

Current practice and future directions for menstrual health education in menstruating adolescents.

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Abstract

There is a growing concern that menstrual health education is not comprehensively addressed in New Zealand schools. The implementation of health education programmes is greatly varied across schools, and this makes it challenging to bring about changes or improvements in the education on menstrual health issues. Recent studies (Armento et al., 2022; Ciccia, Doyle, Huseth-Zosel & Seco-Turner, 2022; Zonjić et al., 2021) have shown that there is a need for new strategies and guidance for adolescent menstruators to better understand their bodies. By providing more comprehensive and holistic menstrual health education, menstruating adolescents can be well-informed about their health and seek guidance whenever necessary.

This study aimed to identify what adolescents need to learn about menstrual health and the gaps in providing effective menstrual health education (MHE). Using a qualitative case study design, data was collected using individual semi-structured interviews with three Health and PE teachers (HPE) and one semi-structured focus group with five senior students. Critical theory was employed to understand power imbalances and oppressive structures within education. Additionally, the theory, *mana wāhine*, was used as a lens to shine a light on the students' voices to *whakamana* (empower) their menstruating bodies and their shared experiences. Thematic analysis was used to analyse the data, which generated two major themes and ten sub-themes. The findings have demonstrated that menstrual cycles continue to be a subject of shame and stigma in modern society. The problem is rooted in the social and cultural influences that shape the way adolescents and society perceive bodies. In their quest to conform to societal pressures, adolescents make choices that can harm their menstrual health. However, there is a significant opportunity to educate menstruating adolescents about the power and importance of good menstrual health. Specifically, incorporating *te ao Māori* understandings of menstruation could help to eliminate the shame and stigma associated with menstruation. Further research on menstrual health education in schools has the potential to provide a deeper understanding of the current state of menstrual health education and how it could be improved.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Ehara taku toa i te toa takitahi, engari he toa takitini

“My success should not be bestowed onto me alone, it was not individual success but the success of a collective”.

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Chapter 1: Introduction

We are te whare tangata – the house of humanity... We create life. We are Mana Wāhine.

Don't shame me for my red river; respect my flowing blood, as I have the power to create life.

(Personal statement, 2024).

1.1 Background

Long before colonisation occurred in Aotearoa, traditions and beliefs around menstruation for Māori were accepted as normal. Wāhine (Women) Māori were sacred and well-respected, and the period was celebrated. However, with the advent of Western influence, particularly through the introduction of Christian ideologies, menstrual cycles were stigmatised, and menstruating women were seen as unclean (Pihama, 2020). This shift led to shame, silence, and stigma regarding waiwhero, the period. The colonial belief was that menstruation was dirty and this has continued for many years, particularly by Western men (Murphy, 2011). This disgust towards menstruation can infer that a woman is 'less' than a man - a view that has been reinforced by colonisers within a patriarchal society and enforced gender roles (Hayden, 2019; Murphy, 2011).

Mana wāhine is a theory that represents the powerful space that women live and move through and represents wāhine as the holders of knowledge (Pihama, 2020). This theoretical understanding of Mana wāhine has supported me in making sense of my conceptions of menstruation and, as I discuss later in this study, has been a significant tool in helping me to understand the role of menstrual education in Aotearoa, New Zealand (hereafter referred to as Aotearoa, NZ). I started discovering my whakapapa a few years ago and have started my reconnection journey. I work and live in Aotearoa and am of Māori (Ngāti Porou)/Pakeha descent. I have always felt inadequate and ashamed to represent myself as Māori because I missed learning about my whakapapa. Recently, I have realised there is no need to be whakama about wanting to learn and express my Māori side. Instead, I acknowledge the mana required to advocate for younger wāhine Māori in this study and my wider life. I have always felt a need to create change in the space of menstrual education, and I believe that as a wahine Māori, it is in our whakapapa to do so.

Menstrual health education (hereafter referred to as MHE) in Aotearoa, NZ, is often inadequate (Bush, 2017; Li et al., 2020). Despite the New Zealand Curriculum (NZC) (Ministry of Education, 2007) including references to puberty within the Health and Physical Education Achievement Objectives, resources and programmes to support adolescents in menstrual education appear to be absent or outdated (Bush, 2017; Dixon et al., 2022; Li et al., 2020). Menstrual health issues for

adolescents are common, and knowledge of how to deal with or prevent these issues is scarce (Armour, Parry, Steel, & Smith, 2020; Beard, 2019; Dave & Fisher, 2022). Evidence worldwide shows period hygiene, concentration levels, absences in schools and menstrual health literacy all improve when we have programmes or educational resources in place (Armento et al., 2021; Huseth-Zosel & Secor-Turner, 2022; Roux, Chih, Hendriks, & Burns, 2023).

The absence of good quality menstrual education is also particularly concerning for highly active menstruating adolescents. Sport New Zealand (2018) notes a high percentage dropout rate for women at menstruating age. Active adolescents may also be socially influenced to uphold a low body weight, leading to food intake restrictions (Belski et al., 2019). These practices can affect energy requirements and increase the risk of delayed puberty, menstrual irregularities and other health issues due to negative energy balances (Huhmann, 2020; Miller, Kukuljan, Turner, van der Pligt, & Ducher, 2012).

The idea for this research came from my curiosity and my own experiences as an adolescent. Reflecting on my experiences in the Aotearoa, NZ education system, I do not recall any in-depth exposure to MHE. After learning about the links between nutrition and menstruation in my Bachelor's degree, I started to recognise the importance of this knowledge and wondered if there had been any change since I was at school. Was the topic of menstruation still untouched in schools? What knowledge do the young women of today have of their bodies? Are secondary school curriculums inclusive of menstrual education? Moreover, what might menstrual health literacy look like if greater MHE were present in schools?

Educating and empowering our menstruating adolescents through their schooling and sport, now and in the future, is paramount to their well-being. Yet, a review of the literature demonstrates a paucity of research in a specific Aotearoa, NZ context.

1.2 Research Aim and Questions

My research aim was to identify what adolescents need to learn about menstrual health and how teachers can provide effective menstrual health education. I focused on several sub-questions:

- What do Health and Physical Education (HPE) teachers and menstruating adolescents understand about menstrual health?
- What actions do high school teachers take to educate adolescents on menstrual health?
- What is needed to support menstrual education in high schools?

In this study, three health education teachers (one of whom coaches an extracurricular sport) and five students were interviewed to provide insight into the research aim and questions.

1.3 Use of key terms

Firstly, it is important to recognise and respect the visibility and power of women and girls and not diminish their mana as women. I wanted to acknowledge and honour the presence and significance of women and girls in our society. The female body should not be invisible or have the mana of being a woman taken away. While I was grappling with what term to use, I recognised that although it is essential to recognise and respect women's unique experiences and perspectives of menstruation, it was important for me to be inclusive and acknowledge that individuals who identify as male may still have biological characteristics associated with the female gender, including menstruation.

During my research, I reflected on the various terms used to describe individuals who menstruate, such as menstruating females, females, women, and female adolescents. While I initially referred to participants as girls, I have since adopted the phrases 'menstruating adolescents' or 'adolescents who menstruate' throughout the remainder of this dissertation. By using inclusive language, I aim to support all adolescents who menstruate and provide a platform for their voices to be heard when seeking support for their menstrual health and well-being. The use of other key terms and terms used are outlined in the glossary.

1.4 Structure of this Dissertation

Chapter Two provides an overview of the literature examining MHE's current issues and challenges. An insight into current MHE in Aotearoa, NZ, is examined with context given to mātauranga Māori (Māori knowledge). As this case study took place in a special character school (Catholic), particular attention has also been given to the influence of school values on MHE. Lastly, this chapter explores the relationship between adolescent nutrition and MHE.

In Chapter Three, I provide a theoretical framework for this study and describe the methods used to undertake this research. Chapter Four involves a discussion of the key findings and synthesises the two overarching research themes with existing academic literature. The chapter is structured to give voice to wāhine, with a particular emphasis on highlighting the perspectives of the student participants. Finally, the conclusion chapter succinctly summarises my findings, reflects on the implications of these findings and makes recommendations for future study.

Chapter 2: Literature Review

This literature review commences by situating the present study within the broader context of adolescent well-being and education. It presents a critical evaluation of the literature on menstruation education, followed by an examination of key tensions and gaps within Health and Physical Education in the NZC. Special attention is given to the context of Special Character School, te ao Māori and the importance of educating adolescents on appropriate nutrition and fuelling for their physical activity to avoid menstrual health disturbances.

2.1 Why Menstrual Health Matters

The menstrual cycle is an integral part of a woman's physiology, which has been consistently overlooked. Menstruation significantly impacts bone health, immune function, cardiovascular health, muscle health, and behaviour (Armento et al., 2021; Bush, 2017; Dave & Fisher, 2022). There are various aspects pertaining to menstrual health that go beyond the occurrence of menstrual bleeding. A person's physical, mental, emotional, and spiritual well-being all impact how they experience menstruation, affecting their overall health differently. Menstrual health is not only limited to biological components but also involves a holistic approach that considers other factors, such as nutrition and sociocultural beliefs that are related to menstrual health. These factors are important for the well-being of adolescents. Furthermore, terms such as polycystic ovary syndrome, dysmenorrhea, or endometriosis are all important aspects of menstrual health for menstruating adolescents to understand. In December 2015, the American College of Obstetricians and Gynaecologists Committee Opinion advised that menstrual history should be regarded as a vital sign in assessing the health of adolescents. It was emphasised that recognising abnormal menstrual patterns during adolescence could lead to early detection of potential health issues in adulthood. Menstrual health is a crucial aspect of overall well-being for menstruating individuals, encompassing both physical and psychosocial factors. A regular menstrual cycle (occurring every 21-35 days) serves as an important indicator of health, providing monthly insights into a person's ability to manage the demands of daily life, such as fuelling, training load, and recovery. While symptoms such as blood loss, cramping, and pre-menstrual discomfort can be challenging, they should not prevent individuals from engaging fully in school, work, social, or physical activities. Any changes to the menstrual cycle, such as irregularity, absent periods, heavy bleeding or painful cramping, may suggest a physical or psychological imbalance that warrants further attention (American College of Obstetricians and Gynaecologists, 2015).

2.1.1 Menstruation in Adolescence

In the period of adolescence, menstruators face unique hormonal challenges, and menstrual health is considered to be a significant contributor to their well-being (Armento et al., 2021; Beals, 2002; Bush, 2017; Gould, Ridout, & Newton, 2022; Parker, Sneddon, & Arbon, 2010; Tewhaiti-Smith et al., 2022). Menstruating adolescents may experience rapid cognitive, psychological, and physiological growth, affecting their decision-making and how they feel, think and interact with their world. During this significant phase of life, they should be empowered and supported to safeguard their decisions for their sexual and reproductive well-being (Ministry of Education, 2020). The World Health Organization (2023) states that for adolescents to thrive, they require age-appropriate comprehensive sexuality education (which includes menstruation education). This means that adolescents should be exposed to equitable, appropriate and supportive MHE in order for them to maintain their health (WHO, 2023). Adolescence is a critical window for development and often coincides with mental health concerns that contribute to a wide range of psychosocial challenges (Babbott, Roberts, & Consedine, 2023; Li et al., 2020).

2.1.2 Menstrual health within a school environment

It has been highlighted that neglecting menstruation experiences through a lack of comprehensive MHE has increased the risks of associating menstruation as a 'taboo' topic. (Hennegan, Shannon, Rubli, Schwab, & Melendez-Torres, 2019; Huseth-Zosel & Secor-Turner, 2022; Li et al., 2020). National-based research regarding the outcomes of menstruation experiences and education is limited, but recent studies conducted in Aotearoa, NZ and Australia have shed some light on the negative impacts of inadequate MHE. These studies have revealed a correlation between menstrual cycle symptoms and reduced learning opportunities. For instance, students may miss classes or even entire days of school due to menstrual symptoms (Armour et al., 2020; Bush et al., 2017; Li et al., 2020). According to Roux's 2023 study in Australia, current education regarding menstrual health is outdated and lacks a comprehensive understanding of the menstrual cycle as a whole, instead it focuses primarily on the bleeding phase. However, it is essential to recognise the menstrual cycle as an indicator of overall health, as it can be influenced by various lifestyle factors and disorders that may contribute to irregularities or even the absence of ovulation. A further Australian study by Li et al. (2020) identified unmet needs from students, reporting that they felt judged by teachers and other staff and were given restricted access to the bathroom during class times, rather than understanding their students' needs. There is clear evidence that menstrual symptoms can have a significant impact on learning and engagement, yet teachers' understanding of menstrual health appears to be limited (Roux et al., 2023; Bush et al., 2017). Studies have mentioned the stigma and shame associated with menstruation and that it is

constructed as a ‘girls’ issue (Ferfolja et al., 2024; Li et al., 2020). Dividing students by gender identity for menstrual education only increases the stigma and shame menstruating adolescents face. When students are divided by gender for menstrual education, it can have negative consequences. This can include increasing the stigma and shame that menstruating adolescents already face, as boys may get the sense that menstruation should be hidden and that it is only a ‘girls’ issue. It can create an environment where menstruation is seen as a taboo subject rather than a natural process that affects many people. This can make it more difficult for students to seek support and information about menstrual health. Therefore, it is important to provide comprehensive menstrual education that is inclusive and destigmatises menstruation for all students. It is critical for both teachers and students to understand the differing impacts of menstruation and to have the knowledge to support learning and well-being during menstruation.

