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“Let's talk about menstruation!”- Knowledge and Communication about Menstrual Cycle among Adolescent female Football Players and male Coaches

Masters Programme in Sports Performance and Athlete Health
Independent Project 15 credits
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Total word count: 2299

Abstract (170)

Despite experiencing menstruation and navigating the menstrual cycle (MC) repeatedly, female athletes demonstrate poor knowledge regarding MC and female health, according to prior studies. In a sample of 142 endurance athletes, only 8% felt informed about the MC's implications for training and performance.

This subject often remains taboo or private within an athletic context. This study aimed to address knowledge and communication deficits through an intervention program comprising four steps conducted in a single session containing surveys before a presentation about basic knowledge in MC/FH, a group discussion, and an evaluation survey, termed as "educational intervention session."

As indicated by prior studies, educational interventions have shown good results in enhancing knowledge and communication about the MC. Targeting girls aged 15-19 alongside their male coaches in a football academy, the study revealed that out of 13 players and 2 head coaches, one coach and four players struggled to discuss MC. For future communication about MC, 5 players answered “Don ´t know”, while all coaches and the rest of the players answered “Yes”.

Contents

Scientific background (Word count: 822)

Introduction (256)

Even though girls and women get their menstruation every month and go through different phases of the menstrual cycle (MC), menstrual health literacy and female health (FH) among female athletes are known to be low according to prior studies (1-5).

In a study on 142 endurance athletes, only 8% of the participants considered themselves to have adequate knowledge about the MC and its impact on training and performance. The same study showed that on 27% of athletes communicated with their coaches about the MC, indicating a general lack of dialogue around these topics. Even if male coaches are a majority among female athletes in sports, there was a greater chance that athletes communicated with their female coaches than with their male coaches, 44% and 22% respectively (6). This topic is also considered to be taboo and private in the athletic environment (4, 5). Furthermore, discussing FH and MC with the coach is not always an obvious choice among female athletes (4, 7, 5). Athletes may think that their coach does not has enough knowledge or interest in the athletes´ MC or FH, which male coaches themselves also state regarding the lack of knowledge (5, 8). The fear of being seen as weak by the coach if mention their MC-related symptoms may also be a factor (5). A factor that may improve the communication between athletes and coaches is a strong coach-athlete relationship. This can be measured through the coach-athlete relationship questionnaire (CART-Q), a tool used in prior intervention studies on MC and FH (5, 7, 9).

Epidemiology (134)

Female athletes perceive their MC differently in training and performance during the various MC phases, fig. 1. Some feel that their physical fitness and/or performance improves whereas some feel the opposite during specific phases. Previous research suggests that some athletes may experience decreased physical fitness and performance during phase one of the MC. During phase 2-3, after the bleeding, physical fitness was perceived as the greatest (2,6,10). However, the evidence for this is poor, and not all studies support this (10,11). Due to MC-related symptoms, athletes may consider making changes and plan their training around their MC based on personal and individual experiences. Stomach pain and bloating are two common side effects of the MC. As shown in prior studies, stomach, and lower back pain were reported to influence some athletes' training plans (6,12).

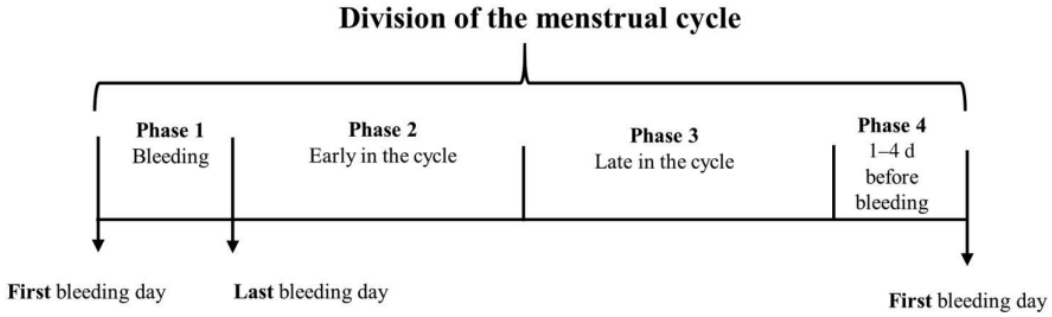

Fig.1. Definitions of the different phases of the MC, presented in Solli et al. 2020 (6).

Health effects of MC in athletes (373)

Solli et al. reported data on endurance athletes which showed that the average age at menarche (first bleeding) was at 14-year-old, and 15% were older than 16 years old, thus categorised as primary amenorrhea (menarche after 15 years of age) (1,6). Whereas 13% and 17% reported less than 5 respectively 5-9 bleeding the previous year. (6). Another study found similar percentage (17%) of less than 9 bleedings in a year among high school female athletes (13). This menstrual status of infrequent bleeding is also called oligomenorrhea and is defined as less than 9 bleedings in a year. An irregularity of the menses was seen to be related to poorer knowledge about menstrual status and bone health (11). In one study, junior football players perceived their MC symptoms differently. One player mentioned having infrequent periods and stated it was normal for her and not causing any issues (5).

Another study on high school athletes reported that almost 50% thought losing their menstruation during sports performance was normal (14). This is seen in Solli et al´s study, where 30% and 23% lost their menstrual bleeding to high volumes of training and a large amount of high-intensity training (6).

The absence of menstruation affects the female athlete's body and harms bone health. The absence of menstruation, low bone mineral density (BMD), and low energy availability constitute the Female Athlete Triad (triad) and to be identified with the triad, at least one of these factors must be present (13-15). Brown et al. reported that almost half of their participants had two or more risk factors of the triad, some of these had history of amenorrhea and stress fractures and self-reported not eating enough (14). A similar condition to the triad that affects female athletes (and males) is Relative Energy Deficiency in Sport (REDs), which affects energy availability, MC, bone health, and other systems such as the cardiovascular system and mental health. Prior studies exploring the awareness and risk factors of REDs have shown inadequate awareness among coaches and athletes (16,17). A better understanding of how the absence of a healthy MC can affect an athlete may improve athletes' energy intake and bone density and provide insight into the risk factors of the triad and REDs (17, 18).

Intervention programs (59)

Prior studies in research are done at adult female athletes, though, it is recommended to implement educational interventions early in an athlete´s career to optimise their development in sport (7). With this information, spreading information and educate female athletes and their coaches about MC/FH is a way to improve their knowledge, health and overcome barriers in communication (5, 7,18).

Practical relevance (Word count: 313)

The study intervention took place in a football academy consisting of female adolescent football players aged 12-19, which was relevant for addressing the topic.

