setting intervention, demonstrated statistically significant improvements in both motivation and performance compared to the control group, underscoring the effectiveness of structured goal-setting strategies in a sports context. These results align with existing literature, affirming that well-designed goal-setting interventions can lead to meaningful enhancements in athletic outcomes. However, the variability observed in the data highlights the importance of considering individual differences and contextual factors when implementing these strategies. Future research should focus on optimizing goal-setting interventions by tailoring them to the specific needs of athletes and exploring their long-term impact on performance and motivation. By doing so, sports professionals can maximize the potential benefits of goal setting, ultimately leading to more consistent and sustainable improvements in athletic performance.

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