2.2 Menstrual Health Education in Aotearoa, New Zealand

In Aotearoa, NZ, Health Education is compulsory in years 1-10 and can be taken as an option in years 11-13 with the National Certificate of Educational Achievement (NCEA). This means health education (and learning about the body) should start at five years old. Health and Physical Education (HPE) is one of the eight learning areas within the NZC (Ministry of Education, 2007). There are seven key focus areas within the HPE learning area: Mental Health Education, Relationships and Sexuality Education (RSE), Food and Nutrition, Body Care and Physical Safety, Physical Activity, Sports Studies and Outdoor Education (Ministry of Education, 2007). Guidelines to support teaching within the Relationships and Sexuality Education key areas of learning have been updated from their original 2015 document. The 2020 update provides guidance within two separate documents: primary (years 1-8) and secondary (years 9-13).

In relation to secondary school menstruation education, Relationships and sexuality education: A Guide for Teachers, Leaders and Board of Trustees – Years 9-13 identifies the following areas of educational need that all state schools should engage with:

- providing guidance on menstrual topics;
- examining cultural and religious approaches to periods,
- interrogating the design and sustainability of menstruation products,
- knowing about pubertal changes (inclusive of hormonal changes, menstruation and body development) and how they relate to social norms, and being informed of contraceptive choices and how they relate to well-being,
- understanding different approaches to conception and contraception,
- understanding of physical change through the lifespan, inclusive of fertility, menstruation and menopause,

(Ministry of Education, 2020, p. 38).

Although the curriculum provides a good scope for teaching reproductive and sexual education, there is increasing evidence that there are tensions and challenges in implementing MHE (Fitzpatrick, McGlashan, Tirumalai, Fenaughty, & Veukiso-Ulugia, 2022). The HPE curriculum is descriptive in design, allowing for a flexible approach to teaching and one that meets the needs of individual students. As a policy statement, the NZC "sets the direction" (Ministry of Education, 2007, para. 2) for teaching and learning in NZ schools, leaving schools to decide how to enact the curriculum. However, the NZC does not prescribe content knowledge to be taught, but instead describes the achievement objectives for each learning area. Tensions in implementing MHE can arise when content is not prescribed, as in the case of the NZC. A guided syllabus can mean that learning opportunities are not taken up as they would in a prescribed syllabus.

There is evidence of barriers affecting teachers' practice of RSE. In the study by Dixon et al. (2022), teachers reported some of these barriers to be: time (80%), access to externally provided professional learning development (62%), whole school approach as related to RSE (59%), and access to school professional learning development (56%). Enablers were highlighted in the study, identifying greater opportunities to teach their students, such as access to teaching and learning resources (49%) and external providers' support in planning their RSE delivery (42%). There has been a considerable growth of calls from students to mandate specific RSE content. In the study, teachers were asked if they would be comfortable teaching mandated topics; the response was positive, with 40% of respondents stating they would be happy to teach mandated topics as long as the learning design meets students' needs.

The Dixon et al. (2022) report highlights that the quality of RSE in schools is heavily dependent on the individual teacher instructing it, which is a major cause for concern. Many teachers appear hesitant to engage, resulting in a lacklustre experience for some students and exposing others to potential risks. It is critical that teachers who instruct RSE possess a high level of knowledge, confidence, and training. Some experts of RSE suggest that specialised health teachers should be responsible for ensuring that students receive a consistent and reliable education on the subject (Dixon et al., 2022). Supporting research shows that when RSE programs are linked to health services and are taught by informed, well-supported teachers and embedded into long-term curriculum programs, the outcomes for teachers and students are likely to be greater (Fitzpatrick et al., 2022). For students in the secondary level, years 11-13, there is an option to pursue health education at the NCEA level. However, foregoing this option may result in missed opportunities to learn about advanced topics such as menstrual health and other RSE subjects. This lack of knowledge or support can have significant implications for menstruating adolescents, depriving them of their right to fully comprehend their changing bodies throughout all aspects of their menstrual health. The Dixon et al. (2022) report also highlights teachers' concerns about teaching RSE at the senior level. According to the report, teachers expressed the importance of senior-level

teaching for RSE, as students are more mature and ready to receive the messages. The report notes that beyond year level 10, RSE teaching was viewed as "sad" and that students are likely to be in the "thick of it" and in need of education. Teachers highlighted their desire to incorporate greater RSE beyond level 10 and brought attention to the limitations of one-off workshops, such as reports of students disengaging during compulsory days. A further statement was made that there was nothing for students outside of external programs and a want for compulsory RSE teaching and learning for students was expressed. Collaboratively, teachers have recognised that RSE and health education are undervalued compared to other subjects. While teaching menstrual health may be complex, there are ways to improve learning outcomes for both students and teachers, such as implementing programs or monthly education sessions rather than relying on one-off workshops.

In addition, student perspectives on school MHE were evaluated in a study by Hylton and Bourke (2022), who took a qualitative approach involving ten female students from a New Zealand co-educational secondary school. It explored young people's perspectives on the quality and value of school-based menstrual education. The inductive thematic analysis identified students requesting more substantial menstrual education and expressing that they felt more comfortable and better supported when talking with those who understood menstruation. Key messages from the findings were: we need education, understanding, and ease of access, and let us normalise menstruation. A theme that came from the research supported the need for menstrual education, with one student commenting that they thought the period talk was very "taboo" and that it would be helpful if we had prior knowledge of menstruation issues to assist in wanting to have conversations about it. The study showed that teachers often normalised menstruation through the HPE curriculum. Suggestions from the study were for teachers to improve resource access and education to support student well-being and development. The study recommended different ways to incorporate MHE, such as teaching menstruation across the secondary year levels, utilising social media menstruation platforms in the classroom, and displaying MHE posters to prompt conversations on menstruation.

2.2.2 Special Character Schools

As this case study was conducted at a special character school which holds the Catholic faith of primary importance, it is essential to understand some key menstrual and reproductive health values of learning under the catholic curriculum. The special character influences the application of the NZC within the school. Schools may have the flexibility to teach these topics in a manner that aligns with their values and beliefs, provided they cover the essential learning areas outlined. While special character schools may emphasise their values and beliefs, they are still expected to provide comprehensive and balanced education, including reproductive and sexuality education,

in a way that respects the cultural and religious diversity of their students and their families (Dixon et al., 2022; Ministry of Education, 2020).

He Mea Hanga Mīharo ki tō te Atua Āhua – Wonderfully Made in God’s Image (2021) is a revised framing document for human and sexuality education in Aotearoa, NZ Catholic schools with key areas that are taught through catholic values that should be discussed (National Centre for Religious Studies, 2021). The revised document provides a written report on contraception use from the Bishops' conference, mentioning the use of the oral contraceptive pill (OCP) only in the context of avoiding pregnancy (New Zealand Catholic Bishops Conference, 2001). However, not all young women who have been prescribed the pill may be taking this for safe sex to avoid pregnancy, with strong evidence that general practitioners are prescribing the pill for a range of gynaecological problems related to menstrual health (American College of Obstetricians and Gynecologists, 2018; Harel, 2012; Itani et al., 2022). Young women can have debilitating pelvic pain, intense mood swings, severe acne, and a range of psychosocial implications throughout adolescence that influence the use of OCPs (ACOG, 2018). Results from an Australian survey of 4202 adolescent and young women (13-25 years of age) outlined the prevalence and drivers of contraception use. It highlighted 25.8% of the school participants (n=2421) reporting use of the contraceptive pill, with reducing menstrual pain being the common driver. Followed by 42.8% of school students reporting use for reducing heavy menstrual bleeding (Armour et al., 2020). Results from the present study identified that GPs were the predominant source of OCP advice (59,6%), with 1.7% of HPE teachers being used to seek advice, despite 80% of participants being taught menstrual cycle education through HPE. Such evidence suggests young women are not well supported with such menstrual health disturbances, and when visiting a GP, the GP lacks empathy and fail to educate the patient (Brown, Knight, & Forrest, 2021; Li et al., 2020).

Although there have been few studies that address some implications of educating RSE in Catholic schooling, studies that have reported on RSE education in catholic schools suggest a need to engage with teachers and students to voice their concerns. For example, the NZ survey from Dixon et al. (2022) highlighted some complexities of RSE within a Catholic school. Teachers expressed that it was a tricky balance. At times, conflict with parents' values came into play when teaching RSE and balancing meeting student needs while maintaining the expectations of catholic education.

Furthermore, a study in Queensland, Australia, by Barbagallo and Boon (2012) examined 110 students' perceptions and opinions about RSE content in State, Catholic and Independent schools. Catholic school students reported having the lowest percentage among the three schools in making informed choices, age-appropriate information, and appropriate issues within RSE. Additionally, it was reported that opportunities for discussion were much lower in catholic schooling compared to state or independent (Barbagallo & Boon, 2012). Hence, these studies may highlight the tensions between the catholic school RSE curriculum and what is needed for adolescent well-

being in terms of MHE. After reviewing the research presented, it appears that educators and students in Catholic school communities often experience a decrease in RSE, which includes menstrual health consequences. The research suggests that this common occurrence of reduced RSE could be addressed by incorporating menstrual health knowledge into the educational curriculum for both teachers and students in Catholic school settings. This aligns with my research goals of identifying the necessary steps to support and educate young adults and educators in developing and implementing successful MHE programs.

Although respect is given to all religions and cultures, it is essential to hear opinions and perceptions from the ones being educated and the teachers educating RSE through HPE, as it may have a direct effect on the students' adherence to RSE education and their overall well-being, as NZ and Australian studies have suggested (Barbagallo & Boon, 2012; Dixon et al., 2022). It is important to truly understand what is being taught and how in-depth MHE is being presented by listening to the voices of those being educated. This will allow us to comprehend their needs and ensure their future well-being fully.

2.2.3 External Providers of Menstrual Education

As previously stated, there are several external providers that can possibly support RSE in schools. However, this may not be specific to menstrual education. In Aotearoa, NZ, a limited number of providers focus specifically on MHE. In Aotearoa, NZ, schools actively incorporate sexual well-being, previously known as Family Planning (now called Sexual Well-being Aotearoa), into their educational programs (Sexual Well-being, 2024). They utilise a comprehensive guide called "Navigating the Journey," which is designed for students from years one through eight. Specifically, the guide for years 7-8 contains a dedicated section focused on menstrual health topics. This section delves into important areas such as understanding our reproductive systems and effectively managing pubertal changes. These topics are carefully included to ensure that students receive thorough and age-appropriate menstrual health education.

A programme called the 'ME' programme, developed by Endometriosis New Zealand goes beyond the topics of 'Navigating the Journey' (Sexual Well-being Aotearoa, 2024). Endometriosis is estimated to affect one in ten women of reproductive age in NZ (American College of Obstetricians and Gynaecologists, 2018). Endometriosis is a chronic condition that occurs when tissue that is similar to the lining of the uterus starts to grow in other areas of the body. These growths can be found in and around the pelvis, near the intestines and the bladder, and can enter the lungs (ACOG, 2018). Unlike the tissue that makes up the uterine lining, which thickens and then sheds through a period, this evading tissue cannot exit the body. It can cause inflammation, adhesions, and scar tissue buildup (ACOG, 2018). Endometriosis NZ created a way

to speak about menstrual health and endometriosis interactively by educating young women on irregular menstruation symptoms and detailed endometriosis symptoms (Endometriosis NZ, 2021). The 'ME' programme enables signs and symptoms to be picked up, better managed and intervene earlier to reduce further menstrual health issues (Endometriosis NZ, 2021). They found a high percentage of menstruating adolescents experiencing irregularities and provided them with resources and support to manage this (Endometriosis NZ, 2021). Reports from interviews found that young women who had experienced the programme expressed that they are more aware, better educated, know what is expected and what is not, and most importantly, learnt not to be afraid to speak about the topic (Endometriosis NZ, 2021). Overall, the 'ME' program is a valuable resource for adolescents who are experiencing endocrine health issues, particularly endometriosis. It empowers them to access reliable resources and support and learn essential skills to manage their condition more effectively.

