INTERNATIONAL JOURNAL OF PHYSICAL EDUCATION, SPORTS AND HOLISTIC DEVELOPMENT

Shared Hydration Practices in Competitive Sports: Assessing Hygiene Behaviour and Potential Disease Transmission Risks Among Athletes

Daitey William [1*], Oppong Bamfoa Christiana [2], Owusu PaninKwame Baah [3]
[1] Department of Product Design and Entrepreneurship, Techbridge University College of Design and Technology, Ghana
[2] Fogelman College of Business and Economics; Department of Management, University of Memphis, USA
[3] Department of Jewellery Design, Techbridge University College of Design and Technology, Ghana

* Corresponding Author: **Daitey William**

Article Info

P-ISSN: 3051-3480
E-ISSN: 3051-3499
Impact Factor (RSIF): 8.56
Volume: 02
Issue: 01
Received: 16-01-2026
Accepted: 14-02-2026
Published: 12-03-2026
Page No: 27-39

Abstract
The problem of hydration is a significant aspect of sports performance, and the hygiene-related hydration in sports environments has been understudied. This paper has discussed hydration practices which are common among the athletes and has established the risk of hygiene and spread of diseases in sporting activities through the use of shared water bottles. Using a qualitative case study approach, semi-structured interviews were carried out, and field observations of athletes, coaches, and sports support staff of selected team sports were carried out. The findings revealed that the exchange of bottles during training and competitions was widely embraced by sports competitions and that frequently occurred without conscious consideration of the question of hygiene. Many of them reported that they knew very little about the potential of microorganism transmission to another individual through the use of a common drinking vessel salivated. Competitive sports occur at a very fast rate, convenience, and tradition of teams contributed to the upkeep of the behaviours. The study also found out that institutional policies which controlled the practices of hydration were not quite prevalent particularly in amateur sports. However, participants reported that they were willing to adopt the safer hydration behaviours should they be informed about the possible health risks. The findings suggest that more attention should be paid to the emphasis on hygiene education, the structure of the hydration management systems, and the policies in the institutions that promote the usage of bottles on an individual basis in sport facilities. Such behavioural aspects may be mitigated to contribute to preventing infections and safeguarding health of the athlete in the sporting contexts.

Keywords: hygiene in sports, hydration, athletes, disease spread, sports health

Introduction

Water is a crucial component of physical activity and homeostasis during sporting activity. Sufficient fluid intake can be helpful to maintain thermoregulation, cardiovascular stability and mental performance during vigorous exercise (Zhao *et al*., 2023). Therefore, water bottles tend to be kept on the sidelines, touchlines or the team benches so that the players could easily have quick rehydration after a short break in the play. These bottles are commonly combined in a team arrangement, in many sporting environments such as in football, athletics, basketball and rugby, where players can take the drinks within a limited time period before returning to the field to play the game (Kingsley *et al*., 2014). Though such a practice may appear as the normalcy and as a convenient one, the hygiene behaviour and probability of spreading the disease among the athletes do raise some critical questions.

Sport settings have been well known to be susceptible to the transmission of infectious disease in that in most instances, physical contact is made, equipment and lights are shared with one another. Such conditions, which involve locker rooms, training facilities and shared equipment are where athletes work, and they face the risks of transmitting microbes in case they fail to

observe proper hygiene (Oppliger & Bartok, 2002). The source of infectious parties that can be transmitted within athletic facilities based on research done in the field of sports medicine can be quickly summarized as following, that is, direct physical contact, physical contact with contaminated surfaces and equipment, and the sharing of personal items such as towels, protective clothing, and drinking containers. Since the majority of athletes can be slightly cut, abrased, or even exposed to oral conditions during the game, the sports environment can provide good conditions to the spread of the pathogen unless preventive measures are observed (Khan *et al*., 2025).

One of the behaviours that have received relatively less scholarly attention is sharing of hydration containers, water bottles used during the competition and training. The majority of team games tend to have players get the nearest bottle on the sideline or equipment shelf without verifying whether it is theirs or not (Montain, 2008). In different situations, players of the same team may purposely share bottles during brief hydration breaks between games. Although this practice is often guided by the demands of competitive sport, and the need to replace fluids within a limited time frame, it poses a risk of saliva contamination between the people. Saliva has been found to host a wide range of microorganisms including bacteria, causes of oral and respiratory infections. The pathogens can be indirectly transmitted among the athletes by a person drinking a bottle nozzle or a mouthpiece and then transmitting the pathogen to another person.

According to research in the field of sports health, lack of cleanliness and sharing of personal facilities can unintentionally lead to contraction of infectious diseases among the sportsmen. The study of sports related infections has also linked the outbreaks of some of the pathogens such as the enteroviruses to unnecessary hygiene such as the use of drinking vessels which were shared by many at the sporting venues (Kaminski, 2016). Similarly, there are health principles on sporting hygiene that indicate that athletes must not use the same water bottles as they can spread the viruses and bacteria through sharing water bottles. Besides the hydration equipment, sharing of other personal items such as towels, clothes and grooming products has also been established to contribute towards the outbreaks of infections among sports teams (Luijten *et al*., 2023).

However, this collective hydration behaviour is widely practised at many levels of sport, amateur and school competitions, and professional leagues. This may be in part due to the long-term team cultures whereby equipment is shared and hygiene risks are compromised (Campa, 2023). In addition, the hectic lifestyle of most sporting activities does not appeal to the athletes who need to find time to find their own bottles before consuming a short drink during short breaks. Advertisement on television during major sports activities often portrays players picking bottles left on the field, or near the team bench, which makes it seem like this is a normal and acceptable activity. However, with the shift in the consciousness of the population, in particular, after the outbreaks of infectious diseases in the world, there is now a new orientation towards hygiene in the sports world (Doherty *et al*., 2024).

Recent sports medicine guidelines have emphasized the importance of the infection control practices, including using personal hydration devices, proper equipment maintenance, and enhancing the degree of athlete education regarding the hygiene practice. As an example, even now there are several sport health organizations, which propose that each athlete should possess a clearly marked personal water bottle to train and compete and disperse with communal ways of hydration. These are suggestions that carry a growing realization that even slight behavioural shifts in sport have a broader implication on the wellbeing and security of players (Paul *et al*., 2022).

Nevertheless, the empirical research on the perceptions and behaviours of both athletes and their awareness on the common hydration practices is minimal. The questions to be answered are also too many: Do sportsmen know the potential health risks of sharing water bottles? Do coaches and sports administrators act in adopting hygiene measures? How do culture norms in sports clubs influence such behaviours? The following questions should be answered to determine the effective health education and infection-prevention technologies in the athletic communities.

It is on this basis that the present research paper examines the general hydration behaviour in competitive sports with the focus on such behaviour as hygiene behaviour and the potential of spreading diseases amongst sportsmen. The research will address the gap in the existing literature on sports health and infection prevention because it will examine the attitudes, practices, and awareness of hygiene guidelines among athletes during hydration breaks. Lastly, the understanding of such behaviours might be applied to develop policies and educative interventions that may help to promote safer hydration behaviours in the athletic context.

Water is an essential component in the functioning of sporting activities and health-making in sporting events. Water bottles are reportedly a common occurrence on the sidelines or benches of teams in most competitive sports environments to allow the competitors to conveniently refill themselves once the play has been called (Rowlands *et al*., 2022). The practice will assist in the ideal physical performance but in most instances, there will be informal and uncontrolled bottle usage patterns. In some cases, athletes would pick the nearest available bottle that is easy to carry without looking at the ownership and in other cases, teammates are ready to share bottles of drinks during momentary breaks during the game. Although this behaviour may be innocent, and it has been established as a norm in most sporting cultures, it has serious problems, which involve hygiene and the possibility of the saliva being transmitted among athletes.