Prior intervention programs show improvements in knowledge and communication between female athletes and coaches through various projects (5, 7, 18). One study showed that female football players not only improved physical aspects (body composition, energy intake, and bone density) but also gained a deeper understanding and awareness of FH through a conditioning program where they participated in pre-intervention measurements (characteristics, self-conditioning, energy balance, body weight, and menstrual management) and later attended a lecture about the triad, menstruation, sports nutrition, and underwent physical condition

screenings 6 months later. Body weight and lean body mass significantly increased thanks to the conditioning program (18). Another study investigated perceptions and experiences of athletes and coaches regarding communication on MC through a survey, educational program, and semi-structured focus group interviews. They found that a strong coach-athlete relationship may reduce communication barriers and that organised and structured forum groups are recommended to encourage open communication between athletes and coaches (7).

As described in the background, the menstrual health literacy among female athletes is poor (19), due to their underrepresentation in sport science research. This persists despite the increasing participation of elite female athletes in sports nowadays compared to before (20, 21). Research needs to address the challenges of including women in studies, despite the complexity of fluctuating hormones during the MC, to improve the quality of future research in female athletes (21).

These strategies enhance knowledge and communication by educating athletes and promoting discussion. Starting these interventions early in an athlete's career is recommended (5, 7, 18). Hence, this study aims to, 1) bridge knowledge and communication gaps, 2) improve understanding of MC's impact on training and performance among adolescent female football players, and male coaches, and 3) provide educational resources to a football academy.

Work flow (Word count: 527)

Implementation process and intervention design (119)

Before the intervention, a consultation was held with a university teacher specialising in MC/FH to plan its implementation in a sports organisations/clubs. The idea was proposed to the head of a girls' football academy in Stockholm, to discuss and identify what the academy lacked regarding MC/FH and present suggestions from research. The head of the academy was consulted about their needs and interests. An example of how it could be done was provided, and Höök et al.'s model was presented (7), fig.2.

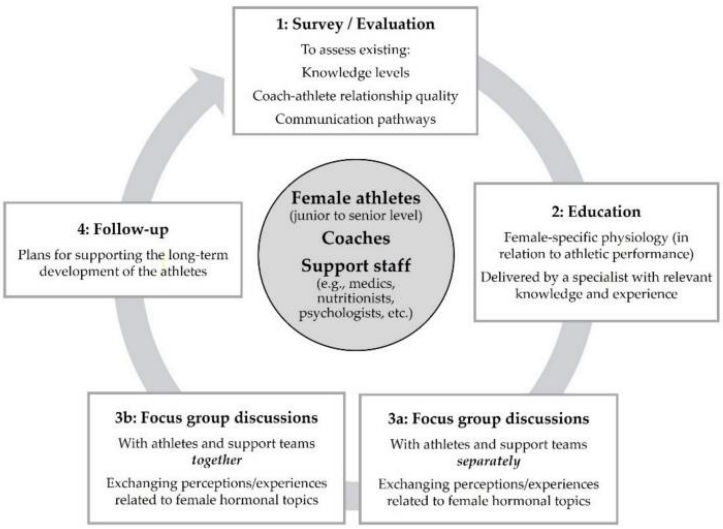

Fig.2. "A working model for overcoming barriers to communicating about female hormonal cycle", by Höök et al. (7).

Topics related to MC that the academy wanted to address included basic knowledge of MC and HC, its relation to training and performance, nutrition and eating disorders (REDs), sports injuries, and strategies to support players through MC.

The educational intervention session, step by step (281)

After planning the study format, the intervention program was structured into four steps conducted in a single session, referred to as “educational intervention session”, fig. 3.

1) A survey was conducted with questions regarding participants' age, active years as player/coach, education, MC experiences (players only), and knowledge, including the CART-Q. Majority of the questions were selected from prior studies (3, 6, 9) and translated into Swedish. The CART-Q 11-item questionnaire has also been validated for translation into Swedish (22). This questionnaire employs a 7-point scale, ranging from 1(*Strongly disagree*) to 7 (*Strongly agree*) (9). For this study, option *"Don't know"* was added to the scale (appendices 1-2). It is a reliable and validated self-report measure used to assess the quality of the coach-athlete relationship. It evaluates affective, cognitive, and behavioural aspects, encompassing variables such as “Closeness”, “Commitment” and “Complementarity” (7, 9).

2) An educational PowerPoint-presentation covering basic knowledge of MC/HC, its relation to training and performance, the triad/REDs, and sports injuries in relation to FH/MC was delivered during 1,5-2 hours. What the academy asked for was considered in the PowerPoint-presentation as much as possible. The primary content of the PowerPoint-presentation was sourced from materials providing information on menstrual health and educational resources from national sports organisations and research groups cited in McGawley et al. (19), table. 1.

3) Discussion groups were set up with players and coaches separately, using 13 selected questions from the Menstrual Attitude Questionnaire (MAQ) (23). No data were collected, the goal was to open a discussion between players and coaches, (appendix 3).

4) A second survey was conducted to evaluate the educational intervention session (appendices 1-2).

The weekly progress of the program is presented in table 2.

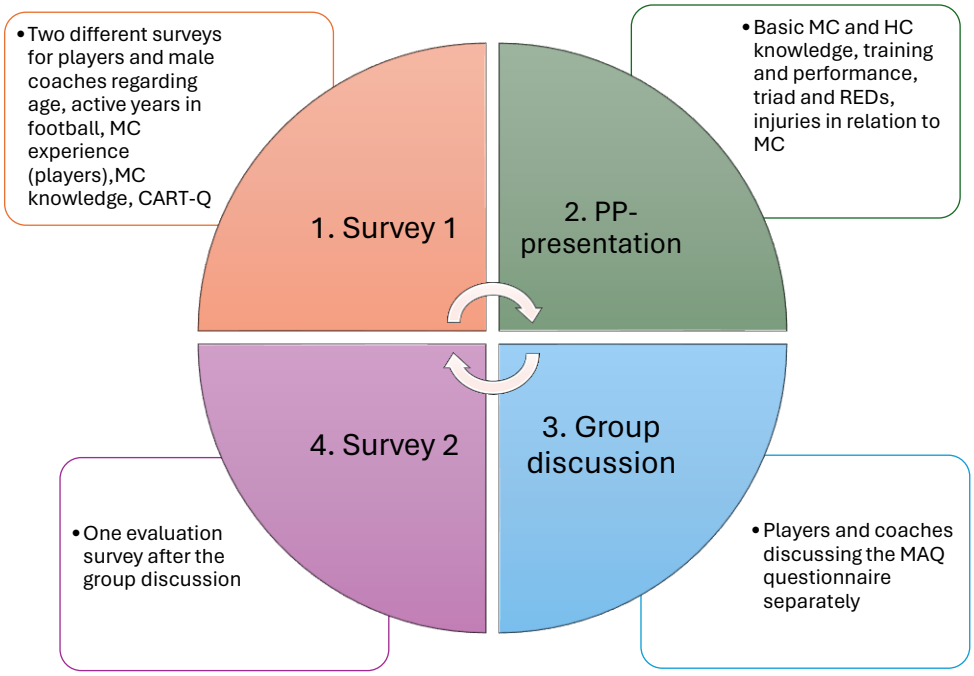

Fig. 3. Model of the "educational intervention session".