Further significant outcomes were presented in an Australian study; the study completed a 16-week Health and Physical education curriculum called "My Vital Cycles" in a single-sex metropolitan school (Roux et al., 2023). Over the 16 weeks, students and HPE teachers were taught the following: genealogy, cultural beliefs, typical ovulatory menstrual (OM) cycle overviews, charting skills, common dysfunctions, critique of misinformation, menstrual stigma, remedies for OM cycle dysfunctions, and communication skills. Parents were invited to attend lesson two (rites of passage and cultural beliefs), and students were encouraged to maintain an engagement on the topics with their parents at home. Overall, the study provided suggestive solid evidence of the program improving adolescent menstrual health literacy. These studies highlighted that ongoing MHE interventions can improve one's knowledge of female anatomy and menstrual health knowledge and bring comfort to those involved by utilising interactive wrap-around support programmes for adolescents in school (Bush, 2017; Donna Ciccio, Aunty Kerrie Doyle, Cecilia H. M. Ng, & Mike Armour, 2023; Roux et al., 2023).

While external providers may be able to provide some MHE support to schools, research has also demonstrated that HPE can face challenges and concerns when working with external agencies. As Petrie et al. (2014) suggest, there are potential implications when schools rely on outside educators. For instance, when external educators are brought in to teach students, there may be a lack of connection and rapport between the outside educator and the student, which could impact the quality of pedagogy. On the other hand, teachers have a better understanding of their students' needs and abilities, which can help minimise disengagement. When outside agencies come to work with a school, they may not be aware of the specific curriculum and values that the school follows. This lack of familiarity may cause issues with their teachings as they may inadvertently contradict or undermine the school's core beliefs or pedagogical approach. Additionally, if the outside agency's teachings are not aligned with the school's curriculum, this could create confusion and inconsistency for students, making it harder for them to learn and retain

information. However, by establishing a strong partnership between the school and the outside agencies, these challenges may be able to be addressed.

2.3 Te Ao Māori and Menstrual Education

As it is important to meet the needs and aspirations of religion, it is also important to respect the approach that privileges the perspectives and protocols of te ao Māori within Aotearoa. It is essential to recognise and reaffirm the mana of wāhine tūpuna to young wāhine today, to bring emphasis to what is known about menstruation, menstrual practices and reproduction before colonisation and to acknowledge and practice tikanga Māori that relate to reproductive processes and sexuality (August, 2004; Le Grice, 2014; Pihama, 2020). The updated RSE curriculum includes references to the model of hauora and other Māori well-being concepts that may be useful for inclusive teaching purposes (figure 1.) In the essence of menstrual health, Mātauranga Māori ways of learning highlighted in Figure One underpins cultural practices and principles that aid in understanding perspectives that are not in isolation of western views that teachers are able to access.

Figure 1: Sexual Health Psychologies and Mātauranga Māori, years 9-13.

SEXUAL HEALTH PSYCHOLOGIES AND MĀTAURANGA MĀORI	
MĀORI SEXUAL HEALTH PSYCHOLOGY THEME	MĀTAURANGA MĀORI
Relationships	<ul style="list-style-type: none"> • Relationships are understood as multidimensional and considered in relation to spiritual, ecological, and human domains (eg, atua, tangata, whenua). • Relationships involve an acknowledgment of one another's sacredness (eg, notion of tapu). • Sexual relationships are situated within this broader understanding of relationships. • Sex, gender, and sexuality are flexible, fluid, inclusive, and facilitate belonging. • Sex, gender, and sexuality are non-categorical and disrupt the privilege of heterosexuality.
Reproductive responsibility	<ul style="list-style-type: none"> • Sex is a taonga, linked to the cultural significance of reproduction (eg, whenua ki te whenua). • Sex is considered in context with life and whānau aspirations and aspirations for future children. • Children can be an impetus to responsibility.
Open conversations about sexuality	<ul style="list-style-type: none"> • Māori art forms and performance are rich in sexualised depictions and metaphors. • Sex is life-affirming and positive, often discussed with humour. • Talking about sex is not tapu, both women and men can talk about sex without judgement. • Cultures of secrecy and silence around sexuality are antagonistic to learning.
Contraceptive education	<ul style="list-style-type: none"> • Using contraception reinforces care, respect, and protection of a partner. • Using contraception is characteristic of a responsible partner. • Considering sex as a taonga engages positive sexual agency ... • Considering sex as a taonga disrupts the notion of young people's sexuality as inherently 'risky'.

(Ministry of Education, 2020)

2.3.1 Confidence to integrate Mātauranga Māori into HPE

The 2020 updated RSE curriculum included mātauranga Māori in one of its seven changes. Teachers are expected to feel confident and supported to embed mātauranga Māori when using the RSE guidelines. However, Dixon et al. (2022) highlighted two areas in which teachers were notably less confident, with 71% of participating teachers stating they were not confident integrating mātauranga Māori into RSE, with only 2% stating they were very confident. This was alongside 71% stating 'not confident' to integrate cultural knowledge perspectives into RSE with only 4% reporting 'very confident'. These lower levels of confidence stated by teachers suggest a need for resourcing and planned learning development. Teachers expressed a need for embedding indigenous knowledge in RSE, to have explicit resourcing on "how to" for mātauranga

Māori and various Pacific concepts, understanding how to apply those concepts inclusive of tikanga into units, and to have a deep cultural understanding that enhances the learning of their students rather than just “words spoken” (Dixon et al. 2022). Teachers need to have the tools and resources to enhance the learning experiences of their students by incorporating indigenous knowledge in a meaningful and culturally appropriate way. This entails creating a learning environment that is respectful, inclusive and acknowledges the diverse cultural backgrounds of students.

The Ministry of Education (2020) has reported that there are significant disparities in the delivery of RSE for Māori and Pacific students, which can have negative impacts on their ability to access education and learn about sexual and reproductive health. This lack of knowledge can lead to poorer health outcomes for rangatahi Māori, particularly in relation to menstrual and gynaecological health (Ministry of Education, 2020; Zonjić et al., 2021). When there is a lack of knowledge provided, health outcomes become lower due to not understanding or identifying symptoms of concern. This is further supported by a review conducted by Ciccia (2023) on indigenous people's understanding of menstrual and gynaecological health, which highlighted that Māori and Pasifika communities face significant health disparities due to a lack of knowledge and a lack of education being provided in a meaningful way about menstruation and what is considered ‘normal’. Including mātauranga Māori in relation to menstrual health for all menstruators within RSE could shed a positive light on the topic and emphasise the importance of MHE. By normalizing the conversation surrounding menstruation, individuals would have a safe space to discuss their experiences openly and avoid the secrecy that often leads to a lack of knowledge.

Despite there being some education through HPE on RSE and menstrual health, understanding and developing culturally safe and appropriate education that is inclusive and respects tikanga is crucial for respectful engagement and addressing needs in culturally appropriate ways to reduce health inequities (Dixon et al., 2022). Although acknowledgment is given to the curriculum's inclusion of mātauranga Māori, there is an imbalance of menstrual education practice between Western understandings and mātauranga Māori, something I was conscious of when conducting this study.

2.4 Nutrition, Sport and Menstrual Well-being

During adolescence, it is important to be well-nourished for growth, cognitive function, cardiovascular fitness, and a healthy reproductive system (Barrack et al., 2021; Louge et al., 2020;). Insufficient energy intake in the presence of high energy expenditure can lead to negative energy balances, which may result in delayed puberty, menstrual irregularities, and a risk of

energy depletion. Menstrual disruption can occur from energy imbalance, stress, illness, energy depletion and excessive exercise, causing the hypothalamic-ovarian axis to become suppressed, which can slow or halt the release of reproductive hormones (Marieb & Hoehn, 2016). The result of this can cause menstrual disruptions such as low energy availability, which then can lead to hypothalamic amenorrhea and relative energy deficiency in sports. These are increasingly prevalent and often go undiagnosed (Isgin-Atici et al., 2020; Miller et al., 2012). Furthermore, these conditions can result in a suppressed metabolic rate, bone loss (Osteoporosis), weakened immunity, increased risk of cardiovascular issues, mental health challenges, and a reduced quality of life (Huhmann, 2020; Isgin-Atici et al., 2020; Reed et al., 2011). It is crucial to recognise the dangers of poor nutrition for adolescents who experience menstruation, as they not only adapt to menstrual hormones but are also still growing and developing (Belski, Forsyth, & Mantzioris, 2019). Ensuring a healthy energy balance is essential for supporting key bodily functions like growth, immunity, thermoregulation, reproduction, and cellular maintenance. Adequate nutrition education is particularly important for adolescents to guarantee they obtain sufficient energy for physical activity, menstrual health, and growth.

Dropout rates for girls' participation in sports tend to increase at the age of menstruation. (Sport NZ, 2018). Of young women aged between 10 and 14, 20% reported a barrier to participation being "too tired/lacking energy", with a 34% increase in the same barrier in young women aged 15 to 18. There have been numerous reports and statements about the link between menstrual cycle health issues and reduced engagement with sport (Armour, Parry, et al., 2020; Brown et al., 2021; Gould et al., 2022; Huseth-Zosel & Secor-Turner, 2022; Parker et al., 2010). Common themes stem from being too embarrassed to talk about menstrual-related issues that may affect their participation to not knowing about the potential impacts' menstruation can have on participation (Brown et al., 2021; Gould et al., 2022; Huseth-Zosel & Secor-Turner, 2022).

Adolescents who menstruate also face significant barriers due to the perceived shame and stigma that surrounds the menstrual cycle. The menstrual cycle is still encapsulated with a culture of keeping menstruation a secret. A study by Brown et al. (2020) exposed that women are still going through experiences of shame and embarrassment regarding conversations about menstruating. Participants spoke of male coaches having no understanding of the female body, and if the participants themselves knew more about the impact the cycle can have on performance, that might encourage a more open conversation about the topic. The study revealed what participants deemed valuable, with one aspect being providing information for younger athletes with opportunities to speak or talk to someone regarding the menstrual cycle for sports participation. Further reports from the Li et al. (2020) study identified challenges for girls when expressing their menstrual cycle concerns to male teachers for PE. For example, one student reported not being able to contribute to swimming lessons that are mandatory in the Australian curriculum due to ongoing heavy bleeding and cramps and was provided with a 'D' from her male teacher,

explaining that ‘she chose not to involve herself’. Further, participants in the study expressed reduced participation in sports, social engagement, and other daily activities, resulting in isolation and provoking negative moods (Li et al., 2020).

It is clear that menstrual cycle disturbances can reduce a menstruating adolescent's desire and ability to perform at their best, affecting their mental, social and physical well-being. This becomes problematic for adolescents during this phase of their lives as they acquire skills, attributes and abilities that are paramount for their future (Armour, Ferfolja, et al., 2020; Bush, 2017; Ministry of Education, 2022). Furthermore, studies have found that coaches, trainers, or those who teach sports lack empathy towards period pain or do not know how to navigate the conversation (Armour, Parry, et al., 2020; Brown et al., 2021; Charlton, Forsyth, & Clarke, 2022; Hamer, Desbrow, & Irwin, 2023). Greater education for the PE teacher could help menstruating adolescents stay in sports and feel comfortable talking or addressing menstruation. This can be done by knowing how to navigate these conversations and understanding the physiological impact periods can have on a menstruating adolescent, allowing for the potential to talk openly about menstruation in a sporting context.