Sports settings are known as environments where infectious diseases may easily be spread due to the close physical contact, sharing of the facilities and using of shared equipment (Moreland *et al*., 2023). Previous studies in the field of sports medicine have emphasized the risk of transmitting pathogens via the use of common personal equipment such as towels, protective gear and grooming equipment. However, not a lot has been conducted on the hygiene implication of collective hydration behaviour in sporting events. As saliva may contain various species of bacteria and viruses that can cause oral and respiratory infections and systemic diseases, it is possible that the community utilization of water bottles may be among the vectors of disease transmission in the sports groups (Schulze & Busse, 2024).

Despite the fact that the problem of prevention of infections in sports is gaining popularity in recent times, particularly, after the global health pandemics, there is a lack of empirical

data available that pays attention to the problem of awareness, attitude and behaviour of athletes in connection to bottle-sharing practices. That there is no apparent data on behaviour and institutional rules in most sporting situations suggests that such data ought to be explored methodically. It is significant to know how hydration hygiene is perceived by sporting people and whether preventive behaviour exists to come up with effective health education and improve the health and safety of sporting environments.

Although the literature available in the sphere of sports medicine has already dealt with the issue of influenza of infectious diseases in sports facilities, most studies have mainly focused on direct physical contact, skin infections or the spread of the disease through shared protection equipment (Anam *et al*., 2025). Little scholarly attention is paid to hydration practices as a spread risk factor of microbes in sports environments. The behaviour of athletes carrying their water in bottles that are stacked up on the sidelines or on the coach bench, in particular, has rarely been considered through the lens of behavioural hygiene or population health (Fritz *et al*., 2012).

In addition, current sports hygiene practices also tend to indicate that athletes are expected to carry personal, labeled hydration bottles, however, the studies to test the compliance with the recommendations in the actual sport setting have not been done very thoroughly (Fritz *et al*., 2012). Empirical research studies that examine knowledge, attitudes and daily practices of athletes related to bottle sharing during training and competence are lacking. As a result, it has resulted in a research knowledge gap on the extent to which athletes are knowledgeable about the risks that could be posed by salivation-based delivery of pathogens through the use of common hydration devices (Anam *et al*., 2025).

In addition, much of the existing research on sports hygiene has been conducted in a clinical or highly controlled professional sporting context, and hence there is a knowledge gap in the literature on practices in amateur and community and youth sport where the hygiene management may be less well organized. The necessity to fill this gap is clear as behavioural norms, which are developed within these settings, are likely to affect the practice of athletes in the long-term.

A systematic examination of the prevalent hydration behaviours among athletes is therefore required, in terms of hygiene behaviour, the threat of disease spread, and institutional organisational orientations in the sporting scene. Such a study would bring significant data to the spheres of sports health, health of the population, and the well-being of the sportsmen and will educate the evidence-based practice to improve the hygiene standards in competitive sports.

Literature Review

Transmission of Infectious Diseases in Sports.

It is no secret that the sporting conditions may become a nest of the infectious disease due to a significant number of physical contacts, shared facilities, and equipment. Sportsmen have trainings and matches in an environment where close body contact is necessary, locker rooms, and use of shared facilities, so the environment gives an opportunity of spreading microorganisms. Studies in the field of sports medicine indicate that three pathways exist within sporting contexts in which infectious agents can be spread: physical contact among athletes, indirectly through contact with contaminated surfaces or equipment, and direct through personal objects such as towels or protective equipment and rest tools (Kordi *et al*., 2023) [14]. All this puts athletes in vulnerability to communicable infections.

Close contacts sports such as football, wrestling, rugby and basketball are particularly linked with outbreak of the infectious diseases since players tend to sustain skin abrasions, cuts and bruises during the competitions. Pathogens can enter such wounds and it is most likely to be contaminated in case of lack of hygiene. According to the Centres of Disease control and Prevention (2025), infections such as methicillin resistant Staphylococcus aureus (MRSA) have been reported among individuals in the sporting fields due to high levels of contact between the skin and also due to sharing of personal objects. Such infections not only affect personal health of the individual athletes but they are likely to affect performance of the team and lead to temporary discontinuation of sporting activities.

In addition to the bacterial diseases there are viral diseases such as influenza, the herpes simplex and enteroviruses which have been reported among the athletes. It is spread via respiratory droplets, contaminated surfaces or infected fluid. There is also an increase in possibility of cross-contamination and the athletes train in close proximity and use facilities such as locker rooms and gymnasiums where preventive hygiene is not adhered to the latter.

The sports health authorities are the ones who have started to pay more attention to prevention of infections in sports to counter such risks. These will include regular cleaning of equipment, guidance on personal hygiene, wound care, and discouraging of sharing of personal items. Despite the above, the behavioural practices such as sharing of hydration equipment continue to raise concerns of the potential transmission of pathogens among sportsmen. It is these dynamics that should be interpreted so as to improve on prevention of infection in sports settings.

Hygiene Behaviour and Use of Personal Equipment in Sports

The hygiene behaviour is extremely critical in keeping the infectious diseases under control among the athletes. Ordinarily, personal hygiene precautions such as hand washing, proper wound care and not sharing personal stuffs have been promoted as good preventive interventions in sports medicine. However, adherence to these practices will be highly varied in various sporting contexts, particularly when there is a team-based sport and that equipment and facilities are usually shared.

The research on the hygiene behaviour of the athletes demonstrates that the situation of using personal items is not yet eliminated in the majority of sporting environments. In the process of training or competing, athletes tend to share towels, protective equipment, and water bottles without realizing that they can pose health risks. The sports hygiene public health guidelines indicate that the items that are in contact with any part of an athlete like water bottles can be carriers of microorganisms when shared among two or more individuals (Children's Health, 2024) [6]. The indirect spread of bacteria and viruses among athletes may be encouraged by this behaviour.

The following factors are what bring about these practices. To begin with, the busy life of competitive sports has made convenience and speed in hydration more significant than adherence to hygiene. When the sportmen are on short breaks in play, they may take any water bottle that is nearest to them,

irrespective of ownership. Second, long-standing team cultures are usually encountered, and they encourage a collective use of equipment, particularly in cases of amateur or youth sports provision, and where resources are commonly limited. Third, it is highly probable that a number of athletes do not consider the potential heath risks of exchanging personal items in the situations when they do not observe a visible symptom of a person falling ill within the team.

The use of personal equipment is therefore a central focus in sports hygiene policies as one of the key preventive actions. Education and sports authorities recommend that these be carried and used by athletes using clearly labeled water bottles, towels, and protective equipment both in training and game (New South Wales School Sport Unit, 2023) [20]. The recommendations below will see to it that the risk of transfer of microbes through common objects is minimised. Nevertheless, the fact that the communal equipment practice remains means that the behaviour and cultural elements continue to be a factor in the hygiene behaviour in sports. The behaviours are therefore highly significant to research on to understand how hygiene recommendations are understood and implemented in real sporting environments.

Bottle sharing and Water Drinking in Sporting activities

Hydration plays an important role in determining the performance of the athlete particularly in sports that demand a lot of stamina or power such as high intensity sports since loss of fluid through perspiration may lead to dehydration, fatigue and lack of concentration. As a result, a football club often installs water bottles on the sidelines or team benches to enable football players to rehydrate themselves within the shortest duration possible during football breaks. Even though the practice is meant to assist physiological recovery, it has also helped to make the communal hydration systems, where multiple athletes will be sharing the same stock of water bottles, popular.