MC: Menstrual cycle
HC: Hormonal contraceptive
CART-Q: Coach-athlete relationship questionnaire
REDs: Relative energy deficiency in sport
MAQ: Menstrual attitude questionnaire

Table 1. Main resources used in the PowerPoint-presentation.

Three main resources selected from McGawley et al. (19) 2023
Netball New Zealand: Netball Smart – SmartHealth Handbook
Safe Parasport: The Female Para Athlete
Australian Institute of Sport: Female Performance & Health Initiative

Table 2: The weekly process of the educational intervention session is presented in 5 steps, from February to April 2024.

	Weekly process of the educational intervention session
Week 7-8	**Anchoring conditions with the football academy.**
Week 9-11	**Background reading and literature search**
Week 13-14	**Planning and designing the presentation and surveys**
Week 17	**Delivering the educational intervention session.**
Week 17	**Analysing the results and start writing on the portfolio.**

Participants (94)

The football academy consists of female adolescent players, 1-2 coaches each team (predominantly male), one goalkeeper coach, two female- and one male physiotherapists and two male S&C coaches.

This study aimed at girls aged 15-19, and their male coaches.

The participants signed an informal consent form which was distributed 2-3 weeks before the educational intervention session. No parental consent was required for the younger players according to the Swedish Ethics Review Board (appendix 4).

Overall, 13 players and two male head coaches participated. Sufficient participants were included given the study's focus and questionnaire (24).

Survey data analysis (33)

Data from the two surveys (each player/coach) were entered into Excel for quantitative analysis, using basic descriptive statistical measures. This approach was selected because the surveys consist of both open- and closed-ended questions.

Scientific reflections (Word count: 637)

Reflecting Challenges (167)

Since MC/FH is lacking in sports, it was not challenging to find an organisation/club, given prior experience in former workplaces with female athletes. Implementing this with younger athletes was personally preferable, as it feels easier to shape them, it is also recommended based on prior study (7). Moreover, the academy head's interest in this topic welcomed the opportunity to raise awareness.

Despite having prior education on MC/FH, it was challenging to conduct background reading on basic knowledge of MC/FH, concerning training and performance, for inclusion in the PowerPoint-presentation. Selecting valuable questions for the study's purpose was another challenge, not to overwhelm the participants with too many questions (25). This had to fit within 1.5-2-hours, in which participants completed the survey, engaged in a PowerPoint presentation, discussed MAQ, and filled out an evaluation survey. For future interventions like this, scheduling a longer session than 2 hours for an optimal intervention would be helpful. Studying prior research enabled the creation of an educational intervention program (7, 9, 19, 23).

Consideration and insights of present work (470)

The high survey response rates were beneficial, with everyone completing all questions. Additionally, their positive attitude toward the educational intervention session resulted in success. At the same time, seven participants did not want to change anything in their approach to MC in training and performance (appendix 5.2). The reason for this is unknown since there were no follow-up questions, which may enhance the understanding of the impact of the intervention (7), but factors such as menstrual attitudes may be a way to normalise these barriers. This was discussed in the group discussion, using MAQ to facilitate discussions for players and coaches separately. This step was intended to foster dialogue, and as such, no data was collected. Despite MAQ being an older questionnaire, it has been used in modern contexts among athletes to assess menstrual attitudes (26). Assessing menstrual attitudes may reveal adolescents' feelings toward MC (27, 28). Present study indicates a majority are open to discussing their MC in the future. Normally, players may anticipate that coaches are less interested (5), however, observing coaches engaging in this topic may encourage players to find it more normalised.

The extent of Closeness and Complementarity can anticipate how satisfied players/coaches are with their relationship (9, 29). This was observed in this study, making it more valuable to include CART-Q, as it may have an impact on their well-being and performance (29). Moreover, it may facilitate open communication about MC, (appendix 5.5).

Previous studies used semi-structured interviews, to explore MC knowledge and communication. This may yield more in-depth information and make respondents more comfortable when answering questions (5, 7, 30-32). Additionally, interview samples contribute to greater *information power* when the study has a narrow aim, high-quality dialogue, and well-established theory. This also leads to requiring fewer participants (24,33). With few participants who attended this study, interviews may have given more information from each individual but at the same time, it would be time-consuming.

For other methods, web-based resources are effective and less time-consuming. They may provide a comprehensive intervention, including more questions and information, to engage

young female athletes in MC, improving health literacy, self-management, and motivation to seek medical advice (34).

Another study highlighted the importance of including female coaches and practitioners in discussions about MC/FH. Even though they may have more experience than male coaches, there is still a lack of knowledge among women (31). Female athletes are more likely to discuss their MC with female coaches (6, 30). Additionally, the knowledge of MC among sports medicine team is not always a given topic. Involving them would provide additional support, particularly in terms of knowing how to utilize information such as tracking MC among athletes (35). Considering this for future intervention, involving both female and male coaches, physiotherapists, and S&C coaches would have been beneficial for providing comprehensive support to the players.

Take-home message

To summarize this study and what prior studies have shown, four key take-home messages are presented below:

- There is a major interest in the academy (among coaches and players) in gaining more knowledge about MC in training and performance. An informative poster for the academy will serve as "the lasting legacy" of this work (appendix 6).

- One-third of the participants found it difficult to talk about MC, and 10 out of 15 expressed a desire to discuss it in the future. For this, effective educational intervention programs could help improve the knowledge and communication between female athletes and coaches.

- For a more comprehensive understanding and collection of informative data, semi-structured focus group interviews have been previously conducted with positive results. Ideally, educational interventions should be implemented at an early stage in a female athlete's career and would be a good consideration for the academy. For a better understanding, a follow-up would enhance the intervention to assess its impact on the participants.

- To enhance overall knowledge and communication regarding MC to training and performance, it is essential to involve not only male coaches but also female coaches and medical staff.

References

1.Itriyeva K. The normal menstrual cycle. Curr Probl Pediatr Adolesc Health Care. 2022; 52(101183):1-5. doi.org/10.1016/j.cppeds.2022.101183

2.Fehring RJ, Schneider M, Raviele K. Variability in the Phases of the Menstrual Cycle. JOGNN. 2006;35:376-384. DOI: 10.1111/j.1552-6909.2006.00051.x.

3.Larsen B, Morris K, Quinna K, Osbornec M, Minahan C. Practice does not make perfect: A brief view of athletes' knowledge on the menstrual cycle and oral contraceptives. JSAMS. 2020; 690–694.doi.org/10.1016/j.jsams.2020.02.003.