The third most chronic illness in young menstruating adolescents is disordered eating behaviours (Sieke, 2019). The potential impact disordered eating can have on the health of the menstrual cycle includes a dense amount of physiological change within the body (Babbott et al., 2023; Borowiec, Banio-Krajnik, Malchrowicz-Moško, & Kantanista, 2023; Cominato et al., 2014; Thein-Nissenbaum, Carr, Hetzel, & Dennison, 2014). Disordered eating can lead to eating disorders, which place the body in a state of high stress and have a significant effect on how the body menstruates (Huhmann, 2020). As previously highlighted, if the body's energy stores fail to meet the body's requirements, the secretion of reproductive hormones occurs, leading to menstrual disturbances such as irregular menstruation or complete loss of their period (amenorrhea) (Charlton et al., 2022; Cominato et al., 2014; Gould et al., 2022; Takeshi et al., 2022). An American study by Barrack et al. (2023) reported that 80% of 464 adolescent females who participated in a cross-sectional study showed clinical signs of low energy availability with no signs of participants intentionally trying to reduce their caloric intake but, instead, were just not meeting recommended energy intake. The study concluded that young people require more comprehensive nutrition education to reduce any risk of menstrual disturbance that directly impacts their health and well-being. (Barrack et al., 2023). Nutrition research in an Aotearoa, NZ context demonstrates that the prevalence of disordered eating, a negative body image and psychosocial distress may carry on and increase further into late adolescence and young adulthood, with a substantial risk of disordered eating behaviours developing into a clinical disorder in later adolescence (Babbott et al., 2023; Barrack et al., 2023).

Enhancing menstrual health understandings for HPE teachers with nutrition knowledge for menstrual health could potentially provide teachers with the confidence and knowledge to teach

the importance of fuelling for menstrual health. This could give menstruating adolescents the tools to recognise when they are in a state of low energy and how they can maintain a healthy balance for the health of their menstrual cycle and well-being. Nutrition education can be a challenging topic to navigate, but addressing issues such as size and shape diversity, disordered eating patterns, body image concerns, and the harmful effects of diet culture and weight stigma can help prevent the risk of eating disorders and improve menstrual cycle health. Incorporating these nutrition topics into education could reduce the risk of under fuelling and potentially enhance the health of menstruating adolescents.

It is important to understand the complexities of food choice or intake and that it is often influenced by factors beyond a young person's control. Beyond individual preferences, social determinants of health, such as biological, economic, physical, social, cultural and psychological factors, all play a role in shaping these choices. Additionally, attitudes, beliefs, and knowledge about food-related issues further contribute to the decision-making process. It is important to recognise the multifaceted nature of these influences to develop a comprehensive understanding of food behaviours among young individuals.

2.4.1 The importance of Nutrition Education for Menstrual Health and Well-being: More than a 'healthy' plate

Good nutrition education should be more comprehensive and holistic than just teaching students what should be on their plates. For example, it should involve teaching students about the importance of balanced meals, the impact of different food groups on their health (without any judgments or food rules), and the role of nutrients and energy from food in the body. It should also address the societal and cultural factors that influence food choices and eating habits, such as the individual's unique needs, lifestyles, and environments. All of these can contribute to improved well-being outcomes.

Nutrition education within the NZC (Ministry of Education, 2007) is taught using the Ministries of Health and Education guidelines. However, it is unknown if these guidelines meet the needs of a growing young female's body, especially those that are highly physically active. Food and Nutrition is a key area of learning in HPE and is also taught within Food Technology. The guidelines suggest the following concepts: Hauora: to examine the influence of Nutrition using the four pillars of health by Mason Durie. Attitudes and Values: In New Zealand schools, teachers should recognise and consider the diverse cultural, social, and economic backgrounds of ākonga. Socio-ecological perspective: ākonga will investigate the effects of culture, technology and society on food choice, preparation and eating patterns and develop strategies for addressing nutrition-related health issues. Lastly, Health Promotion: the school environment, which

promotes healthy eating, promotes safe food handling and uses community support, strengthens adequate food and nutrition education (Ministry of Education, 2023).

There are a number of resources that support the education of understanding good nutrition for sport and activity. For example, Sport NZ has developed resources (Sport NZ, 2024) for organisations like HPE departments in schools to engage with. The New Zealand government's 'Women and Girls in Sport and Active Recreation' strategy has been introduced to support young women in their sporting environments. However, it is unknown if teachers are implementing these types of resources in their HPE planning. The resource helps educators and coaches to:

- understand what defines balanced female health in community sport
- strengthen your knowledge and understanding of female-specific development throughout **puberty** and **adolescence**
- understand the **importance of the menstrual cycle for health** and performance, both mentally and physically
- gain practical tips to support balanced health, reduce the risk of illness and injury, and **raise awareness of female-specific health issues**
- strengthen your **knowledge and understanding of nutrition** and recovery principles that **support energy demands** during participation in sport
- gain awareness on how to best support mental wellbeing in sport
- learn skills to **identify at-risk individuals** and provide practical tips and resources to support those requiring further assistance. (Sport NZ, 2024)

Even though educators may not be experts in nutrition, understanding the importance of promoting nutrition education for menstrual health, such as utilising the above resource, appears to be an important and under-utilised area for teachers to engage with. There is a scarcity of research on the dietary habits and nutrition knowledge of active adolescents. According to the 2008/2009 NZ Nutrition survey conducted by the Ministry of Health (2012), energy intake among adolescents aged 15 years and over has dropped since 1997. Energy is vital for various bodily processes and has a significant impact on how the hormones for menstruation are regulated. When a person who is menstruating is physically active, it is crucial to increase their calorie intake to match their energy output. Inadequate consumption of the necessary additional energy through food could negatively impact their menstrual cycle health and overall well-being (Gould et al., 2022; Huhmann, 2020).

2.5 Summary

In this chapter, I covered MHE's importance for adolescents, current curriculums, barriers for teachers, and risks when food and activity levels disrupt menstrual cycles. In Aotearoa, NZ, there is a lack of research on MHE and how it is perceived by both teachers and students. This research gap underscores the need to explore how menstrual education influences adolescents and what is necessary to promote greater awareness and well-being in a schooling environment that is inclusive of diverse cultures and religious beliefs. Part of this research will attempt to identify HPE teachers' actions to educate adolescents on menstrual health and identify what support and resources are needed to support adolescents and educators better. Moreover, despite the Women and Girls in Sports sector highlighting the connection between nutrition education and positive menstrual health outcomes, the educational resources available for high school settings may not be well recognised. The following chapter will discuss the theoretical frameworks underpinning this research and the methods that took place to complete it.

Chapter 3: Methodology

Within this chapter, I aim to justify the positioning of critical theory while acknowledging the importance of Mana wāhine. I aim to support young wāhine by relaying their voices, needs, and desires regarding menstrual health and overall well-being. To achieve this, I will present my ontological and epistemological stance before delving into my research design and explaining my rationale for qualitative research methods.

This study aims to identify what adolescents need to learn about menstrual health and how teachers can provide effective menstrual health education. In interpreting the results, I utilise critical theory underpinned by critical pedagogy and aspects of Mana wāhine theory to examine the key issues that influence menstrual education. I explore the conditions that bring the issue to light and consider factors that may bring about positive change.

3.1 Theoretical Framework

My theoretical framework sits within critical theory. Critical theory is an approach that focuses on society and culture and attempts to critique, transform and challenge power structures (Denzin & Giardina, 2016). Critical pedagogy is an educational philosophy and teaching approach rooted in the broader critical theory tradition. Critical pedagogy emerged primarily from the works of Brazilian educator Paulo Freire and emphasises developing critical thinking skills, social justice, and transformative education. The ultimate aim of critical pedagogy is to challenge and dismantle oppressive systems and structures within education and society. Freire (as cited in Dale, 2010) suggests certain topics being deemed inappropriate or intentionally excluded from the curriculum may indicate a power imbalance. In the case of students not receiving adequate menstrual education, focusing on understanding power imbalances and oppressive structures in education is therefore highly relevant. Exploring why these power dynamics exist, how they contribute to the marginalising of menstruation education, and how this might perpetuate further social inequalities is fundamental to this study. An exploration of MHE through the lens of critical theory and critical pedagogy will support me to consider both what is missing from current educational practice and what is needed.

Mana Wāhine theory holds great importance in Aotearoa, NZ, and aspects of this have also been utilised for this study. Mana wāhine encourages us to remember our tūpuna wāhine, atua wāhine and affirms Māori women as critical actors for change (Smith, 1992). While this study does not strictly adhere to a kaupapa Māori research design, Mana wāhine still resonates with me as I want to acknowledge and respect Māori ways of knowing the world in relation to waiwhero (period), to advocate for our young rangatahi wāhine and to support menstruating rangatahi to have mana

motuhake over their menstrual health. Mana wāhine speaks of women's unique power, spiritual essence and mana (Pihama, 2001; Smith, 1992). However, it is essential to note that Mana wāhine is not only about gender relations; it is embedded within the whakapapa and whanaungatanga relationships grounded within tikanga (Smith, 2012). Mana wāhine acknowledges lived and embodied experience, mythology and spirituality, allowing the research to draw from various sources (Pihama, 2001). Mana wāhine theory, therefore, is a theoretical framework that provides analysis based on Māori knowledge, particularly the intention to decolonise relating to position and the voice of Māori (Pihama, 2001; Smith, 2012).

As I explored this topic with wāhine Māori, I was mindful of its sacredness and the importance of emphasising the concept of mana wāhine. This approach is particularly relevant when addressing issues that affect wāhine Māori. While I did not initially consider a Mana wāhine framework in the design of this study, I was introduced to its insights by one of my supervisors during the research process. Although I was unable to incorporate this approach into the early stages of my research design, I have since used Mana wāhine principles to guide my analysis of participant data and to address my research question. In addition, Mana wāhine concepts and framing are always led by Māori women, and I made myself accessible and receptive to any assistance I may provide through this study.

3.1.2 Ontological and Epistemological Perspective

My ontological perspective sat within interpretivism. Interpretivism assumes reality to be subjective, multiple, and socially constructed. This means that only experience with a person's reality, which may be different from another shaped by an individual's own historical or social point of view, can allow us to understand someone's reality (Braun & Clarke, 2013; Grant & Giddings, 2002). An interpretive methodology elicits authentic data and enables me to interpret meaning from participants' voices; moreover, qualitative data is the only way to get rich, authentic information to understand the participant's needs (Braun & Clarke, 2013). I was conscious not to ask complex or closed questions as the focus was on encouraging discussion from the participants in order to elicit their voices.

My epistemological perspective was grounded in subjectivity. Subjectivity means knowledge is understood and acquired based on individual experiences, perceptions, and interpretations. In other words, knowledge is seen as being influenced by personal viewpoints, emotions, and the unique context of each person. In considering this, I explored teachers' and students' perspectives of MHE, recognising that diverse viewpoints exist due to the subjective and socially constructed nature of reality. Moreover, subjectivist epistemology is concerned with the idea that reality can

be expressed in a variety of symbols and languages and that it is stretched and shaped to suit the purposes of individuals, such as those who impose meaning on the world and interpret it in a way that makes sense to them (Braun & Clarke 2013). The experiences of menstruating, teaching menstrual health, navigating adolescence, and teachers' thoughts and feelings on the topic were all their own experiences and therefore, a 'one size fits all' approach was not a meaningful outcome for this project.

As discussed in the introduction chapter, I needed to ensure that I was consistently self-aware of the position I upheld throughout the research process. In brief, being reflexive is considered to be disciplined with self-reflection (Wilkinson, 1988). As I only provided one version of data analysis, I recognised that it is my own and comes to the reader through my own lens, shaped and influenced by my unique experiences and biases.

3.2 Ethical Considerations

3.2.1 Te Ara Tika

This study directly engaged with Māori, and therefore, it was important to connect with Senior Māori leaders at the school and kaumatua. Consultation was completed with the school principal, who, through him, was as per the usual process of the school.

Te Ara Tika is a framework that provides guidelines for Māori research ethics. It is embedded with tikanga Māori, mātauranga Māori and understanding from Te Tiriti (Hudson et al., 2010). Although I collected the data and completed the analysis, ensuring that Te Ara Tika's engagement principle was followed and ensuring positive engagement in my research was used by following the framework guidelines (Cited by Hudson et al., 2010). There was direct engagement with wāhine Māori as research participants (see Table 1), and the supervisory team and I were cognisant of implementing appropriate tikanga processes around data collection.

The tikanga processes I used were inclusive of the following:

- Data sovereignty: I am the only person with access to the data participants shared with me, and hard copies will be given back to the participants.
- Relationships: I have a shared connection with the participants, particularly with the students, and my experience was shared with them. Gaining a relationship with participants is paramount.

- Resourcing: Kai was provided to the students in the focus group, and teachers were emailed and offered a coffee shout before the interviews.
- Koha: I wanted to recognise that participants had given me something and how reciprocity cannot be overstated; a gift bag was given to the students, and coffee/restaurant vouchers were given to the teachers.

Alongside these practices of tikanga, returning taonga is important. Knowledge has to go back to its source, and therefore, a hard copy of the research will be given back to all participants. Power-sharing is also essential, and I worked with participants to identify what they wish to share and not share.