In the majority of sports players are allowed to drink out of standing bottles on the touchline, or to drink water in bottles handed to them by equipment managers and trainers. On short hydration breaks, there are instances whereby players intentionally deliver drinks to their team mates. Although the practice has been mainstreamed in most sporting societies, its potential hygienic effects have been of concern to health authorities. The infection control in sports facilities study notes that transmission of microorganisms can occur through drinking vessels by contaminating saliva (Kordi *et al*., 2023) [14]. The sport hygiene codes are gradually urging the athletes not to share water bottles during training and competition. To give an example, the guidelines on infection control as applied to sports include the fact that individual hydration devices should be owned by all athletes, and no common hydration machines will be used (KHSAA Sports Medicine Advisory Committee, 2020). These are guided by the realization that saliva may harbor bacteria and viruses that may lead to infection particularly in circumstances where athletes have oral lesions or where they have respiratory diseases.

Despite such recommendations, however, collective hydration rituals have remained common in most sporting events. The pace of competition, lack of single bottles and old-fashioned group routine are the elements that could contribute to persistence of these behaviours. Moreover, it is also possible that some athletes and coaches will perceive the risk of being infected by using the same bottles in comparison to other forms of contact during sport events as minor. Thus, the research ought to be grounded on additional research studies on the understanding of hydration hygiene by athletes and effects of institutional policies on these behaviors.

Policies and Hygiene Guidelines on Sports Infection Prevention

Governing bodies and organisations involved in the promotion of the public health have over the past two decades been developing policies aimed at reducing the risk of the spread of infectious diseases among athletes. The policies are very important particularly when athletes have to work in tight situations and usually do share facilities or equipment. Prevention strategies tend to focus on the improvement of hygiene behaviour, good hygiene of sport equipment as well as discouragement of sharing of personal items.

Sports health authorities recommend on several issues that ought to be done to minimize the chance of being infected in gyms. These include regular cleaning of training facilities, immediate treatment and cover of wounds, personal gear such as towels, clothes and water bottles. The hygiene guidelines of sports hygiene recommend sports hygiene globally to be an easy preventive measure in contact sports to provide every participant with his or her own water containers (World Rugby, 2020) [26]. These practices are aimed at reducing the possibility of transmissions of the pathogens through the body fluids or contaminated surfaces.

Educational programmes also play a very crucial role in developing hygienic awareness with regard to the hygiene in the athletes. The sports administrators, coaches and athletic trainers are normally encouraged to provide regular guidance on infection prevention including proper hydration. With the emphasis put on it in the public health agencies, athletes have to be taught about the importance of non-sharing of personal items and good personal hygiene during training and competition (CDC, 2025).

Despite these guidelines, there is a gaping difference in the application of the guidelines in different levels of sport. Professional teams are often characterized by organized medical and hygiene policies, and amateur and community sports are less important. As a result, adherence to hygienic standards may become more of a personal concern, and a team culture rather than a mandate.

This gap shows that there is a need to conduct empirical studies to examine how hygiene policies are applied in practice within sporting settings. The awareness of whether the athletes and coaches apply the practices recommended by it, particularly, the use of shared hydration equipment, can provide valuable feedback regarding how the infection prevention methods can be improved in the sport context.

Methodology

Research Approach

The research design used in the research paper was qualitative research design in order to determine the hygiene behaviour and perceptions of athletes towards shared hydration in competency sports. It was felt that qualitative method would be appropriate as the study would be to establish a deep understanding of the day-to-day experiences, perceptions and behaviour patterns of hydration among the athletes engaged in sporting events. Qualitative inquiry also helps a researcher to reveal the perceptions of the respondents using their own words and elaborate descriptions about social practices that are not easily measurable (Creswell and Poth,

2018) [7].
The qualitative method also saw the researchers research the effects of cultural norms on the use of water bottles and other hydration gears by sport teams. Previous research has shown that team behaviours, convenience and peer pressure are likely to impact behavioural practices within a sporting environment rather than formal hygiene policies (Denzin and Lincoln, 2020) [8]. The qualitative orientation put the study in a position to explore deeper in these underlying behavioural dynamics. The approach thereby provided a suitable model on how athletes perceive the health risks that can be entailed in community hydration practices and whether they perceive the practices as problematic.

Research Method
The study employed a qualitative case study. The method of case studies assisted the researchers to examine common hydration practices within the framework of organised sporting activities in a real-life setting. Case studies may also be especially useful when someone is exploring a phenomenon within the natural setting, and when numerous sources of evidence are required to understand the complexity of social behaviour (Yin, 2018).
In this regard, this study has been undertaken on the chosen team sports where sports hydration breaks are typical during a sporting exercise like in football, basketball and athletics training. The rationale of using these sports was that most of these sports have a significant number of players utilizing hydration stations that are located either in the field or on the team benches. The case study method allowed the researcher to see the behaviours of the hydration first hand as well as receive the narrative data of the experience and the perception of the athletes and the coaches regarding bottle sharing. The combination of the observation and interviews was used to provide a broader conceptualization of how the hydration practices are conducted in practice and how the behaviours among athletes are rationalised.

Study Population
The sample size was made up of competitive athletes, coaches and sport support staff engaged in organised team sports. These were selected subjects because they are engaged in a first-hand training and competition environment where hydration practices occur on a systematic basis.
The key population target was the athletes since it is the people who regularly drink water bottles during matches and training. The coaches and the support staff were also retained as they tend to deal with equipment maintenance and hydration in sporting activities.
The study was carried out on football, basketball, and athletics training groups of organised sporting clubs and educational institutions athletes. These were considered appropriate groups because they represent common sport settings where common hydration systems are commonly observed. Presence of multiple sporting behaviours implied an extended perspective on the hydration behaviour and the researcher was able to evaluate whether there existed differences in bottle-sharing behaviours in various sporting environments.

Sampling Method and Sample size
Participants were sampled in the study through a purposive sampling method. Qualitative research is famous concerning the purposive sampling because it enables the researcher to sample individuals who have a specific experience or knowledge regarding the phenomenon being investigated (Patton, 2015) [21]. The participants in this research were selected purposely since they are involved in competitive sports and well informed on hydration practices in training and competition.
The sample size was 30 people including 22 athletes, 5 coaches and 3 sports support staffs. This was considered to be enough sample size in as far as qualitative inquiry is concerned because the aim of the research was to obtain descriptive data as opposed to statistical generalisation. Through the literature that has been used previously on the subject of methodology, the qualitative research typically has smaller, information-rich samples that can be more thoroughly used to explore the experiences of the participants (Guest *et al*., 2020) [11]. Data collection was continued until thematic saturation was realized, i.e., no material of any kind was emerging as a result of the successive interview.

Data Collection Methods
The information has been collected basing on semi-structured interviews and field observations. The semi-structured interviews offered an opportunity to the interviewees to discuss their experience and perception of hydration practices and the researcher could explore further on specific issues related to hygiene behaviour and the danger of spreading the disease. The interviews were structured in a loose format, and questions asked regarding the hydration habits of the athletes, their awareness of the risk of hygiene by using shared water bottles as well as the role of coaches or authorities in sports in controlling this practice.
The non-participant observations were conducted along with the interviews on the chosen training sessions and competitive matches. The researcher observed how the hydration bottles were positioned on the sidelines, how the players obtained them during one of the breaks during the game and how the players shared the drinks. Observational notes were made at the end of each session in a field notebook. This method helped in the description of behavioural patterns, which the interviewees could not describe in interviews.
The interviews and observations served to further the information and allow the researcher to triangulate the findings of other sources.