4.von Rosen P, Ekenros L, Solli G.S, Sandbakk Ø, Holmberg H-C, Hirschberg AL, Fridén C. Offered Support and Knowledge about the Menstrual Cycle in the Athletic Community: A Cross-Sectional Study of 1086 Female Athletes. Int. J. Environ. Res. Public Health. 2022;19(11932):1-10. https://doi.org/10.3390/ ijerph191911932

5.Bergström M, Rosvold M, Sæther SA. "I hardly have a problem [...] I have my period quite rarely too": Female football players' and their coaches' perceptions of barriers to communication on menstrual cycle.Front. Sports Act. Living. 2023;5(1127207):1-9. doi: 10.3389/fspor.2023.1127207.

6.Solli GS, Sandbakk SB, Noordhof DA, Ihalainen JK, Sandbakk Ø. Changes in Self-Reported Physical Fitness, Performance, and Side Effects Across the Phases of the Menstrual Cycle Among Competitive Endurance Athletes. IJSPP. 2020;15:1324-1333. https://doi.org/10.1123/ijspp.2019-0616.

7. Höök M, Bergström M, Sæther S.A, McGawley K. "Do Elite Sport First, Get Your Period Back Later." Are Barriers to Communication Hindering Female Athletes? Int. J. Environ. Res. Public Health. 2021;18,(12075):1-17. https:// doi.org/10.3390/ijerph182212075

8. Clarke A, Govus A, Donaldson A. What male coaches want to know about the menstrual cycle in women's team sports: Performance, health, and communication. Int J Sports Sci Coach. 2021;16(3):544–553. DOI: 10.1177/1747954121989237.

9. Jowett S, Ntoumanis N. The Coach–Athlete Relationship Questionnaire (CART-Q): development and initial validation. Scand J Med Sci Sports. 2004;14: 245–257. DOI: 10.1046/j.1600-0838.2003.00338.x

10. McNulty KL, Elliott-Sale KJ, Dolan E, Swinton PA, Ansdell P, Goodall S, Thomas K, Hicks KM. The Efects of Menstrual Cycle Phase on Exercise Performance in Eumenorrheic Women: A Systematic Review and Meta-Analysis. Sports Medicine. 2020:1-15. https://doi.org/10.1007/s40279-020-01319-3

11. Colenso-Semple LM, D'Souza AC, Elliott-Sale KJ and Phillips SM. Current evidence shows no influence of women's menstrual cycle phase on acute strength performance or adaptations to resistance exercise training. Front. Sports Act. Living. 2023;5:1054542:1-9. doi: 10.3389/fspor.2023.1054542

12. Taylor M, Osborne J, Topranin V, De Martin, Engseth T, Solli G, Valsdottir D, Andersson E, Øistuen G, Flatby I, Welde B, Morseth B, Haugen T, Sandbakk Ø, Noordhof D. Menstrual Cycle Phase has no Influence on Performance-Determining Variables in Endurance-Trained Athletes:

The FENDURA Project. Medicine & Science in Sports & Exercise. 2024;1-47. DOI: 10.1249/MSS.0000000000003447

13. Feldmann JM, Belsha JP, Eissa MA, Middleman AB. Female Adolescent Athletes' Awareness of the Connection between Menstrual Status and Bone Health. J Pediatr Adolesc Gynecol. 2011;24:311-314. doi:10.1016/j.jpag.2011.05.011.

14. Brown KN, Wengreen HJ, Beals KA. Knowledge of the Female Athlete Triad, and Prevalence of Triad Risk Factors among Female High School Athletes and their Coaches. J Pediatr Adolesc Gynecol. 2014; 27: 278-282. http://dx.doi.org/10.1016/j.jpag.2013.11.014.

15. Barrack MT, Rauh M, Nichols JF. Prevalence of and Traits Associated with Low BMD among Female Adolescent Runners. Acsm-Msse. 2008; 2015-2021. DOI: 10.1249/MSS.0b013e3181822ea0.

16. Mountjoy M, Sundgot-Borgen J, Burke L, Carter S, Constantini N, Lebrun C, Meyer N, Sherman R, Steffen K, Budgett R, Ljungqvist A. The IOC consensus statement: beyond the Female Athlete Triad—Relative Energy Deficiency in Sport (RED-S). Br J Sports Med. 2014;48:491–497. DOI:10.1136/bjsports-2014-093502.

17. O'Donnell J, White C, Dobbin N. Perspectives on relative energy deficiency in sport (RED-S): A qualitative case study of athletes, coaches and medical professionals from a super league netball club. Plos one. 2023;18(5):1-19.https://doi.org/10.1371/journal.pone.0285040.

18. Aizawa K, Iwasaki A, Yanagisawa K, Arai C, Hayashi K, Nakamura Y, Tomikawa M, Watanabe E, Kukidome T. Effect of Improving Physical Conditions and Female Athlete Literacy Behaviors: Intervention Study. Translational Journal of the ACSM. 2019;4(20):235-241.

19. McGawley K, Sargent D, Noordhof D, Badenhorst C.E, Julian R, Govus AD. Improving menstrual health literacy in sport. JSAMS. 2023;26:351–357. https://doi.org/10.1016/j.jsams.2023.06.007.

20. Cowley E, McNulty K, Olenick A. "Invisible Sportswomen": The Sex Data Gap in Sport and Exercise Science Research. WSPAJ. 2021;29(2):1-20. DOI: 10.1123/wspaj.2021-0028

21. Elliott-Sale KJ, Minahan CL, Janse de Jonge XAK, Ackerman KE, Sipilä S, Constantini NW, Lebrun CM, Hackney AC. Methodological Considerations for Studies in Sport and Exercise Science with Women as Participants: A Working Guide for Standards of Practice for Research on Women. Sports Medicine. 2021;51:843–861. https://doi.org/10.1007/s40279-021-01435-8.

22. Yang SX, Jowett S. Psychometric properties of the CoacheAthlete Relationship Questionnaire (CART-Q) in seven countries. Psychol. Sport Exerc. 2012;13:36-43. doi:10.1016/j.psychsport.2011.07.010.

23. Brooks-Gunn J, Ruble D. The Menstrual Attitude Questionnaire. Psychosomatic Medicine. 1980;42(5):503-512.

24. Malterud K, Siersma VK, Guassora AD. Sample Size in Qualitative Interview Studies: Guided by Information Power. Qual. Health Res. 2016;26(13):1753–1760. DOI:10.1177/1049732315617444.

25. Deutskens E, De Ruyter K, Wetzels M, Oosterveld P. Response Rate and Response Quality of Internet-Based Surveys: An Experimental Study. 2004;15(1):21-36.