The participants provided information about MHE (including resources and support materials) and their experiences and future thoughts. The research was designed to reduce the burden and increase empowerment for those who menstruate, and participants' valuable experiences and perceptions were and will continue to be treated as taonga. This knowledge will also be passed on to improve current resources and support systems, creating value for wāhine Māori and waiwhero. I ensured I was culturally considerate by informing participants that they could decline to answer or stop any interviews if they felt at any time uncomfortable. This research does not only impact those participating; it also has an impact on their whānau, hapū and iwi. Therefore, I understood the need to be culturally considerate in all aspects of the research.

3.2.2 Consent and Protection

In research, only those who are competent to take part in consenting to research should be asked to engage in research (Alderson & Morrow, 2011). Social research ethics needs to involve full information to participants and consent must be met before any other research stage persists (Alderson & Morrow, 2011). Prior to any direct research engagement with the school, I worked with supervisors to design participant information sheets (PIS) (see Appendix B & C), recruitment criteria (see Appendix A), proposed questions for interviews (see Appendix D), proposed questions for focus groups (see Appendix E) and consent forms for teachers (see Appendix F) and students (see Appendix G). Ethical guidelines were considered in the development of all these documents. I ensured my participants were age-appropriate and fit the inclusion criteria (see appendix A) and developed a clear and informed PIS checked by the AUTEK ethics committee. Simple but well-informed information sheets can reduce resistance and fear and can help participants feel more prepared for the research as well as have some feeling of control (Alderson & Morrow, 2011).

Protection was ensured through informed consent and ensuring participants were fully aware of the discussions that may arise in interviews and focus groups. To do this, mana tangata was followed, and participants will consider recognising the place of oral consent in some Māori settings to acknowledge and respect the mana of Māori participants. I did this by asking for verbal consent alongside receiving the written consent forms before any interview. I acknowledge Māori values and concepts (taonga) and appreciate cultural differences when discussing menstrual health. Cultural safety was upheld by following Te Ara Tika's Manaakitanga element to protect Māori participants. To do this, I demonstrated cultural and social responsibility/sensitivity regarding menstrual health topics, mainly during focus groups. I ensured access to appropriate advice by providing a range of local health facilities in the area if they wished to seek support for any menstrual health concerns. Overall, respect for tikanga was utilised throughout all research areas with Te Tiriti guidance, the support of my supervisors, and the school.

As I conducted research with young adolescents (16 years and above), I also needed to show respect for the potential vulnerability of the participants. During the course of this research, we delved into the topic of female reproductive health. It's important to acknowledge that menstrual-related subjects can be a source of discomfort and shame for many young women. As I conducted my research, I grew my knowledge about the cultural significance of menstruation for wāhine Māori and made a conscious effort to only address topics that were within their comfort zone. Therefore, to avoid any psychological distress, I planned and conducted my research to suit the age group and vulnerability of my participants. I used age-appropriate language and created a relaxed environment by placing chairs in a circle and kai in the centre to consume while chatting. Additionally, students were informed they were free to withdraw at any stage, and I informed the participants of where they could go if they needed any counselling or further information on the topic. I did this by handing a support card to each participant, explaining what and who each support provider offered. No personal questions were asked of participants about their direct menstrual cycle unless a discussion came about and they were comfortable speaking about it. All other questions were education-related about teaching and learning, resources, and participation in physical activity.

Ethical approval was sought and gained on July 06, 2023, by the Auckland University of Technology Ethics Committee (23/104). Once ethics approval was approved, contact was made with the school Principal before any intervention and specific tikanga were discussed. Advice was sought from the school's Principal, who has a close relationship with senior Māori leaders and has a standard process with school policy and informed me that my research could be undertaken. Due to my existing relationship with the principal, all information and approval steps were also passed on to the Deputy Principal to avoid any conflict of interest.

3.2.3 Confidentiality

In small case studies, it can become quite easy for people or cases to be identified (Alderson & Morrow, 2011). Even when participants are anonymous, it is vital to keep reasonable measures to ensure confidentiality and that personal data is handled with appropriate safeguards. Any information gathered via recordings was stored confidentially, and only I had access to the data and recordings from the research. Privacy and confidentiality were respected as confidentiality was maintained, and only the Principal, Deputy Principal and I knew the identity of the teacher participants. Only I and the Deputy Principal knew the identity of the student participants. I ensured anonymity by not using real names or other directly identifying information in the final report.

Conversations in interviews and focus groups were recorded. Participants who spoke were assigned a participant number for teachers, and participant letters for students' case names and pseudonyms were used when presenting data and findings to allow confidentiality. I recorded all interviews and focus group discussions electronically on my laptop using otter.ai software. The laptop and software were password encrypted, and only I could access the data.

3.3 Participants

The inclusion criteria (see Appendix A) for the study for the young female adolescents were (a) being 16 years or older, (b) consent from parents/caregivers, (c) having their first menstrual cycle, (d) having an interest (e) and being active in exercise or sports. Participants under the age of 16 were excluded. The inclusion criteria (see Appendix A) for the teacher participants were a requirement to be teaching or have taught menstrual health, be a teacher of health and PE and for at least one teacher participant to coach extra-curricular sports. As some of the proposed student and teacher questionnaires focused on nutrition and connections to the menstrual cycle, an HPE teacher who coached an extracurricular sport was thought to be valuable for grasping an understanding of the way such topics were being presented, spoken or known of in a sporting context.

My final participants consisted of three HPE teachers and five students from a Catholic secondary school in the North Island of Aotearoa, NZ. The participants included five female students, three of whom were Māori, all menstruating and active in sport and physical activity (see Table 2). Teacher participants (see Table 3). included two females and one male. Two teachers taught Health and PE, one of whom taught extracurricular sport (waka ama), and the third was a health education teacher who had previously taught HPE (nutrition).

Table 1..

Classification of Student Participants.

Focus Group	Ethnicity	Age	Year Level	Religion	No. People are living at home.	Sport
Student A	NZ European	17	13	None	3	Basketball & Gym
Student B	NZ European	18	13	None	5	Taekwondo, Running, Basketball.
Student C	NZ European/Māori	17	12	None	4	Netball, Swimming, surf lifesaving.
Student D	NZ European/Māori	18	13	None	5	Football, Basketball, Highland dancing
Student E	NZ European/Māori	18	13	None	5	Football, Basketball, Highland dancing

Table 2.

Classification of Teacher Participants

Teacher Interview	Gender	Coached Extracurricular sport	HPE teacher	RSE trained
Teacher 1	Female	Yes – waka ama	Yes	Yes
Teacher 2	Male	No	Yes	No
Teacher 3	Female	Past - netball	Yes- past	Yes

3.3.1 Teacher Participant Recruitment

I met with the Deputy Principal to discuss the research study and selection criteria. The Teacher's participant information sheet (PIS) (see appendix B) was given to the Deputy Principal to distribute. The Deputy Principal selected the teachers who best fit the research criteria, and an email was sent to me introducing the three teachers who accepted the invitation to participate. I

sent a consent form to all three teachers to sign and return before the interviews were conducted. All interviews were organised with teachers via email. Participants were able to have interviews where they felt comfortable, via Zoom, in their classroom or in a private meeting room. All teachers opted to participate face-to-face in a quiet meeting room at the school. I reminded the participants of the nature of the study that it was confidential, and they could refuse to speak about anything that made them uncomfortable. I explained that the interview would be recorded through Otter ai software and password-encrypted on my laptop to ensure confidentiality and safety. Teachers had to provide consent forms before any interview started. After each interview, the teachers were asked to invite students from their class to the study and student PIS was provided to explain the nature of the study.

3.3.2 Student Participant Recruitment

A private box was placed in the school office, and the students who wished to participate were to return their PIS (see Appendix C) with their name and email address on the PIS and place it in the box in the school office. I collected the forms of those interested from the private box in the school office three weeks after the teachers received the students' forms. Students who met the inclusion criteria and were 16 and above were allowed to take part after they had provided their consent forms stating that they felt well-informed about the research. I emailed the students, thanking them for their interest and asking them what time would best suit their schedule to meet for a focus group. A lunchtime was best suited for all participants. Before the focus group started, I reminded the students of the nature of the conversation. Due to the nature of the topic, the students were informed that if they had any concerns or questions about topics related to reproductive or sexual health, to see me after the focus group. I explained that the interview would be recorded through Otter AI software and password-encrypted on my laptop to ensure confidentiality and safety. The students received a consent form signed before the focus group discussion. I discussed how their information may be used in the project, opening up a window for discussion or questions they may have had. The focus group questions were set out carefully, and I ensured that questions and conversations were not disrespectful or interpreted in any harmful way. Alderson and Morrow (2011) highlight that researchers can view their research as having a benign risk of harm to their participants. However, there is a risk of intruding or causing distress and embarrassment to participants during the nature of the research.

3.4 Methods

My research methods rely on a qualitative approach, which involves conducting interviews and focus groups to delve into participants' opinions and viewpoints (Braun & Clarke, 2013). By exploring group judgments, emotions, and feelings, we can gain a deeper understanding of the information at hand. Through qualitative research, I aimed to provide an insightful and comprehensive analysis of menstrual education experiences in a school setting for both teachers and students.

3.4.1 Case study

The study employed a single case study. A case study approach was used as it built on high motivation to discover meaning and understanding of experience in context (Stake, 1995). A case is selected for curiosity or to facilitate understanding of another matter and is essential in helping solve a problem. To conduct a comprehensive, holistic, and in-depth investigation of the complex issue, case study research has been consistently described as a flexible form of qualitative inquiry. Case study research was appropriate for this research because I wanted to capture the issue of MHE in a single school and possibly create meaningful change. By limiting the study to a single school, I was able to perform a more in-depth examination and comprehensively investigate the specific practices, policies, and cultural dynamics surrounding menstrual education within the unique context of the chosen school. As there is little research on MHE in special character schools in NZ, this research may help to fill a research gap by identifying if there are any constraints occurring or if resources used for MHE are in need of support. The study's duration, from recruitment to data collection, was eight weeks. It was conducted once only in a co-educational special character school on the North Island of New Zealand.

3.4.2 Research Aim and Questions

Through this case study, I attempted to capture and interpret my participant's responses to questions related to my research aim and questions.

Research Aim

To identify what adolescents need to learn about menstrual health and how teachers can provide effective menstrual health education

Subsequent questions:

- What do HPE teachers and menstruating adolescents understand about menstrual health?

- What actions do high school teachers take to educate adolescents on menstrual health?
- What is needed to support menstrual education in high schools?

3.5 Data Generation

By using the phrase ‘data generation’ instead of ‘data collection’, I acknowledge that knowledge is a collaborative effort between the researcher and participants and is continuously constructed through a reciprocal process. This approach aligns with my interpretivist beliefs and emphasises the notion that data is not a stand-alone entity to be collected but rather a product of meaningful interactions within a given context.

3.5.1 Teacher Interviews

Semi-structured interview questions were selected for their ability to create discussion and allow unexpected data to appear that may not have been in a much more structured process, enabling participants to expand on their own experiences (Jones & Gratton, 2015). This creates more robust support for the research findings. The interviews were informal enabling participants to elaborate on their experiences and feelings and assist in identifying where more support resources are needed.

I held individual interviews with the teacher participants. Two of the three interviews were conducted during school hours, lasting 40-45 minutes in a private room on school premises. The third interview was held the following week, after school hours, and lasted 45 minutes. A semi-structured interview format was used in all three teacher interviews, as I wanted to collect open-ended data. Semi-structured interviews allowed me to explore the respondent’s thoughts, feelings and understanding of the topic in more detail (Bryman, 2008). Additionally, creating a more personal format to allow respondents to answer in their own terms provides high validity (Crotty, 1998).

3.5.2 Student Focus Group

A focus group was used as it allowed for a semi-structured interview for participants to share their experiences, allowing me to understand why the students may feel the way they do about the topic. The student’s viewpoints were an essential aspect of the study, allowing them to take control and encouraging them to bring issues that concern them to the surface (Bryman, 2008). Focus group settings may allow students to feel more comfortable in a group setting due to their

facilitation of social interactions, encouragement of peer dynamics, and the ability to collect rich data by tapping into shared experiences.

One month after the teacher interviews, I conducted a 45-minute focus group with five students in a private library room on school premises during the student's lunch hour. Questions were based on developing an understanding of students' current menstrual health literacy, what gaps there may have been in education and what they understood about consuming food to support their cycle and sporting performance and overall well-being. I wanted to capture what support they currently had whether that be in schooling or outside of an education environment such as extracurricular sporting activities. A wide conversation took place in light of the types of questions asked as students' experiences and voices bounced off one another; this benefited the study and captured reports that may not have come about in one-on-one interviews.