Validation and Credibility
Various validation strategies were employed to ensure credibility and trustworthiness of the results. The combination of interviews and field observation was used as the data triangulation in the first place. The relevance of different data sources was used to improve the validity of the results as the researcher could correlate the stated behaviours of the participants and the observed practices (Creswell and Poth, 2018) [7].
Second, member checking was also performed by providing the interview summaries to the selected participants to help them to be sure that they were answering correctly. This is because the participants would have the opportunity to clarify or expound the statements provided thereby making the data more authentic.
Third, the researcher employed reflexive research journal where he was documenting the methodological choices and personal considerations in the course of the research. Maintaining such records will help in enhancing the degree

of transparency and the reader will be able to acquaint oneself on how the interpretations were arrived at during research.

Data Analysis Procedure

It was analysed using thematic analysis which is a commonly used qualitative data analysis technique used to identify and explain a pattern within the texts. The six-step model of Braun and Clarke (2021) [1] was used to conduct the critical analysis. Firstly, the transcription of all the interviews was conducted word-to-word and then they were read vicariously to get familiarized with the data. Second, the initial codes were developed to generate substantial amounts of text about hydration behaviour, hygiene awareness, and institutional guidelines.

In the third stage, similar codes were grouped together to form large groups which meant that a new trend was forming in the data. The categories were then divided into broad themes that describe key experience and perception of athletes of common hydration practices. The themes were then debated and these were reduced to ensure that it reflected the stories of the participants.

Finally, the themes were construed in relation to the research objectives of the study and the literature available on sports hygiene and infection prevention.

Ethical Considerations

Ethical considerations were taken in carrying out the research. The purpose of the data collection was explained to the participants before the research began, as well as the nature of their involvement in the study. The participants were all informed and asked to provide an informed consent to the interview and observations.

The respondents were assured of confidentiality and anonymity of their responses. The data was therefore transcribed and reported using the pseudonyms to retain the identity of the participants. In addition, they informed the participants that they could participate in the study and drop at any time without negative consequences.

The study also ensured that observations carried out in sporting events did not interfere with the normal activities of the athletes or coaches. There is a need to ensure that ethical research practice is adopted when dealing with research on human subjects as this would ensure that human rights are upheld and the integrity of the research is maintained (Resnik, 2020) [24].

Results and Discussion

Normalisation of Bottle Sharing in Athletes

The findings showed that one of the behaviours that were highly normalised among athletes was sharing of water bottles during training sessions and competent matches. It was observed that the water bottles were usually piled up along the touchline or the team bench and whenever the game came to a short stop, the players drank the water bottle closest to them. Mostly, athletes were observed not to examine a bottle to ensure it belonged to them before drinking out of it. In football, training setups in the form of basketball and athletics, the trend was observed to be constant.

Based on the interviews with the participants, the assumption was that this behaviour was largely considered as a normal aspect of sport participation. The majority of the athletes mentioned that they had been exposed to such practices because they had been introduced to organised sports and were introduced at such an early age that they never thought about the hygiene consequences. In their scenario, the primary issue with hydrations breaks was to replenish as quickly as possible to be back on the field. The given outcome aligns with the previous research that has established that behavioural norm in sports teams are often established through the process of long-term repetition and social acceptance, rather than the official teaching (Kordi *et al*., 2023) [14].

"It is like you do not really think it is somebody who has a bottle at some time during a game. You simply pick the closest one and have a bite and get back to the field". – Athlete participant.

Other participants provided that when several bottles are put in one place, it was hard to identify separate bottles during the rush moments of the game. Consequently, players focused on convenience, but not identification of ownership.

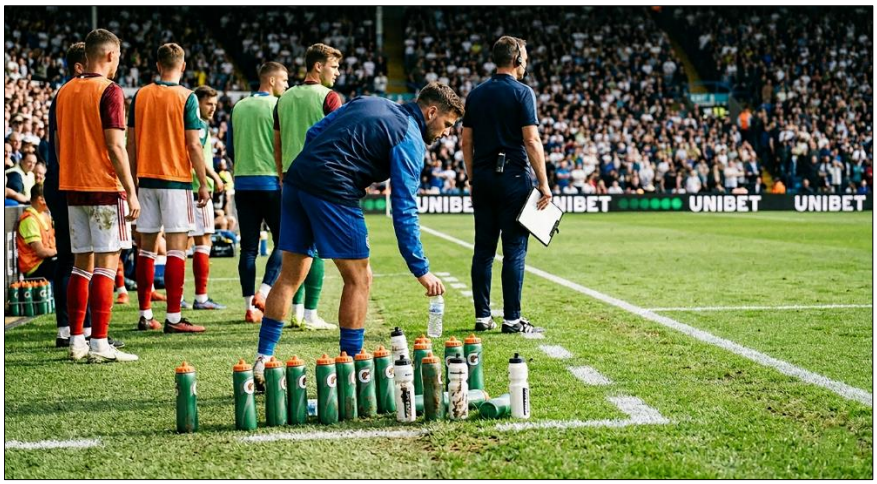


Fig 1: Typical arrangement of water bottles along the sideline during a competitive match.

Overall, the findings reveal that collective hydration rituals have become embedded in the lives of the majority of sports teams, and in most instances the rituals are carried out without putting much thought on the health risks involved.

Low awareness of hygiene and risk of disease transmission

The other important research finding was that the level of knowledge on the possible health risks of using shared

hydration equipment was quite low among the athletes. Though the great majority of the interviewees acknowledged that close physical contact during sports might lead to the spread of the infectious diseases, few of them recognised that the second potential method of spreading microbes is through sharing bottles.

Surprisingly enough, in the interviews, many athletes were surprised when the issue of spreading the disease with the assistance of saliva was brought up. Part of the participants verified that they had not thought previously that a shared bottle with a teammate might aid in transmitting bacteria or viruses. Instead, more probable causes of hygiene issues were open wounds or visible skin infections.

I had never thought that being infected is possible when having a cut or when being in contact with the skin. I have never believed that water bottles are another method to spread germs too. -Basketball player.

This conclusion aligns with the existing literature that suggests that athletes are more likely to underestimate the transmission path in the sporting environment (Li *et al*., 2020)). Saliva can contain numerous microorganisms capable of causing infections particularly when individuals use the drinking containers together. Most of the participants, however, began to re-evaluate their practice of hydration when the issue was explained further in the event of interviewing. Others acknowledged that illnesses such as colds, mouth or respiratory virus theoretically could be transmitted by sharing the same bottle.

Table 1: The consciousness of athletes about the risk of spreading the disease by using common hydration bottles.