26. Şahin FN. Evaluation of Menstural Attitude of Collegiate Athletes. Life Sci J. 2013;10(6s):295-300.

27. Morse J, Kieren D, Bottorff J. The adolescent menstrual attitude questionnaire, part I: Scale construction. Health Care for Women International. 1993;14:39-62. DOI: 10.1080/07399339309516025.

28. Kolic PV, Sims DT, Hicks K, Thomas LB, Morse CI. Physical Activity and the Menstrual Cycle: A Mixed-Methods Study of Women's Experiences. WSPAJ. 2021;29(1):1-43.

29. Jowett S, Cockerill IM. Olympic medallists' perspective of the althlete–coach relationship. Psychol sport exerc. 2003;4:313–331. doi:10.1016/S1469-0292(02)00011-0.

30. Brown N, Knight CJ, Forrest LJ. Elite female athletes' experiences and perceptions of the menstrual cycle on training and sport performance. Scand J Med Sci Sports. 2021;31:52–69. DOI: 10.1111/sms.13818.

31. Brown N, Knight CJ. Understanding female coaches' and practitioners' experience and support provision in relation to the menstrual cycle. Int. J. Sports Sci. Coach. 2022;17(2):235-243. DOI: 10.1177/17479541211058579.

32. Findlay RJ, Macrae HER, Whyte I, Easton C, Forrest LJ. How the menstrual cycle and menstruation affect sporting performance: experiences and perceptions of elite female rugby players. Br J Sports Med. 2020;54:1108-1113. doi:10.1136/bjsports-2019-101486.

33. Morse JM. Determining Sample Size. Qual. Health Res. 2000;10(1):3-5.

34. Armour M, Parry K, Curry C, Ferfolja T, Parker M, Farooqi T, Macmillan F, Smith C, Holmes K. Using an online intervention to improve menstrual health literacy and self-management in young women: a pilot study. Research Square. 2021. DOI: https://doi.org/10.21203/rs.3.rs-841718/v1.

35. O'Loughlin E, Reid D, Sims s. Discussing the menstrual cycle in the sports medicine clinic: perspectives of orthopaedic surgeons, physiotherapists, athletes and patients. Qual res Sport Exerc health. 2023;15(1):139-157. DOI: 10.1080/2159676X.2022.2111459.

Appendices

Appendix 1: Surveys for male coaches/staff

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Frågeformulär för tränare/ledare innan powerpoint-presentation

Vänligen fyll i följande punkter om ålder, utbildning och kön

- Ålder: _____
- Din roll i klubben/akademin: _____
- Antal aktiva år som tränare/ledare:_____
- Kön:
  -Man
  -Kvinna
  -Annat alternativ

Vänligen fyll i din högsta avklarade utbildning eller pågående utbildning

- Vad är din högsta utbildningsnivå? _____
- Pågående utbildning? _____

Vänligen fyll i följande frågor om menstruationscykeln och kommunikation mellan spelare och tränare. Under fråga två kan du ringa in flera svarsalternativ

1.Tycker du att du har tillräckligt med kunskap om hur menstruationscykeln kan påverka träning och prestation?

Ja
Nej

2.Med vem har du diskuterat menstruationscykeln i relation till träning och prestation?

-Andra kollegor
-Vänner
-Familj
-Läkare
-Spelare
-Fysioterpeut
-Ingen

22/04/2024

3.Hur länge har du haft dina nuvarande spelare?

0-1 år, 2-4 år, 5-10 år

4.Har du pratat med dina spelare om menstruationscykeln i relation till träning och prestation under det senaste året?

Ja
Nej

5. Upplever du att det är jobbigt att prata med dina spelare om menstruationscykeln i relation till träning och prestation?

Ja
Om ja, isåfall varför? _____
Nej

6. Vill du prata med dina spelare om menstruationscykeln i relation till träning och prestation?

Ja
Nej
Vet ej

Vänligen fyll i följande frågor om menstruationscykeln

7. Vad skulle du vilja lära dig om menstruationscykeln i relation till träning och prestation?

Detta vill jag lära mig (kort svar):_____
Vill inte lära mig något
Vet ej

8. Vad kan hända med en tjej eller kvinna som övertränar inom sport eller träning med hänsyn till den menstruella cykeln?

Detta kan hända (kort svar):_____
Vet ej

9. Vet du vad ammonerré hos en kvinna/tjej innebär?

Ja, isåfall vad?:_____
Vet ej

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Vänligen ringa in ett nummer under följande frågor om "tränare-idrottare-relationen"

10. Jag känner mig nära mina spelare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

11. Jag känner mig engagerad i mina spelare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

13. Jag känner att min tränarkarriär är lovande med mina spelare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

14. Jag gillar mina spelare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

15. Jag litar på mina spelare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

16. Jag respekterar mina spelare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

17. Jag känner uppskattning för dom uppoffringar mina spelare har gått igenom för att förbättra sin prestation
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

18. När jag coachar mina spelare, känner jag mig avslappnad
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

19. När jag coachar mina spelare, känner jag mig öppen och mottaglig för deras ansträngningar
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

20. När jag coachar mina spelare, är jag redo att göra mitt bästa
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

21. När jag coachar mina spelare, visar jag ett vänligt beteende
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

22/04/2024

Frågeformulär för tränare/ledare efter powerpoint-presentation

Vänligen fyll i följande frågor om vad du tyckte om detta lärotillfälle och om du vill använda denna kunskap/erfarenhet i framtiden.

1. Var detta tillfälle lärorikt för dig?

Ja
Nej
Vet ej

2. Har du lärt dig något nytt?

Ja
Om ja, isåfall vad? (kort svar): _____
Nej
Vet ej

3. Kommer du att ändra något i ditt tillvägagångssätt gällande menstruationscykeln i relation till träning och prestation i din roll som tränare/ledare?

Ja
Om ja, isåfall vad? (kort svar): _____
Nej
Vet ej

4. Är du mer öppen för att prata och diskutera kring detta ämne med dina spelare i framtiden?

Ja
Nej
Vet ej

Appendix 2: Surveys for players

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22/04/2024

Frågeformulär för spelare innan powerpoint-presentation

Vänligen fyll i följande punkter om ålder och hur länge du spelat fotboll

- Ålder: _____
- Antal aktiva år inom fotboll:_____

Vänligen fyll i din pågående utbildning.

- Högstadium årskurs:_____
- Gymnasie årskurs:_____

Vänligen fyll i följande frågor om din menstruationscykel. Under fråga tre kan du ringa in flera svarsalternativ.

1.Vet du hur gammal du var när du fick din första mens?

Ja
Om ja, ange isåfall vid vilken ålder du fick din första mens:_____
Nej
Vet ej

2.Har du ändrat ditt träningsschema på grund av menstruationscykelns relaterade symptom det senaste året?