The focus group allows for an unstructured interview for the participants to share their experiences, allowing me to understand why the students may feel the way they do about the topic (Bryman, 2008). Since the students' viewpoints are an essential part of the study, allowing them control can bring issues that concern them to the surface. The student participant voices were front and centre; I made sure to check in with the students regularly to ensure their comfort and give them the option to decline any questions they didn't want to answer. When it comes to thinking about this through a Mana Wāhine theoretical lens, providing a platform for young women to share their concerns underscores the importance of empowering them. By vocalising their thoughts and ideas these young women hold power over their own stories and ultimately decide what they wish to disclose to me.

The interview questions for the teachers and students are presented in Appendix D & E. AUTECH, and my supervisor analysed the final questions to determine suitability. The questions were used as a guide, providing structure to the natural flow of conversation and allowing room for some follow-up probing questions.

3.5.3 Transcribing of data

I used the software Otter.ai. to record and transcribe the interviews and focus groups. Bryman (2008) explains that recording and transcribing data allows for a thorough examination and understanding of what respondents say. It takes away the risk of repeated examinations of respondents' answers and assists in counter accusations of which the research's biases influence an analysis. Additionally, as I am there to listen, probe, follow up, and draw attention to any inconsistencies, it is ideal that I am not distracted by writing notes on what the respondent says.

3.5.4 Data Analysis

Thematic analysis was used as it allows the identification of significant themes. It allows me to make sense of the data and interpret findings with higher reliability and validity (Braun & Clarke, 2013). Interviews and the focus group were managed in a qualitative data analysis software program (Nvivo, Version 14). First, I became familiar with that data, developed codes and themes, and then began to tie the themes and sub-themes into a broader picture within the literature. Thematic analysis was used to bring about findings from the data. I adopted Braun & Clarke's (2022) six phases of thematic analysis framework:

- Familiarising myself with the data
 - *By reading the data from the interviews and focus groups, I made notes and mind-mapped the data. I could see there were powerful narratives from the student participants, and highlighted these to come back to.*
- Generating codes and sub-codes from the raw data
 - *I looked at what the students and the teachers were addressing commonly and what was important to them. With that, I developed and modified codes as I worked through the process with my research question in mind.*
- Constructed themes from the codes
 - *I found codes that shaped my research aims and captured significant and interesting findings that expressed the participant's voice. I examined the codes, and most of them had clearly fitted into a theme.*
- Reviewed potential themes while cognisant of current literature
 - *Preliminary themes were reviewed and modified. I made sure the data supported themes, if there were overlapping themes and if there were subthemes within the themes.*
- Defined and named the themes
 - *In this analysis, I found overarching themes. I addressed what each theme was addressing by going over what the participants were saying.*
- Discussions about the findings formed the basis of recommendations that lead back to the research question.
 - *Writing up the research. I ensured I went back through the literature and re-read what participants addressed in each theme, and with that, I ensured they led back to the research question and aims. I wanted to bring the voice of the student participants into the discussion chapters and used Mana Wāhine concepts of restoring the mana by putting the students' narratives at the forefront of each discussion chapter.*

My approach to data analysis was informed by both critical theory and Mana wāhine. With critical theory, I sought to challenge current MHE and identify key themes to shed light on existing practices. Meanwhile, Mana wāhine guided me to prioritise the voices of the participants and be cognisant of any findings that were special to and for Māori. Throughout the interview process, by allowing students and teachers to express their own experiences, I was able to highlight their voices through sub-themes and whakamana their perspectives. By utilising theoretical frameworks, I was able to carefully examine the data and gain valuable insights. This approach allowed me to recognise recurring patterns, themes, and sub-themes that were informed by relevant theory. Through this framework, I could analyse the data and identify common themes among the participants, which helped me to scrutinise and challenge current MHE practices and knowledge. I read and re-read over transcripts, and I paid attention to phrases from the participants. I began to notice overarching themes emerging. I then organised these findings into codes within NVivo. As I continued with data analysis, I paid attention to themes that were recurring, including similarities and contradictions found in the narratives of all participants and in the literature. Throughout this process, I incorporated narratives, references, and quotes from students and teachers and started to draft themes as a result of this. Eventually, these thematic themes became the focus of my discussion chapters. Two main themes formed the discussion chapter which are MHE and Social and Cultural Context for Changing Bodies.

3.6 Summary

In this chapter, I have provided a comprehensive outline of my chosen qualitative methods and critical theoretical frameworks that I have employed for conducting and analysing my research. My theoretical foundations are built on the principles of critical pedagogy, inclusive of the resonance of mana wāhine, concepts that recognise the importance of teacher and student relationships in education, and support the mana of student voice. Additionally, ethical considerations were taken into account, with the significance of incorporating respect for Māori research elements into my study to ensure that it is culturally appropriate and sensitive. In the following chapter, I will shift my focus towards the discourse and illuminate the perspectives of educators and students regarding MHE. Through this approach, I aim to provide a deeper understanding of the challenges and gaps in MHE, particularly in education settings, and highlight the importance of addressing these issues in a culturally appropriate manner.

Chapter 4: Discussion of Findings

4.1 Introduction

This study aimed to identify what adolescents need to learn about menstrual health and how teachers can provide effective menstrual health education. Thematic analysis was employed to derive insights from the collected data. To this end, I applied Braun & Clarke's (2022) six-phase approach to familiarise myself with the data, identify codes and sub-codes from the raw data, construct themes from the codes, review potential and finally, engage in discussions about the findings to generate recommendations that are aligned with the research question.

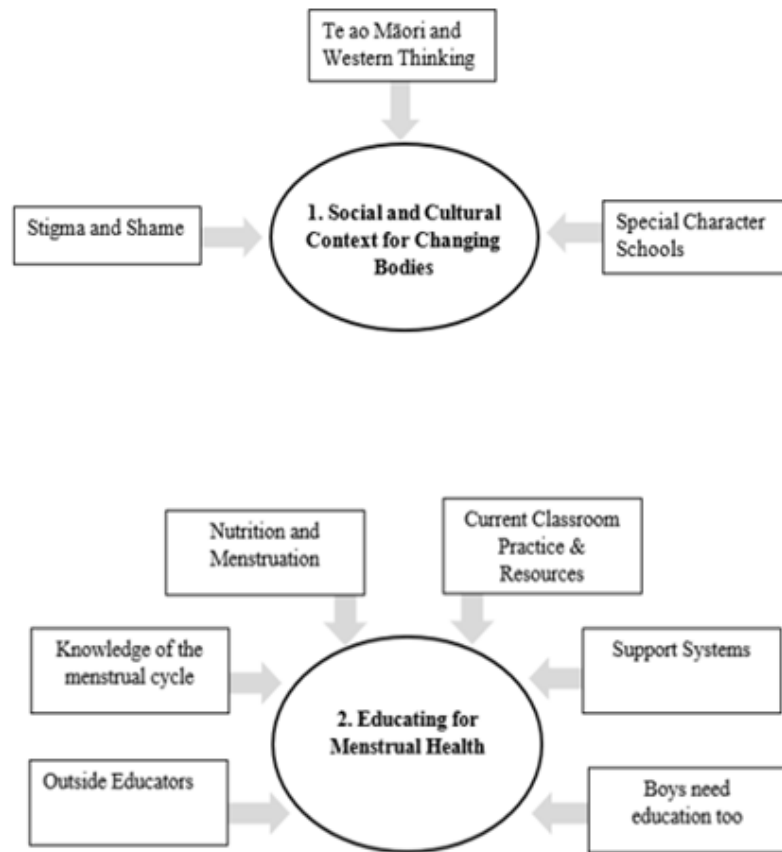
In this chapter, I unpack the overarching themes and subthemes by synthesising the findings with critical discussion. I attempt to identify what current menstrual health and nutrition education practice is being taught to students and consider how teachers and students can navigate menstrual health experiences, both current and future MHE. I illustrate this by integrating my findings within my theme and sub-theme discussion, utilising direct quotes linking the discussion back to my research questions and applying a critical discourse. Each section begins with a student quotation that reflects the essence of the key themes and embraces the Mana wāhine perspective. It is hoped that by leading with wāhine 'voice', I restore power to my student participants and acknowledge the unique strengths and perspectives of wāhine Māori.

The two key themes that emerged from the data for teachers and students were:

1. Social and cultural contexts for changing bodies
2. Educating for menstrual health – “I know it is just like clearing the dead eggs inside of you”.

These themes are outlined in the code book taken from the Nvivo project (see Appendix H). In addition to these two key themes, several subthemes were apparent. These can be seen in Figure 2.

Figure 2: Themes 1 and 2



4.2 Theme 1: Social and cultural contexts for changing bodies

“I tried the menstrual cup, and when I was in the bathroom, my brother banged on the door shouting, and it freaked me out! So, I was too scared to try it again” Student A

The students' discussions on menstruation shed light on the various social and cultural factors that influence their understanding of menstrual health and overall well-being. The findings in this study clearly emphasised notions of the body as being social and culturally constructed. Put simply, perceptions, meanings, and practices surrounding menstruation are not solely determined by biology but are profoundly shaped by societal norms, cultural beliefs, and historical contexts. Although this study will examine the following subthemes separately, I recognise the intricate interplay between these social and cultural influences. Sub-themes emerging from this theme included the perspectives of te ao Māori and Western thinking, how stigma and shame are addressed, and how the values of special character schools may influence students' understanding of their bodies.

4.2.1 Te Ao Māori and Western thinking

Student A: *“An old teacher from our school came in. She did like ‘meditation’. (students laughing). She was just like, honestly, guys, sometimes you should just fill a cup and pour it (menstrual blood) into your plants, and just like meditating on the ground. Like this isn’t normalising it, and she was like, your period goes with the moon. She was very spiritual. She made us all hold crystals (students laughing).”*

Interviewer: *“What did you take away from that?”*

Student A: *“It was a bit of a waste of time. We were taught like her beliefs of like bleeding into the ground “free bleeding”. Like the only thing she told me was that she wanted me to put my period blood into the plants. I just thought that was a bit outrageous.*

Student B: *“Um, nothing, we just like got told what people used to do.”*

The quotes above acknowledge an attempt was made by outside educators to speak about a pre-colonial context that could have aided in reducing the western association of menstruation. The quotes above give reference to what was taught through an outside educator (health professional) and was called a “special day”. Although the intention was to provide a spiritual perspective, the

students did not understand the purpose of the lesson and perceived it as strange or a waste of time.

Descriptions of bleeding onto the ground or giving back your menstrual blood to the land, which, in te ao Māori, bleeding onto the whenua was a gift to Papatūānuku, a practice that acknowledges and connects the people, land and ancestors. This concept was not understood by the students, nor was it described by them through a cultural lens, but something they thought was weird or too spiritual. This could be a lost opportunity for reinforcing cultural engagement regarding MHE, something the outside educator may not know. Although an outside educator has provided their MHE to the school, certain challenges and concerns are faced when working with external agencies. As discussed in chapter two, Petrie et al. (2014) suggest that relying on outside educators can have potential implications for schools as outside educators may not have a strong connection and rapport with the students, which could ultimately influence the quality of pedagogy. In contrast, teachers better understand their students' needs and abilities, which can help minimise disengagement. To support his type of holistic MHE and prepare students to increase engagement, the school could support students' learning by creating a relationship between the teacher and outside educator to relay the MHE to students. Interestingly, a teacher reflected on this report but explained that Māori perspectives of menstruation were a topic discussed...

“A lady came in who used to be a teacher here, and she runs an online course about menstruation, and she talked to our year 9 and 10 girls about it being sacred and the benefits of menstruation and something to be excited about and that kind of information. So, it is not being a scared yuck thing that it is an amazing thing. She brought in different Māori cultural perspectives on menstruation. Yeah, and I think a more holistic approach like that would be beneficial.” Teacher 3

Despite western thinking about menstruation dominating learning in NZ classrooms (Ciccina et al., 2023), I suggest te ao Māori ways of thinking could reduce the impact of the 'taboo' associated with menstruating. Ways of doing this can be done through Korero Pūrākau (Māori storytelling) to share narratives of the meaning behind menstruation through a Māori cultural perspective. Such pūrākau could describe the mana and tapu of blood and how it connects to whakapapa rather than something to shy away from and be embarrassed about. Storytelling by Māori may come across as a more interactive way of learning as opposed to watching clips that may not engage with all students. Understanding tikanga surrounding menstruation places the mana back into understanding menstruation and decolonises the western thinking and learnings embedded into adolescence today. Tikanga should be respected and inclusive of MHE in a culturally appropriate and safe manner. Literature informs us that understanding the sacredness of the menstrual cycle and how it is something to be celebrated, not something to be whakama about, would be beneficial to all menstruators (Ciccina et al., 2023). In contrast, a teacher participant reported on a one-day

workshop where teachers and students took some time to explore a clip of te ao Māori concepts and practice of menstruation...