Awareness Category	Description of Athlete Responses	Frequency (n)	Percentage (%)
High Awareness	Athletes clearly understood that sharing bottles could transmit bacteria or viruses through saliva.	4	13.3
Moderate Awareness	Athletes suspected there could be hygiene risks but were unsure about the specific mechanisms of disease transmission.	7	23.3
Low Awareness	Athletes had never considered that sharing bottles could spread infections.	14	46.7
No Awareness	Athletes believed sharing bottles was completely harmless and posed no health risk.	5	16.7
Total		30	100

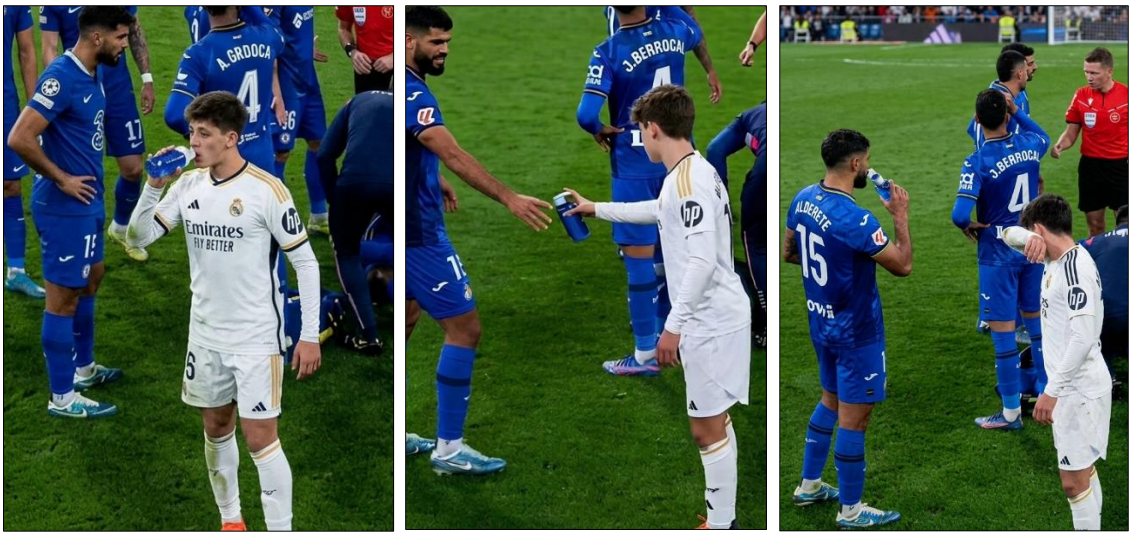
These reactions indicate a gap in the education of athletes about the risks of hygiene related to community hydration.

Game Intensity and Time Pressure Effect on Hydration Behaviour

The pace and intensity of the sporting activities were found to be a crucial factor in determining the behaviour of hydration among the athletes. Many of the participants explained that in most instances, competitive matches do not have long periods of rest between players in the field, i.e., they do not have time to locate personal gear. During these occasions, majority of the players were anxious about acquiring rapid hydration prior to returning to the match.

According to the sports people, dehydration might lead to fatigue, loss of concentration and performance. This saw them on most occasions rush and take the nearest bottle in order to take a quick drink during a hydration break. In this situation, it was impossible to find a personal bottle.

Observational data confirmed these arguments. During the training sessions and matches, athletes would be seen visiting the hydration stations in great numbers and picking bottlenecks within seconds. In different instances, the same bottle was used by a number of players sequentially during one break. The research in the field of sports physiology emphasizes that the correct hydration is also the secret of endurance and mental activity during extreme physical activity (Kenney *et al*., 2020) [12]. Urgentness of the issue of hydration in competition, however, may be an unwelcome inducement to blind behaviours which do not consider the issue of hygiene.



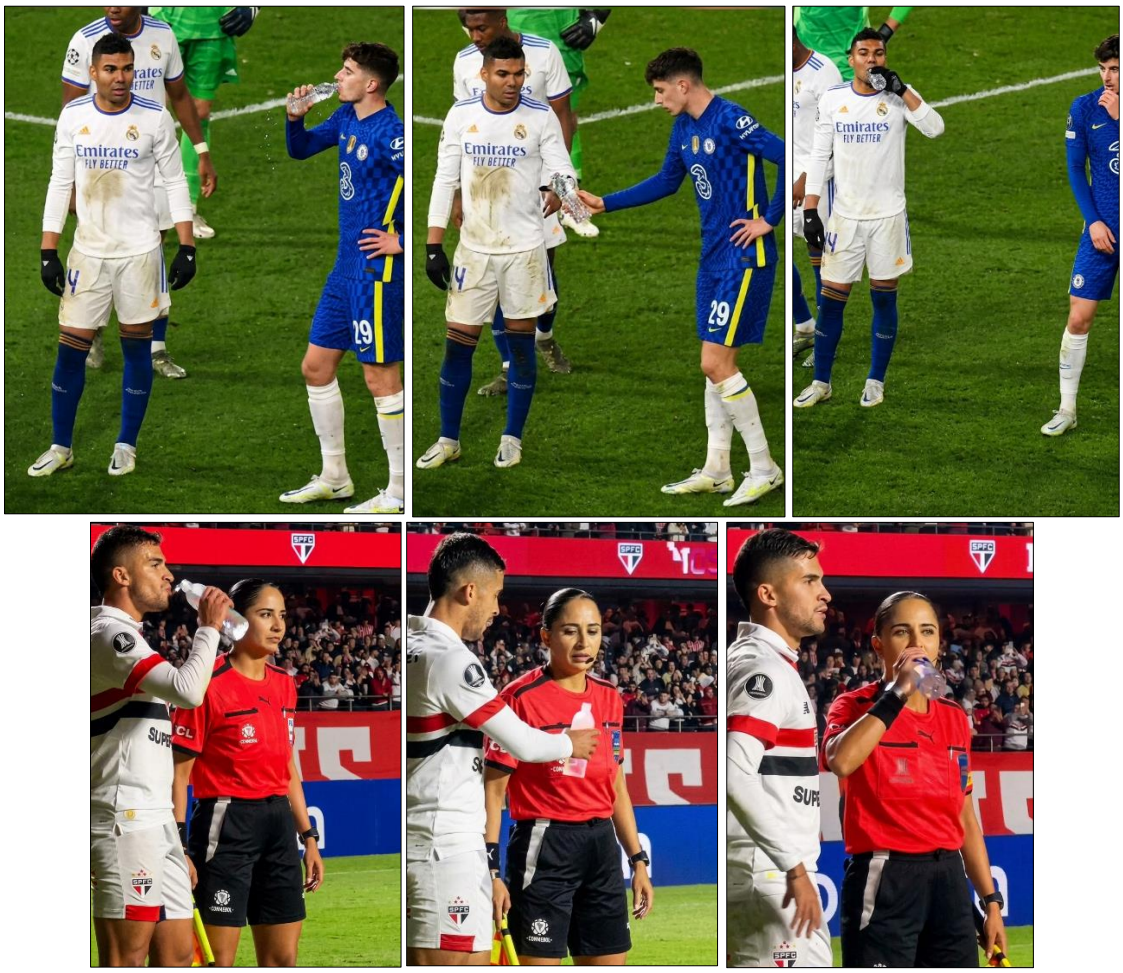


Fig 2: The use of hydration bottles by the athletes during a brief time-out.

"When you are so tired and the game breaks it is just to take water in a hurry. You have no time to find your own bottle". – Football player.

These results depict the ability of the structural conditions of sporting activities to inadvertently support communal hydration behaviours.

Lack of Clear Organization Guidelines towards hydration Hygiene

The study also established that most of the sporting environments that were researched had no formal policies regarding the hydration hygienic. Though health policies (which were normally general) on injuries or the cleanliness of facilities existed, things that specifically deterred bottle sharing among the athletes were not widespread among the athletes.

Coaches and support staff acknowledged that the hydration equipment was typically not dealt with formally. The bottles were mostly assembled in the side-line, and lacked any labels or sign of individual identification. This being the case, athletes were more inclined to think that the lot of bottles was shared. Historical suggestions in the area of community health imply that sportspeople should carry their own water bottles to lessen risks of microbial infection (CDC, 2025). The results however highlight that such guidelines are not necessarily implemented at the team level. Other coaches also confirmed that during the competitions, one of their biggest worries was to ensure that players remained hydrated rather than inspect the hygiene practices. In some teams, the lack of resources was also a contributing factor since practical considerations necessitated the use of common gear.

Table 2: Presence or absence of formal hydration hygiene guidelines among participating teams.