Ja
Nej

3.Har du ändrat ditt träningsschema på grund av dessa menstruationsrelaterade symptom det senaste året?

-Magsmärta
-Ländryggssmärta
-Diarré
-Humörsvängningar
-Svullnad
-Ökad aptit
-Minskad aptit
-Viktökning

22/04/2024

4.Har du använt smärtstillande medicin för att minska menstruationsrelaterad smärta under senaste året?

Ja
Nej

5.Har du upplevt att din mens försvinner under perioder av hög träningsvolym?

Ja
Nej

Vänligen fyll i följande frågor om menstruationscykeln och kommunikation mellan spelare och tränare/ledare. Under fråga åtta kan du fylla i flera svarsalternativ.

6.Planerar du din träning utifrån din menscykel?

Ja
Nej

7.Tycker du att du har tillräckligt med kunskap om hur menstruationscykeln kan påverka träning och prestation?

Ja
Nej

8.Med vem har du diskuterat menstruationscykeln i relation till träning och prestation?

-Andra spelkamrater
-Vänner
-Familj
-Läkare
-Tränare
-Fysioterpeut
-Ingen

9.Hur länge har du haft dina nuvarande tränare/ledare?

0-1 år, 2-4 år, 5-10 år

22/04/2024

10.Har du pratat med din tränare/ledare om menstruationscykeln i relation till träning och prestation under det senaste året?

Ja
Nej

11. Upplever du att det är jobbigt att prata med dina tränare/ledare om menstruationscykeln i relation till träning och prestation?

Ja
Om ja, isåfall varför?:_____
Nej

12. Vill du prata med dina tränare/ledare om menstruationscykeln i relation till träning och prestation?

Ja
Nej
Vet ej

Vänligen fyll i följande frågor om menstruationscykeln

13. Vad skulle du vilja lära dig om menstruationscykeln i relation till träning och prestation?

Detta vill jag lära mig (kort svar):_____
Vill inte lära mig något
Vet ej

14. Vad kan hända med en tjej eller kvinna som övertränar inom sport eller träning med hänsyn till den menstruella cykeln?

Detta kan hända (kort svar):_____
Vet ej

15. Vet du vad ammonerré hos en kvinna/tjej innebär?

Ja, isåfall vad?:_____
Vet ej

22/04/2024

Vänligen markera ett nummer under följande frågor om "tränar-idrottare-relationen"

16. Jag känner mig nära mina tränare/ledare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

17. Jag känner mig engagerad i mina tränare/ledare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

18. Jag känner att min idrottskarriär är lovande med mina tränare/ledare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

19. Jag gillar mina tränare/ledare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

20. Jag litar på mina tränare/ledare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

21. Jag respekterar mina tränare/ledare
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

22. Jag känner uppskattning för dom uppoffringar mina tränare/ledare har gått igenom för att förbättra sina prestationer
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

23. När jag bli coachad av mina tränare/ledare, känner jag mig avslappnad
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

24. När jag bli coachad av mina tränare/ledare, känner jag mig mottaglig för deras ansträngningar
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

25. När jag bli coachad av mina tränare/ledare, är jag redo att göra mitt bästa
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

26. När jag bli coachad av mina tränare/ledare, visar jag vänligt beteende
1 (instämmer inte) 2 3 4 (vet ej) 5 6 7 (instämmer helt)

22/04/2024

Frågeformulär för spelare efter powerpoint-presentation

Vänligen fyll i följande frågor om vad du tyckte om detta lärotillfälle och om du vill använda denna kunskap/erfarenhet i framtiden.

1. Var detta tillfälle lärorikt för dig?

Ja
Nej
Vet ej

2. Har du lärt dig något nytt?

Ja
Om ja, isåfall vad? (kort svar): _____
Nej
Vet ej

3. Kommer du att ändra något i ditt tillvägagångssätt gällande menstruationscykeln i relation till träning och prestation i din roll som spelare?

Ja
Om ja, isåfall vad? (kort svar): _____
Nej
Vet ej

4. Är du mer öppen för att prata och diskutera kring detta ämne med dina tränare/ledare i framtiden?

Ja
Nej
Vet ej

Appendix 3: Menstrual Attitude Questionnaire MAQ (13 selected items for the group discussion).

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22/04/2024

Frågeunderlag efter powerpoint-presentation

Diskutera tillsammans i grupp dessa utvalda frågor från *"Menstrual Attitude Questionnaire (MAQ)"*. "MAQ utvärderar attityder gentemot menstruation, inklusive kunskap, bekvämlighet och kommunikation kring menstruationsrelaterade frågor." Här krävs inga rätta svar utan målet är att skapa en öppen dialog och diskussion kring ämnet.

1. Kvinnans prestation inom idrott påverkas inte negativt av menstruation.
2. Det är vanligt att kvinnor känner sig tröttare än vanligt under menstruationen.
3. Vanliga kroppsliga förändringar under menstruationen är oftast inte värre än andra svängningar/symtom i ens fysiska tillstånd.
4. Menstruation kan negativt påverka min prestation inom idrott.
5. Det är ofta mycket klokt att undvika vissa aktiviteter under menstruationen.
6. Kvinnor måste helt enkelt acceptera att de kanske inte presterar lika bra när de har mens.
7. Mens gör att kvinnor kan vara mer medvetna om sina kroppar.
8. Den återkommande månatliga menstruationsflödet är en yttre indikation på en kvinnas generellt goda hälsa.
9. De flesta kvinnor upplever en viktökning strax före eller under menstruationen
10. Andra bör inte vara kritiska mot en kvinna som lätt blir upprörd före eller under sin menstruationsperiod
11. Att kvinnor klagar över menstruationsbesvär är bara en ursäkt.
12. PMS/irritabilitet före menstruationen är bara inbillning hos kvinnan.
13. Män har en verklig fördel med att inte ha den månatliga störningen av en menstruationsperiod.

Appendix 4: Information and consent form

Informations- och samtyckesformulär

Titel på studien

"Kunskap och kommunikation om menstruationscykeln och dess effekter på träning och prestation bland fotbollsspelande tonårsflickor och deras manliga tränare/ledare- En interventionsstudie"

Kort bakgrund och syfte med studien

Denna interventionsstudie syftar till att adressera kunskapsbrister och förbättra kommunikationen om menstruationscykeln och dess effekter på träning och prestation bland fotbollsspelande tonårsflickor och deras manliga tränare/personal. Studien kommer att inkludera en presentation om menstruationscykeln och därefter diskussioner i grupper som hålls vid ett tillfälle tillsammans med spelare i åldern 16–19 år och deras manliga tränare/personal. Data kommer att samlas in genom enkätfrågor före presentationen och efter gruppdiskussionerna vid samma tillfälle. I slutet av studien (sommaren 2024) kommer ett informativt dokument att tillhandahållas till spelare och tränare som en intervention av själva studien.