We looked at cool clips together as a group of year nine and 10s about Māori culture and how that was a big part of the culture years ago. All the women would go off and have fun and celebrate, so it was a time of rest and a time of community. They also talked about some of the products they used to use the moss. So that's just kind of a one-off. So, if a teacher happens to be interested in it, it will be presented, but if not, it sits in the background." Teacher 1.

According to feedback from the case study teachers, efforts are being made to incorporate te ao Māori perspectives on menstruation. However, the data gathered from student participants suggests that they may not have fully grasped the significance of this cultural understanding and historical context. One teacher says it “sits in the background” (connections to tikanga Māori) if a teacher is uninterested in making cultural connections to menstrual health learning. This presents a significant obstacle and emphasises the potential inadequacy of education surrounding menstruation from a Māori perspective. This not only limits opportunities for cultural education but also impacts the understanding of menstruation, since pre-colonial practices viewed it in a positive light without any shame or taboo (Murphy, 2011). Interestingly, three out of five of my participants identified as Māori and the case study school had a Māori population of 34 % at the time this study was conducted. Embedding Mātauranga Māori through MHE is likely to enable stronger connections with Māori adolescents. However, as previously acknowledged in the literature review, many teachers do not feel confident with the integration of Mātauranga Māori into RSE (in which MHE is addressed). My participants lacked understanding regarding the connection between cultural practices and menstrual health, resulting in missed opportunities to reduce stigma. As educators, teachers possess the ability to shape their students' understanding. Encouraging Mātauranga Māori engagement could reduce stigmatisation and promote comprehensive education for adolescents about their bodies, fostering a more effective learning process. However, there is a gap in the research in understanding how much or if any, Mātauranga Māori in reference to the menstrual cycle is conducted through MHE in secondary schooling.

4.2.2 Stigma and Shame

In many societies, there are certain beliefs and customs that perpetuate the idea that menstruation is something to be ashamed of. These sociocultural norms often emphasise the need for women to conceal their menstrual cycles and maintain strict hygiene practices, which are described by my participants:

Student D: "I only use tampons"

Student C: "Same. I do not like using pads. They make me feel yuck."

Student A: "I used to only wear tampons, and then I went off them coz I got scared"

Student A: "I tried the menstrual cup, and when I was in the bathroom, my brother banged on the door shouting, and it freaked me out! So, I was too scared to try it again."

The students' narratives addressed feelings of embarrassment and described the use of period products as making them feel 'yuck' or 'scared' due to the education presented to them, highlighting that menstruation today is still perceived as unclean or embarrassing. This can create a sense of shame and embarrassment around menstruation, as well as a feeling that it needs to be managed and controlled, all of which create barriers to understanding a menstruating body. In the focus group, student participants were asked if they wore period undies or knew of them; they suggested they knew of them but seemed reluctant to wear them. Period undies were created to reduce the burden on the environment and have a lesser impact on Papatūānuku, Mother Earth. Perhaps the use of undies has the same 'yuck' associations mentioned by student C. These feelings of yuck or being scared reflect back on what has been taught to our menstruating adolescents, whether that be from mothers or educators. There is a clear sense that education is heavily weighted by western notions of dirty or unclean and that they must conform to strict hygiene practices.

Menstruating adolescents should be able to talk about menstrual health concerns they have without feeling embarrassed or any feeling of discomfort. According to reports from the student participants, there is a shared belief among students and male teachers that menstruation is a taboo subject and should not be discussed due to its perceived inappropriateness. All students in this study reported how they felt about addressing their HPE teacher regarding participation in PE or sports. Included in this was a discussion on students feeling that teachers may not understand students' 'excused notes' when they had their period. Students talked about the response they might get when having to discuss menstrual pain with their male teacher in PE classes, especially when it came to participation in sports or physical activity:

Student B: "Maybe if we had like a girl teacher, I would"

Student A: "If we had like XX, I would be like, oh miss, I have my period. I don't want to swim today. She would say like okay, that's okay. Sit down".

Student C: "Especially not with our PE teacher. He kind of wouldn't have listened or wouldn't understand. Yeah. He wouldn't understand and probably tell us, like, toughen up or something like that.

The above students' experiences of not feeling comfortable talking about their period pain with their male PE teacher correlate with other studies (Parry et al., 2020; Li et al., 2020). These studies identified that the reason they did not discuss their period concerns was due to a higher percentage having a male coach; this, alongside feelings of the male not understanding their concerns, was paramount (Parry et al., 2020; Li et al., 2020). Female athletes must have a safe and supportive environment to discuss their concerns, including period-related issues. However, studies have shown that a high percentage of coaches or trainers being male is a significant barrier to menstruators opening up about their worries. These studies have found that female students feel their male coaches/teachers cannot understand their concerns, which makes them reluctant to discuss their problems. Again, this reinforces the 'shameness' of menstrual cycles.

The teachers in my study explained their experiences with students not participating in PE activities due to having their period. When I probed teachers about their experiences with students in HPE and students' participation in PE being affected by their periods, there were different reports on this:

Teacher 1: (female) "Oh, yeah. Yeah. A lot of girls will say I can't do PE today. Yeah, because, um, I'm on my cycle, I just say ok. It is their choice. They feel really confident about talking to us about it.

Teacher 3: (male) "Oh, here at xxxx, look realistically. I can only think of a handful of examples. I taught at xxxx high school a few years ago, and there were certain girls. It would just be like every period. Every PE class, "I have got my period". And as a male teacher, it is an absolutely no-go zone. I would just be like, yeah, that's fine. Do what you can if you don't feel up to it. Just don't feel like participating. The ones using it consistently. I would not have called them sporty kids, and it was those ones in particular. I hate to use the word, but they were kind of rebellious teenagers. I just, you know, just looking from any angle to try and get out of PE".

The above findings bring to light the pressing need for creating safe and welcoming environments in schools that allow female or menstruating students to express their concerns and discuss their unique needs with male HPE teachers without any hesitation or discomfort. The removal of hesitation or discomfort should be inclusive for the teachers, too. As teacher one stated, "As a male teacher, it is an absolute no-go zone", addressing the fact that having conversations with

adolescents about their menstruation concerns is inappropriate for a male teacher to address or unpack with them. However, as an HPE teacher, understanding the physiological impact and role that menstruation can have on participating in PE can be a sensible and supportive conversation with students. There seems to be a sense of shame and embarrassment coming from the teacher's perspective, too. As highlighted in the literature, some HPE teachers are unaware of how to navigate the conversation of menstruation and sports participation. However, there can be a way to achieve this safely and comfortably for teachers and students. For example, this can be achieved by providing teachers with proper education and training on how menstruation can affect menstruating adolescents' participation in physical activities and sports. By doing so, we can ensure that menstruating adolescents feel supported, valued, and empowered to participate in HPE classes and that their menstrual health is not a barrier to their academic and personal growth.

Participation in physical activity in PE has been highlighted by the students and teachers in my study. Teacher three speaks of girls continuously not participating in PE due to their periods. There can be numerous reasons why students don't want to participate in PE, and these have been widely documented in the research (for example, see Chapter 2, pg. 19-20). However, the data in this study suggests that the shame associated with menstruating while participating in PE was a significant factor.

In my literature chapter, I identified that participants from other studies expressed that male coaches and trainers needed more physiological understanding of the female body and the impact menstruating can have on performance. It seems male teachers may be embarrassed or feel it is inappropriate to talk to menstruating students about the menstrual disruptions that stop them from participating in their PE class, which can continue the cycle of shame and stigma associations. As HPE teachers take menstruating adolescents for sporting activities, it would make sense that menstrual health and the connection between menstrual disturbances and PE activity are taught to teachers, too. The disruption to sports participation is reiterated in the Li et al. (2020) study, as when menstruating adolescents have menstrual cycle disturbances, their desire and ability to perform or take part in sporting activities are reduced.

There is a clear example of a power imbalance in regard to teachings and understanding of the physiological effects of menstruation on sports participation in schooling. Although the restriction of teaching or understanding this concept may come from a societal influence, it can have an impact on students' HPE participation. Collaborating with adolescent students who menstruate to determine their needs and abilities during physical education activities, as well as educating health and physical education teachers on how to navigate these conversations, could provide students with the necessary tools to participate in sports, reduce shame when discussing period disruptions, and allow them to move in a way that is comfortable for them. This approach may increase their participation in sports, improve their overall well-being, and reduce any potential power imbalances.

Students spoke of times they have experienced menstrual pain that can affect their ability to participate in PE activity. They said:

Student A: "If I feel bad, I will go to my mum and say can you write me a note, and she will be like oh, she hurt her leg at training last night. She won't be able to participate."

Student B: "I just carry on, I guess" (students laugh)

Student D: "When I have bad cramps, I just take Panadol."

The conversation shed light on the different perspectives and experiences related to menstruation among the students and reflected a perspective of menstruation disruptions being something to put up with and shared amongst society. Students are expected to hide their symptoms or push through them despite the discomfort. Mothers writing notes to excuse their daughters from participating in physical education class due to period-related symptoms can perpetuate the cycle of embarrassment and shame around menstruation. My findings in this section portrayed some direct quotes from students about the stigma and problematising that menstruation can have on them. In my focus group discussion, however, there was a lot of anecdotal conversation about the shamefulness of menstruation. This was evident when the students were talking about the connections through period products, experiences in the PE environment and the way they communicated their period pain in relation to opting out of PE activities. To help break down the shame and stigma surrounding menstruation perhaps the involvement of whanau needs to be a part of the education for menstrual health, as well. As this could also help reduce the taboo at home.

4.2.3 Special Character Schools

Special characters schools have values and religious beliefs that they uphold when it comes to RSE education. Teachers and students reported on their experiences in this environment when being taught RSE (inclusive of menstrual health) education in this sub-theme. As previously stated, menstrual health is taught within RSE in health education. Effective menstrual education can become difficult if essential information is omitted. Such information includes comprehensive details about how contraception can impact menstrual cycles, and understanding the different effects of hormone secretion from a pill bleed can assist in advancing MHE topics that are taught. This information is pertinent to MHE that adolescents could receive as a part of their comprehensive education on reproductive health. A clear understanding of how different types of

contraceptive pills affect menstrual cycles and hormones is essential to ensure that adolescents can make informed decisions about their reproductive health. Proper education on the contraceptive pill's impact on menstrual cycles is also relevant to pregnancy prevention. Therefore, it's crucial to provide adolescents with accurate and comprehensive MHE to help them make informed decisions and maintain their reproductive health.

Teacher 3 expressed her conflicts and the reality of teaching RSE to adolescents:

"Catholic Church is against contraception. Because you're not supposed to do anything that can stop a potential pregnancy, they've got issues with that. Catholic Church says you shouldn't be having sex unless you are in a marriage or long-term committed relationship. And so that doesn't allow us much scope to talk about reality and the fact that most of them will be starting to explore contraception and stuff. And yeah, I had an issue with that as well." Teacher 3.

Another teacher reported that he would not want to put himself in a dangerous situation when asked if he would be comfortable participating in MHE:

"In short, yes, I would. I feel comfortable participating in it. But if I look at it through the lens of the school, which is really quite conservative, A lot of the health education and a lot of this learning around puberty and relationships is taught through our RE (religious educators) by the RE staff, as opposed to us as a health and pe staff. One of the reasons is that they have to be really careful about what has been sort of what has been taught, especially around reproduction and contraception, and therefore, it's been delivered by the catholic staff. We did do a big chunk around puberty and around appropriate relationship behaviour. But it had to be very careful the way that it was worded when we were delivering to the boys and girls; the head of RE (Religious Education), who is a female, had to be in the room." Teacher 2

Based on the comments made by Teacher 2, it appears that there might be certain regulations or guidelines in place that are hindering their ability to provide the same level or scope of RSE as compared to other state schools. These restrictions could possibly be attributed to the religious values and beliefs upheld by the school management, which might limit the amount or type of RSE that can be delivered to the students. It is possible that these limitations are in place to ensure that the RSE curriculum aligns with the school's religious ethos and principles.