Guideline Status	Description	Frequency (n)	Percentage (%)
Clearly Established Guidelines	Athletes reported that their teams had clear rules requiring individual water bottles and discouraging bottle sharing.	5	16.7
Informal or Partially Communicated Guidelines	Athletes indicated that coaches occasionally advised against sharing bottles but there were no written or consistently enforced rules.	8	26.7
No Formal Guidelines	Athletes reported that their teams had no instructions or policies regarding hydration hygiene.	17	56.6
Total		30	100

Building the Willingness to Use Safer Hydration Procedures

Despite being a typical method of hydration, the study had found that some of the athletes would accept safer hydration habits in the event that the potential health hazards became apparent. The respondents showed concerns in the simple preventive measures that would assist in reducing the risk of spreading the disease without affecting the sporting activities. Some of the athletes suggested to use marked personal bottles or colour-coded hydration systems where the players were able to identify their individualised equipment when the play had to be briefly halted. The remaining ones recommended that the teams must also provide education about sports hygiene particularly to the young players who may not be well informed on these matters. Coaches also learned that there was a necessity to create more awareness of better hygiene among their teams. Others said they would consider putting clear hydration guidelines in place in case they are provided with the correct directions by sports organisations or health organisations. The responses point to the fact that the current behaviours were not necessarily based on the resistance to the hygiene practices but could be possibly based on the deficit of awareness and institutional advocacy. Overall, the findings suggest that there is a potential opportunity to modify people behaviour through the assistance of particular education and the development of policies.

Bottle-sharing Behaviour assisted with the help of peer Influence and Team Culture

The other important theme that was developed upon the data was the role that a peer and a team culture played in promoting communal hydration practices. Many of the sportspersons said that their hydration behaviour was significantly affected by what the other players in the team were used to doing during training and competition. It is noted that the players tended to mimic the behaviour of older players or the team leaders in most teams. In cases where the older players would consume bottles of beer devoid of any reservations, the other young players used to follow suit.

According to the respondents, questioning these practices may be perceived as unnecessary or even derailing team building. In some other cases, players have referred to the act of sharing bottles as being an informal means of conveying team spirit. These social relations served to sustain collective hydration practices when there were few people with their personal hygiene issues that were kept secret. Sociology of sport suggested that the behaviour of athletes and no longer the individual decision-making process can be determined by team norms and collective identity in many cases (Malcolm, 2021) [15]. The players, in the competitive sporting cases, tend to follow the patterns, in order to guarantee the harmony of the group and not appear to be too careful or uncharacteristic of the other members of his or her team.

When the whole group shares the bottles, you do it by example. No-one would mind emerging the big issue regarding it. These findings reveal how social forces within a group may support hygiene measures that may not be essentially aligned with recommended infection-prevention practices.

Controlled Risk of Cross-Contamination in Hydration Stations

The research involved field observations which revealed that there were several situations in which hydration stations could be used to cross-contaminate athletes. The bottling was often performed by multiple individuals over a brief period of time, and sometimes, after hard body activities such as sweats, dirt or even the sporting equipment.

In some of the sessions, it was observed that during the training sessions, the athletes were returning the bottles in common pools once they had taken them and, in the process, the remaining players got a chance to take the bottles without knowing who had used them before. Additionally, bottle nozzles were used that were in direct contact with mouths and drank by some players. The behaviours predetermined the risk of leaving the saliva residues on the mouthpiece.

It has been scientifically proven that saliva contains the presence of different microorganisms, including respiratory and oral infection-associated viruses, bacteria, and others (Rasmussen & Marr, 2021) [22, 23]. The use of the same objects such as drinking bottles many times in a short duration may be viewed as a second-hand method of entering the pathogens.

Table 3: Visual clues on the likelihood of cross-contamination at the hydration stations.

Observational Indicator	Description of Behaviour Observed	Frequency (n)	Percentage (%)
Shared handling of bottles	Multiple athletes picked up and replaced the same bottle within short intervals during breaks in play.	12	40.0
Unlabelled or indistinguishable bottles	Bottles placed collectively without names, colours, or identifiers, making ownership unclear.	8	26.7
Direct mouth–nozzle contact	Athletes drank directly from bottle nozzles with visible mouth contact before returning bottles to the shared area.	6	20.0
Bottles returned to communal crate after use	Athletes replaced bottles immediately into a shared container where others subsequently selected them.	4	13.3
Total		**30**	**100**

Although presence of microbes on the bottles was not directly quantified in the study, the behavioural patterns applied in the study suggests that due to the common hydration equipment, environments where there can be an indirect transfer of pathogens amongst the athletes can be realised.

Conflict in Professional and Amateur Sporting Organizations

The study further discovered that professional or highly organised teams and amateur or community-based sporting groups had great diffuses in regards to hydration practices.

The hydration practices of those teams were more structured, which means that they have well-structured support systems i.e., professional club or elite training programme. Such teams were likely to issue individual bottles to the athletes and ensure that the equipment managers were vigilant of the hydration arrangements during the training sessions.

Amateur and community sporting teams on the other- hand were more inclined to use informal hydration systems whereby the bottles were kept together in a group and thus most people used them. Lack of money and adequacy of equipment staff was typically cited as the cause of such practice.

The same gaps between professional and amateur sporting conditions where medical supervision and hygienic measures may vary greatly have been observed in a previous study on the management of sports health (Mountjoy *et al*., 2022) [16]. Such differences may be variables that will dictate the level of adherence to embraced infection-prevention measures among the athletes.

Table 4: The comparison of the hydration management practices among professional and amateur teams.

Hydration Management Practice	Professional / Structured Teams (n = 12)	Amateur / Community Teams (n = 18)	Total (n = 30)
Individually assigned and labelled bottles	9 (75.0%)	3 (16.7%)	12 (40.0%)
Bottles placed collectively without labels	2 (16.7%)	10 (55.6%)	12 (40.0%)
Mixed system (some labelled, some shared)	1 (8.3%)	5 (27.7%)	6 (20.0%)
Presence of equipment staff managing bottles	7 (58.3%)	1 (5.6%)	8 (26.7%)
No dedicated hydration management	3 (25.0%)	13 (72.2%)	16 (53.3%)

Conclusions drawn reveal that organisational support and structural resources play a role in determining the hygiene behaviours in the sporting contexts.

9. Perceived Health Risk during the Epidemic Periods of the Infectious Diseases.

The other excellent theme was the perception of the athletes on health risks during pandemics of the contagious diseases. According to some interviewees, their awareness on hygiene practices increased to an enormous level during the global Covid-19 pandemic. Some of the teams at the time would temporarily discourage the use of bottles and would have stricter sanitation measures.

According to athletes, these precautionary measures included the use of personally marked bottles, chemical hydration stations, and scanty use of shared equipment. However, as several participants observed, with the threat of the pandemic eradicated, certain teams gradually returned to previous ways of doing things.

The findings of this study can mirror the reflection of more significant observations in the wider public health, which is that hygiene behaviours tend to change in increased awareness of the disease but can decrease in the low-perceived risk scenario (Fisher *et al*., 2021) [10].

These are the words of a football player: "During COVID, we all had our own bottle and no-one shared but now that things were normal, we gradually went back to the old normal.

The results indicate that long-term behavioural change might need gradual education and institutional support instead of short-term measures in response to the outbreak of a pandemic.

Discussion

The present study has explored the popular hydration practices among athletes and explained how the practice may impact hygiene and the possible exposure of the infectious diseases in the sporting environment. The findings demonstrate that bottle sharing remains extremely normative among athletes and is largely influenced by the team culture, convenience, and the lack of knowledge about the harmfulness of hygiene. The results are useful additions to behavioural patterns that may unintentionally make one prone to the transmission of microbes in a sporting setting.