Datainsamling

All data kommer att vara anonym, och datainsamlingen kommer att bevaras konfidentiellt. Deltagarnas egenskaper såsom exempelvis ålder, kön, utbildningsnivå och vilken roll man har i klubben kommer att inkluderas i studien.

Risker och fördelar

Det finns inga potentiella risker förknippade med deltagande i denna studie. All data kommer att vara anonymt och hållas konfidentiellt. Som en intervention av studien kommer akademin att få tillgång till information och förväntningsvis en ökad kunskap om menstruationscykeln och dess effekter på träning och prestation.

Frivilligt deltagande och rättigheter

Deltagandet i denna studie är frivilligt och deltagarna har rätt att dra tillbaka sitt samtycke när som helst eller välja att inte delta i utbildningssessionen utan påföljd. Deltagarna har rätt att ställa frågor angående sitt deltagande och sin data.

Kontaktinformation

För ytterligare information eller frågor, vänligen kontakta personerna nedan:

Dr. Kerry McGawley, kursledare
E-post: kerry.mcgawley@miun.se
Mittuniversitetet

Dr. Helen Hanstock, handledare för studien
E-post: helen.hanstock@miun.se
Mittuniversitetet

Sirin Tiftikci, student (ansvarig för studien)
E-post: sirin.tiftikci@outlook.com

Bekräftelse av informerat samtycke för studien

Jag har läst och förstått informationen som tillhandahålls i detta formulär. Genom att underteckna nedan samtycker jag frivilligt till att delta och dela data för ändamålet med detta projekt. Jag förstår att ingen individ kommer att vara identifierbar i studien. Jag förbehåller mig även rätten att dra tillbaka mitt samtycke och deltagande vid behov.

Signatur

Deltagarens fullständiga för- och efternamn: _____

Deltagarens signatur: _____

Ort och datum: _____

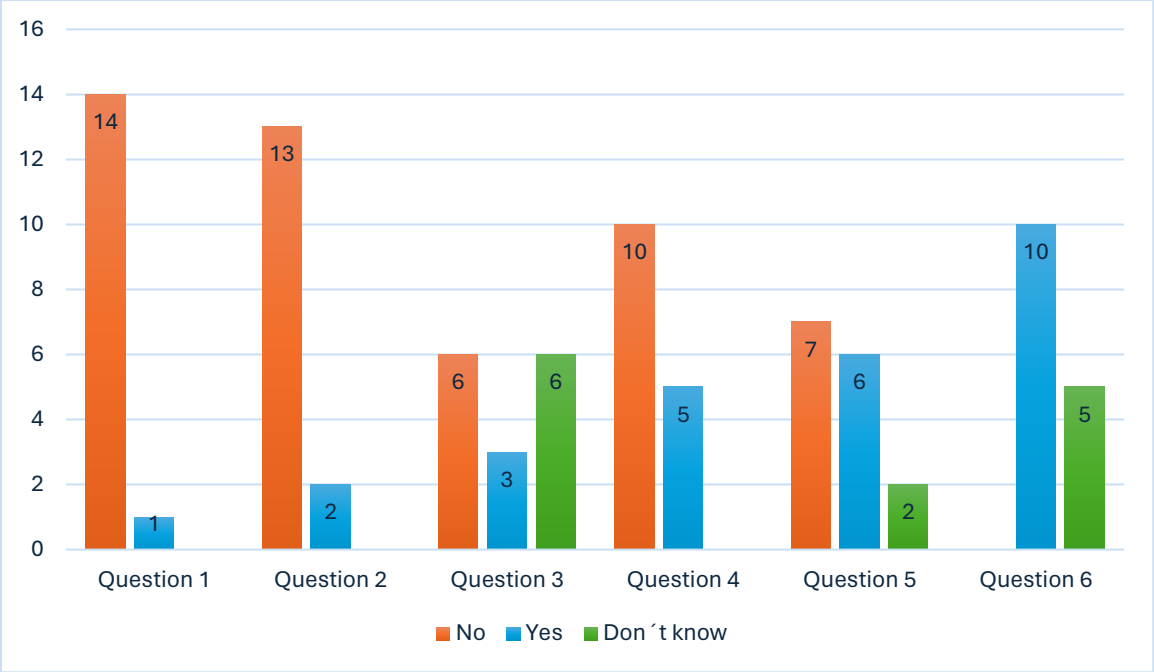
Appendix 5: Results of selected questions from survey 1 and 2

Appendix 5.1: Calculation of the mean age and standard deviation of players and coaches, and players' menarche.

Mean age	Standard deviation
17 (Players, N:13)	1,0
31 (Coaches, N:2)	0,7
14 (Menarche, N:13)	1,2

N: Number of participants

Appendix 5.2: Perception of MC knowledge and communication.



Presented data (N) of the perception of MC knowledge and communication among players and coaches together.
Questions 1-4 are from the survey (1) before the educational intervention session, and questions 5-6 are after (survey 2).
N: Number of participants, MC: Menstrual cycle

Question 1: *Do you feel that you have sufficient knowledge about how the menstrual cycle can affect training and performance?*

Question 2: *Have you talked to your coach/player about the menstrual cycle in relation to training and performance during the past year?*

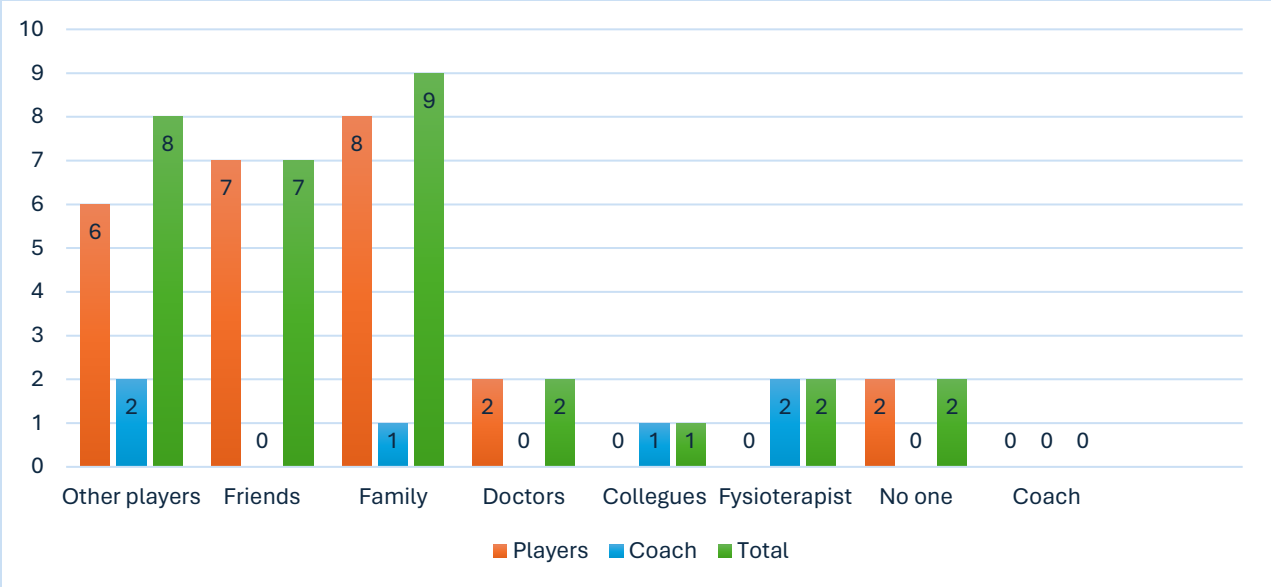
Question 3: *Do you want to talk to your coaches/players about the menstrual cycle in relation to training and performance?*