The other most impressive findings of the research were that the common hydration practices were being normalised in the sporting culture. In different sports, sportspeople reported that they had a habit of drinking the bottles because they were in the side-lines and had not bothered to check their source. This behaviour appears to be a part of sporting traditions and cannot be doubted by athletes and coaches. The literature on sports medicine has observed these findings, where habit and peer influence can typically cause practices of team practice routines not always health conscious (Kordi *et al*., 2023) [14]. Normalisation of such behaviours may also result in the reduction of the sensitivity of the athletes to the potential risks of hygiene, particularly in those instances when the bottle sharing practice was perceived as something non harmful.

It was also found that athletes were not largely mindful of the risks of disease transmission that may be instigated by using shared hydration equipment. Although the participants were informed that during sports, they could be infected because of physical contact with each other, a significant proportion of them did not consider saliva-carrying infections, because of sharing drinking containers. This finding is related to the research works that mention that the indirect transmission routes, such as the use of contaminated objects or personal objects shared by individuals, are commonly underestimated in sportive contexts (Rasmussen and Marr, 2021) [22, 23]. Several kinds of microorganisms, bacteria, viruses, can be found in saliva and lead to respiratory and oral infections. Thus, possible pathogen carrier may be communal drinking casks which may be used by multiple individuals sequentially.

The other interesting observation is associated with the influence of intensity of games and time pressure on behaviour of athletes. Players also talked of the extreme intensity of competition in sport that did not permit much time to be wasted in finding the individual equipment in the short intervals between the action. Hygiene factors are, therefore, likely to be dominated by convenience. The research on the physiology of sports emphasizes that an appropriate level of hydration is one of the factors that can help an athlete during a sports activity, particularly during the intensive events when the loss of fluids can disrupt the stamina and mental skills (Kenney *et al*., 2020) [12]. The necessity to remain hydrated during competition therefore presents a case by which the athletes will be more interested in the rate at which they consume fluids than be considerate in terms of equipment identification. This structural shortcoming can be adopted to explain the reason why

hydration practices that are prevalent among the general population are still embraced in case where athletes are conscious of the potential hygiene problems.

Another vacuum in institutional policies that control hydration practices in most sporting environments was also indicated by the results. As much as there were some teams that shared the same health policies, there were no clear instructions on what should not be shared to the athletes such as the bottles. This informal hydration may be perpetuated by such a lack of organised training. The primary message of the health guidelines is the importance of personal water bottles and the need not share personal items in sports facilities (Centres for Disease Control and Prevention, 2025). However, the existing findings suggest that these suggestions are not necessarily implemented at the team level particularly in amateur and community sports.

The team culture and peer effect aspect also emerged as one of the key determinants of hydration behaviour. Sports individuals are likely to engage in activities that can be said to be practiced in a particular team although such practices may be not in line with the proposed hygienic expectations. The conformity within sports teams can be particularly high, as there are high chances that sportspeople will need group cohesion and will avoid behaviours that can be considered as anomalous and disruptive. Malcolm (2021) [15] argues that the sport environments tend to inculcate a strong feeling of collective identity, determining the behaviour of the athletes on the field and off. Under such circumstances, the practice of common hydration can be compared to that of team spirit, which assists in reinforcing it further.

The data of study observations also indicated that hydration stations have potential cross-contamination points. A number of athletes were found to use the same bottles within short intervals of time and in other instances, right after intense physical activities. Such behavioural patterns culminate in giving the scenario in which the remains of the saliva or any form of microorganism could be passed to other individuals. A study of the spread of respiratory pathogens has indicated that infected surfaces and shared objects can be a source of indirect disease transmission particularly in cases where the level of hygiene is low (Rasmussen and Marr, 2021) [22, 23]. No microbiological tests of the bottles were performed in the current study however; the specified behaviours suggest the existence of such sources of transmissions.

In the paper, it was also established that there were differences in the context of professional and the amateur sporting activities in as far as hydration management practices were concerned. Professional teams tended to be better organized with each having allocated bottles and equipment managers. On the other hand, amateur and community teams were more likely to possess more informal arrangements in which bottles were distributed among themselves that were used in general. These disparities are global disparities in resources, organisational backing and medical oversight between elite and grassroot sporting settings (Mountjoy *et al*., 2022) [16]. Thus, the risk to athletes in less organized environments could be increased as a result of hygiene.

Surprisingly, the study also discovered that hygiene risk awareness was also greater in the height of public health concern particularly in the COVID-19 pandemic. Hypocritical stricter hygiene procedures (individualised hydration equipment and increased sanitation habits) have been mentioned by some of the participants as practiced by their teams. However, many sportsmen also reported that these measures began to reduce over time immediately after the direct threat of the pandemic was eliminated. This also aligns with preventive behaviour literature that suggests that such behaviours are often reinforced in the case of a health crisis but can be diluted in case perceived threat decreases (Fisher *et al*., 2021) [10].

Despite all these challenges, there is also a good potential in the outcomes to build safer hydration practices by athletes and coaches. The majority of the participants were open to effective interventions which involved labelled bottles, colour-coded hydration systems, or sports hygiene education programmes. This attitude is a sign that current practices are not always infallible and may only reflect the low awareness and institutional support.

Altogether, the findings indicate that additional attention has to be given to the problem of hygiene awareness and policy-makers concentrate on the sports situations. Though the physical contact is an inevitable occurrence in the most sporting activities, the indirect methods of transmission such as common hydration gears could be assisted by comparatively simple interventions. Sports organisations, coaches and public health authorities incorporating hydration hygiene on broader athlete health promotion programmes may be beneficial thus.

Conclusion

The paper has explained typical hydration behaviours among sports people and assessed the degree of hygiene behaviour and risk of diseases in using communal water bottles in sports. The findings indicate that bottle sharing is an institutionalized activity among different sporting arrangements. Water bottles would be frequently stacked on the side-lines or on benches of the team in a single large pile and the athletes would reach out to take water bottles without verifying who owned those. Convenience made this behaviour part of the sporting culture of many participants, because of time pressure during the competition process and traditions of a particular team.

It was also discovered that there was low overall knowledge on hygiene risks associated with sharing hydration equipment among athletes. Although the participants knew that physical contact could be used to transmit the infection during sports, saliva-mediated transmission could also be through the use of common drinking containers that most of the participants were not aware of before. This gap in knowledge implies that the hygiene education on sport settings has largely been based on the visible injuries or direct contact infections and the indirect routes of transmission have been accorded little attention.

The other important learning is linked with the circumstances of sporting activities. The character and rate of the competitive games normally encourage the sportsmen to work on swift hydration and not pay so much attention to finding personal bottles. In some instances, the intuition to get the closest bottle is valued despite a potentially present consideration of the hygiene. In addition, absence of good institutional policies in most of the teams is also one of the reasons that make the informal hydration practices persist.

The outcomes further illustrate the role of the team culture and personal behaviour as contributory to the hygiene behaviour of athletes. Sharing of bottles was regarded as a normal or even a socially-acceptable behaviour in most of the teams. At the same time, there might be noted differences

between professional and amateur sporting situations. Professional teams were more likely to have a more organised hydration system in place as they had access to resources and the amateurs relied on community hydration systems.

These challenges were accompanied by positive signs of behavioural flexibility which were also discovered during the study. Most athletes desired to adopt more health-conscious behaviour of hydration when they got to know of the potential health hazards of sharing bottles. This implies that specific education, good policies, and simple practical mechanisms can be used to improve the hygienic behaviour. In general, the paper indicates the necessity to pay attention to hydration practices as a forgotten part of infection prevention in sports environments. Sports organisations and health authorities can assist in creating safer and healthier environments to the athletes through this behavioural problem.

Recommendations

Based on the findings of the study, there are recommendations provided to improve on the hygiene practices and reduce the chances of the dissemination of the diseases within the sporting environments.

Firstly, a sports organisation and the governing bodies should formulate hydration hygiene in training and competitive matches. These should have guidelines that emphasize on the use of personal and distinctly identified water bottles by each athlete and discourage the sharing of water bottles. The recommendation of health agencies on the topic of sharing personal items in sports has always discouraged the sharing of personal items in sports as it is one of the methods of micro-organism's transmission (Centres for Disease Control and Prevention).

Second, coaches and team managers will use effective hydration management models in such a way that when interruptions of short games occur, the players can easily identify their individual bottles. Coloured bottles or customised labels or special bottle shelves can significantly reduce the amount of confusion and accidental sharing.

Third, hygiene awareness training of the athletes should be a part of the health education programmes in sports health, particularly of the youth and amateur level. Educational activities can help the athletes to know how the infections can be spread by using shared equipment along with encouraging them to adhere to preventive behaviour at the early stages of their sports careers. As it has been established, hygiene practices in the athletic community can also be significantly improved with the assistance of health education programs (Mountjoy *et al*., 2022) [16].

Fourth, the sports facilities should improve cleaning procedures of the hydration stations. Equipment managers and support staff should also ensure that the bottles and hydration equipment is washed and stored in a way that is not highly contaminated. There are easy sanitation practices that can be established to reduce the exposure to microbes within the shared sporting facilities.

Fifth, microbiology of shared hydrating devices availability of pathogens on bottles and mouthpieces surfaces requires future research. Such studies would provide factual information with regards to the extent to which habitual hydration practices result in the spread of illnesses in the sports environment. Finally, sport governing bodies must also take into account the hydration hygiene as a component of the overall athlete health protection policy. As sportspeople around the world become increasingly concerned about the well-being of their athlete, the hygiene standards of the equipment and facilities will be institutionalized. The following recommendations should assist sports organisations to promote healthier sporting conditions and yet reap the benefits of good hydration practices that are associated with good performance.

References

1. Braun V, Clarke V. Thematic analysis: a practical guide. London: Sage Publications; 2021.
2. Centers for Disease Control and Prevention. Preventing infections in sports settings. Morbidity and Mortality Weekly Report. 2023;72(5):1–8. doi:10.15585/mmwr.mm7205a1.
3. Centers for Disease Control and Prevention. Preventing the spread of infections in sports settings. Morbidity and Mortality Weekly Report. 2024;73(6):1–10. doi:10.15585/mmwr.mm7306a1.
4. Centers for Disease Control and Prevention. Athlete safety and infection prevention in sports settings. CDC Health Protection Report. 2025;74(3):112–118. doi:10.15585/mmwr.rr7403a1.
5. Centers for Disease Control and Prevention. Athletes: MRSA prevention and control [Internet]. Atlanta (GA): CDC; 2025 [cited 2026 May 9]. Available from: https://www.cdc.gov/mrsa/prevention/athletes.html
6. Children's Health. Cleanliness is the name of the game: preventing infections in young athletes. Children's Health Sports Medicine Program; 2024.
7. Creswell JW, Poth CN. Qualitative inquiry and research design: choosing among five approaches. 4th ed. Thousand Oaks (CA): Sage Publications; 2018.
8. Denzin NK, Lincoln YS, editors. The Sage handbook of qualitative research. 5th ed. Thousand Oaks (CA): Sage Publications; 2020.
9. Eichner ER. Viral infections and athletics. Sports Science Exchange. 1993;6(56):1–6. Available from: https://www.gssiweb.org/en/sports-science-exchange/article/sse-56-contagious-infections-in-competitive-sports
10. Fisher KA, Tenforde MW, Feldstein LR, Lindsell CJ, Shapiro NI, Files DC, *et al*. Community and close contact exposures associated with COVID-19 among symptomatic adults. Ann Intern Med. 2021;174(9):1258–64. doi:10.7326/M20-6817.
11. Guest G, Namey E, Mitchell M. Collecting qualitative data: a field manual for applied research. Thousand Oaks (CA): Sage Publications; 2020.
12. Kenney WL, Wilmore JH, Costill DL. Physiology of sport and exercise. 7th ed. Champaign (IL): Human Kinetics; 2020.
13. Kentucky High School Athletic Association Sports Medicine Advisory Committee. Guidance for hydration and hygiene practices in sports participation. 2020.
14. Kordi R, Wallace WA. Common infectious diseases in athletes. Sports Med Health Sci. 2023;5(3):155–64. doi:10.1016/j.smhs.2023.04.002.
15. Malcolm D. Sport, medicine and health: the medicalization of sport. London: Routledge; 2021.
16. Mountjoy M, Junge A, Alonso JM, Engebretsen L, Dragan I, Gerrard D, *et al*. Sports medicine and athlete health protection: a global perspective. Br J Sports Med. 2022;56(2):73–9. doi:10.1136/bjsports-2021-104830.
17. Mountjoy M, Sundgot-Borgen J, Burke L, Carter S,

Constantini N, Lebrun C, *et al*. The IOC consensus statement on athlete health protection. Br J Sports Med. 2022;56(4):193–201. doi:10.1136/bjsports-2021-104882.
18. National Federation of State High School Associations Sports Medicine Advisory Committee. Sports hygiene: guidelines to minimise infectious diseases in athletic environments. 2024. Available from: https://cdn4.sportngin.com/attachments/document/7230-1942092/Sports_Hygiene.pdf
19. National Federation of State High School Associations. Guidance for safe hydration and hygiene practices in sports participation. 2020. Available from: https://www.lfchd.org/wp-content/uploads/2020/09/allsportsguidance.pdf
20. New South Wales School Sport Unit. Infection control in sport and physical activity. Sydney: NSW Department of Education; 2023.
21. Patton MQ. Qualitative research and evaluation methods. 4th ed. Thousand Oaks (CA): Sage Publications; 2015.
22. Rasmussen AL, Marr LC. Aerosol and surface stability of respiratory viruses and implications for transmission. Annu Rev Virol. 2021;8(1):17–37. doi:10.1146/annurev-virology-091919-074803.
23. Rasmussen AL, Marr LC. Understanding the transmission of respiratory viruses. Nat Rev Microbiol. 2021;19(8):528–45. doi:10.1038/s41579-021-00535-6.
24. Resnik DB. What is ethics in research and why is it important? National Institute of Environmental Health Sciences; 2020. doi:10.1289/ehp.100.
25. Li DJ, Clohisy JC, Schwabe MT, Yanik EL, Pascual-Garrido C. PROMIS versus legacy patient-reported outcome measures in patients undergoing surgical treatment for symptomatic acetabular dysplasia. Am J Sports Med. 2020;48(2):2–?. doi:10.1177/0363546519894323.
26. World Rugby Medical Commission. Player welfare guidelines: hygiene and infection prevention in sport. 2020.
27. Yin RK. Case study research and applications: design and methods. 6th ed. Thousand Oaks (CA): Sage Publications; 2018.

How to Cite This Article

Daitey W, Oppong Bamfoa C, Owusu PaninKwame Baah K. Shared hydration practices in competitive sports: assessing hygiene behaviour and potential disease transmission risks among athletes. Int J Phys Educ Sports Holist Dev. 2026;2(1):27-39

Creative Commons (CC) License