Question 4: *Do you find it difficult to talk to your coaches/players about the menstrual cycle in relation to training and performance?*

Question 5: *Will you change anything in your approach to the menstrual cycle in relation to training and performance in your role as a player/coach?*

Question 6: *Are you more open to discussing and talking about this topic with your coaches/players in the future?*

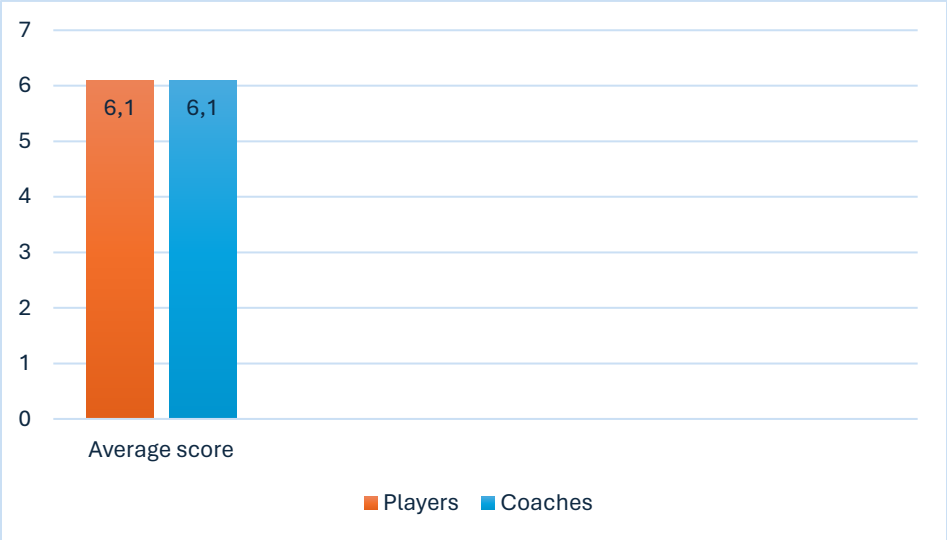
Appendix 5.3: Communicate MC with others.



Presented data (N) of communication about the MC with others among players and coaches.
(From survey 1, appendices 1-2)
N: Number of participants, MC: Menstrual cycle

Question answered by players and coaches in survey 1: *With whom have you discussed the menstrual cycle in relation to training and performance?*

Appendix 5.4: Coach-athlete Relationship Questionnaire



Presented data on average scores in CART-Q for players and coaches. The optional point scale range was 1-7.
(From survey 1, appendices 1-2)

Players (N:13) with an average score of 6,08, rounded to 6,1.
Coaches (N:2) with an average score of 6,09, rounded to 6,1.
N: Number of participants

Appendix 6: "The Lasting Legacy"- A draft of an informative poster for the academy

Menstruationscykeln, träning och prestation

Varför är detta ämne viktigt inom fotboll?
Kunskapsnivån är låg och kommunikationen bristfällig.

Vad händer i puberteten?
Hjärnan börjar producerar kvinnliga könshormoner, östrogen och progesteron.
Debut för menstruation är 11-14 år.

Preventivmedel och MC:

Är syntetiska könshormoner som påverkar den naturliga MC. Kan minska symtom, hjälpa till att planera/kontrollera MC. Kan påverka uthållighetsprestationen- och kapaciteten. Kan ge potentiella effekter psykiskt, ex ökad aggression, tävlingsdrift.

Vad är en hälsosam MC och varför är den viktig?

Bör inträffa varje månad- viktig måttstock för kvinnors hälsa
Debut: 11-14år → Blödning: 3-7 dagar → Längd: 21-35 (28)dagar→ Blodförlust: ca 1/2 dl
Vanliga symtom: mag-, bäcken- och ländryggssmärta
Kan ge insikt i en spelares förmåga att hantera kraven i sin träning och återhämtning.
MC varierar från tjej till tjej.

Hur kan man främja en hälsomsam MC?
Med hjälp av näring/energi, kommunikation, support och övervakning av sin MC.

När ska man kontakta läkare?
Utebliven mens >3månader
Oregelbunden mens
Kraftig mens (>70ml/dag, >7 dagar).
Smärta som hindrar träning och normala aktiviteter.

Träning och prestation under MC

MC bör ej hindra spelare från träning/prestation.
Träning under menstruation kan lindra mentala och fysiska symtom.
Kroppen är kapabel till att kunna prestera under menstruation.
Genom att övervaka sin MC, kan man planera och påverka sin träning/prestation.
Möjligt att uppnå maximala styrkeförbättringar*

Kvinnliga triaden/REDs

Hälsofarliga tillstånd bland idrottare.
Kvinnliga triaden:
Låg energitillgänglighet (Otillräcklig energi till kroppen).
Menstruell dysfunktion (Oregelbunden/utebliven mens)
Låg bentäthet (Benskörhet/svaghet)
REDs: Relativ energibrist inom idrott
Påverkan på flera system i kroppen

Interventionsstudien: Resultat

Intresset för att lära sig om MC och öka kommunikationen kring den är stor

5 av 15 deltagare finner det jobbigt att kommunicera om MC

10 av 15 vill kunna kommunsiera om MC i framtiden

6 av 15 kan tänka sig ändra sitt tillvägagångssätt gällande MC i relation till träning/ prestation i framtiden

Tips till akademin

Introducera utbildningssessioner tidigt för att förbättra kunskap och kommunikation mellan spelare och tränare/ledare.

Viktigt att inkludera både manliga och kvinnliga tränare/ledare samt medicinsk personal i dessa utbidlningssessioner

Källor:
www.netballsmart.co.nz
www.static.ausport.gov.au
www.safeparasport.com
Training during first half of menstrual cycle most efficient (umu.se)*

MC* Menstruationscykeln

Sirin Tiftikci, student in Masters Programme in Sports Performance and Athlete Health