Students in the focus group highlighted their experience within RSE education. They spoke of not getting sexual health advice or RSE experiences like other schools do:

Student A: *"They don't have to just talk about periods. It could be like sexual stuff because they don't teach that stuff at school."*

Student E: *"Yeah, just the basics."*

- Interviewer: *"What are the basics? Tell me about the basics."*
- Student B: *"That a boy gets a girl pregnant."*
- Interviewer: *"Do you get support for that?"*
- Students: *"Nah, no, not really."*
- Student D: *"Well, this is a catholic school, so they don't really support that kind of stuff. But I know at girls high and boys high they do more like they have those classes."*
- Student A: *"We had like one teacher that like taught you about pubic hair and stuff they don't they don't really teach you about like sexual health, oh like the one with the cops when they teach you about consent and stuff (loves me not)."*

It is evident that the participants feel that they are not receiving crucial RSE, which is fundamental to their growth. MHE encompasses contraception and reproduction, and without comprehensive teachings and student comprehension, effective MHE may not be achieved. Adolescents require age-appropriate comprehensive sexuality education to thrive (WHO, 2023). In the focus group discussion from my study, there is a clear lack of access to appropriate RSE education for adolescents. Indeed, it is the right of adolescents to want this, along with teachers not feeling supported or feeling that they may step on the special characters' school values and beliefs. These comments from students mirror reports from other NZ adolescents when expressing their concerns about not receiving adequate RSE and felt they had received a biased nature of materials (Allen, 2008). This is highlighted in other studies throughout NZ and Australian schools, with reports from special character schools claiming there was a lack of opportunity for discussion on the mentioned topics above compared to other state schools in NZ and Australia (Allen, 2008; Dixon et al., 2022; Barbagallo & Boon, 2012).

Interestingly, a teacher felt that one barrier to teaching MHE was not being able to teach about the OCP. The OCP can be used for several medical and reproductive reasons, from sexually active to severe acne and menstrual disturbances. It has been identified that young women use the pill for reasons such as menstrual pain and heavy bleeding (Armour et al., 2020). Discussion in my study highlighted several comments on the use of the OCP in a special character school. Physical well-being was one reason for taking the contraceptive pill, as a student reported that she went on the pill for her menstrual pain:

- Student A: *"Yeah, I just get really bad cramps. So, I went on birth control to Like completely stop my period. I feel like most of my friends are on birth control, and so they just don't get their periods,*

Interviewer: "Can you tell me more about that? Why?"

Student A and D: "period cramps and sexually active."

What is being expressed above is evidence that menstruating adolescents are taking the pill for menstrual-related symptoms such as 'bad cramps'. The special school curriculum followed in my study school does not agree with oral contraceptive methods, and therefore, the education about this is not taught. Interestingly, a female teacher expressed her experience as a young adolescent and her concern with it not being a topic of discussion for young adolescent females (in the school) today:

"Lots of girls go on things like the pill before they've even kissed a boy, and like they might have irregular periods or experience like symptoms that aren't good. Like I know myself. I hadn't even kissed someone yet. And I got put on the pill at 14 because I have a three-week cycle. And there was no exploration as to why actually it's quite normal or anything around that, and then you're not really taught about what's going on. And then they just, you know, you can skip periods for as long as you like with it. And no one actually tells you that education around that, so I think education around the pill would be epic if we could do it from, like, because people take it not for contraception. They take it for all kinds of cycle-related reasons. So, if we had, I think that could be woven into a programme somehow." Teacher 3

Further discussion focused on the teachers' experience teaching within a special character school:

"So, we haven't really had discussions. In the days that I've talked about that and again, from that Catholic standpoint, they don't like the pill, they kind of basically give a list of contraceptive things and then just move on. It's not something, and I don't agree with it, but it's not something that gets really talked about, so I haven't ever talked to students about that. I know from my friends that women don't know what it does. It's me presuming that teenagers don't as well. But hey, maybe they're way more onto it than I'm giving them credit for." Teacher 3.

Young menstruating adolescents use the OCP for menstrual disturbances (ACOG, 2018; Harel, 2012; Itani et al., 2022). My study has confirmed that for some adolescents, this is the case, too. As highlighted in the literature, the OCP can mask symptoms of menstrual disturbances such as amenorrhea or REDs, thereby impacting a person's physical well-being. The students in my study are asking for better quality RSE, and the narratives from teacher 3 argue that although young girls get put on the pill, the information or education they may get around that can be missing. Young menstruating bodies are rapidly changing; they should have access to information and education that empowers their knowledge to understand their bodies without shame or stigma. It is evident that there may be a clear barrier to accessing appropriate, well-informed RSE and menstrual health information from the narratives received from both students and teachers.

4.2.4 Summary

To conclude, this theme has highlighted that there are barriers in place that stop students and teachers from addressing menstrual health without the social and cultural constructs, such as a lack of knowledge and adequate teachings of te ao Māori and following special character school values. Te ao Māori regarding MHE has had a missed opportunity to represent the mana the period holds, reducing the chance to take out the shame and stigma around menstruating.

The discourse on the well-being of adolescents in this theme exposed that there are barriers in place that stop them from being able to understand their bodies and reduce any ‘taboo’ relating to menstrual health. Such barriers involve the uncomfortable feelings towards male PE teachers when discussing period pain, which can influence how an adolescent navigates and understand their bodies. Shame and stigma are apparent today regarding menstruation, and there seems to be a lack of understanding of the realities for the menstruating adolescent, especially in the context of physical activity and sports in and outside of a schooling environment. The lack of understanding of the challenges that menstruating individuals face in these situations can lead to a number of difficulties, including discomfort, pain, and embarrassment. These challenges can also have a negative impact on the physical and mental well-being of those who menstruate, as well as their ability to participate fully in activities they enjoy. Therefore, it is crucial to address this issue and create a more supportive and inclusive environment for individuals who menstruate, particularly in the realm of physical activity and sports. Special character school teachings of menstrual health are required to uphold their faith and values. However, reports have suggested that there may be menstrual education missed or not as comprehensively covered compared to other state schools. All these implications within this theme highlight that the type and amount of MHE taught to menstruating adolescents has an impact on the way menstruating students and HPE teachers understand a menstruating body. All of these have been shown to be overwhelmingly shaped by societal norms, cultural beliefs, and historical contexts.

4.3 Theme 2: Educating for menstrual health “I know it is just like clearing the dead eggs inside of you”.

“Because you still don't really know what's like, what's really happening, right? It would be better to learn all about more of that stuff.” Student B

Discussions with students highlight their need for greater menstrual and nutrition education to enable them to understand all areas of the menstrual cycle for their health, along with mention of their need for greater sexual health advice. Teachers shine a light on their current knowledge and highlight the barriers they face and the lack of up-to-date resources to enable quality learning for their students. The sub-themes that emerged from this theme include knowledge of the menstrual cycle, nutrition and its link to menstruation, current classroom practices and resources, support systems such as outside educators and the importance of educating boys as well.

4.3.1 Knowledge of the menstrual cycle

Knowledge of menstruation contributes to teachers' and students' understanding of menstrual health. In this study, students and teachers described what they know about the menstrual cycle and where they go for support. Participants consistently emphasised the need for further menstrual health knowledge. In the following excerpt, student participants express their understanding of what a menstrual cycle is and how it might be experienced.

Student E: *“I just know that it's like clearing the dead eggs inside. of you. And everyone kind of gets like different symptoms like so many will get way more tired than others.”*

Student D: *“some will get worse cramps or more mood swings.”*

Student B: *” Yeah, just that you get it once a month. Some people like last longer than others. And some people can be irregular. Some peoples can be more regular.”*

Student E: *” And that can affect people in different ways. Some people just like heavier, lighter, different days. Yeah. I remember that.”*

Student C: *“Yeah, I remember in, like, year 9, it was like a 24-day cycle. Like your experience different things like within the month.”*

Student A: *“Ovulation stages and stuff. I remember talking about leaving a tampon on for too long. Yeah. and what it can do to you, and it*

stop the freaked me out, so I went off wearing tampons for ages because I was too scared.”

Student D: *“Yeah, because you forget about it.”*

The student participants made comments that referred mostly to the bleeding phase, suggesting that there is still a heavy discussion on the bleeding phase and how to manage it. Comments such as ‘some can be irregular and some are regular’ suggest that perhaps they think that can be normal. However, once an adolescent has developed her regular cycle, abnormalities and irregular menstruating is not normal. It seems they could be lacking education that emphasises what normal and not normal are when it comes to menstruating. Such lack of knowledge can have an effect on the ability to identify early warning signs of hormonal dysfunction that should be addressed.

Students were then asked if they felt that what they currently know was enough and if they thought their current menstrual health knowledge was enough to take into their future as growing women.

Students: *“No, nah”*

Student C: *“Because you still don't really know what's like, what's really happening, right? It would be better to learn all about more of that stuff.”*

These statements above demonstrate, as Roux et al. (2023) have found in their research, that menstrual health literacy and knowledge create good well-being habits for adolescents and assist in understanding their bodies. The students have expressed that they still do not really know what is going on, implying that their menstrual health knowledge needs improvement. Students were then asked if they thought more MHE was important and possibly useful for them, confirming that menstrual knowledge is of value and needed:

Student E: *“Yes”*

Student A: *“That's important to learn all that stuff coz it happens to everyone”.*

Student C: *“Yeah, I definitely think it's not talked about enough.”*

Student C has brought attention to the lack of adequate discussion around menstrual health. As discussed in the first theme, it is quite evident that menstruation is still deemed a topic that is often avoided due to social stigma and taboo. Typically, it is the responsibility of a mother, sister, or caregiver to initiate conversations about a girl's first period, and these discussions may inadvertently reinforce the belief that periods are something to be ashamed of. This belief has been long perpetuated in society due to the colonial narrative that menstruation is dirty, and unfortunately, it still exists today. Moreover, it appears that in schools, the bleeding phase of the menstrual cycle is most dominantly discussed, and even then, the focus is primarily on how to manage this phase. However, if we broaden the discussion around menstrual health to encompass

all of the phases of the menstrual cycle and highlight the positive associations around how ovulation can assist with things like academic performance and social settings, it could create a much-needed space for more extensive and open conversations around menstrual health.

All three teachers were asked the same question as the students about what they understood about the menstrual cycle, and interestingly, teachers gave varying responses,

Teacher 2: *“Virtually nothing. I know that at the extreme end, they can completely erase the cycle like completely erase the cycle. So, females who are training who are in intense training programs, they can actually stop the cycle.”*

Teacher 3: *“So I obviously understand that the fundamental reason for that is around potential conception. Menstruation starts on day one, and that's the onset of your period. It's also the beginning of what they call the follicular stage. Around that time as well your ovaries and all that are starting to get ready to prepare an egg release, and then you move into your ovulation stage. And there are obviously different things going on from different discharges, and your mood changes happening around that time. It's a really nice feeling sort of time. And then you move into your luteal phase in your hormones, and that can start to drop, and you can start experiencing things like PMS, etc.*

Teacher 1: *“Oh yeah, I know about the cycle phases.”*

Although teachers have identified their knowledge with the biological components of the menstrual cycle, it is missing a holistic approach. As stated in chapter two MHE knowledge can be heavily weighted on conception and the bleeding phase. Having MHE that is inclusive of cultural, social, mental and emotional connections can influence the way menstruation is seen. Teachers were asked what they understood about the menstrual cycle, and holistic connections were not presented. It appears that perhaps the current resources and teaching methods being employed for educating students on menstrual health may require some holistic improvements, such as the emotional, spiritual, cultural, environmental, and physiological events that may take place during their monthly cycle. Addressing these issues can help ensure that students receive accurate and comprehensive information about menstrual health, which is crucial for their overall well-being and development. During the conversation with Teacher Two, he admitted to having limited knowledge about the menstrual cycle but did mention that he knew about the loss of periods under intense training. This knowledge could be beneficial and incorporated into his teachings in HPE. By including such information, he could help his students develop a better understanding of the menstrual cycle, reduce stigma and embarrassment, and create a more balanced conversation. It could additionally influence the way male teachers perceive menstruation and help them relate better to menstruating students.

The literature suggests teachers should feel that they can talk about menstruation without it being a taboo topic, especially those who are teaching young adolescents about training and sports within HPE (Armour et al., 2020; Dixon et al., 2022). As noted by Teacher 2, it is possible to stop the menstrual cycle. It is crucial to educate adolescents about the physiological aspects of menstruation and why this knowledge is vital for their menstrual health, athletic performance, and overall well-being. It is essential to focus on what should be taught rather than what is currently being taught. As the menstrual cycle is a vital sign of health, providing essential information about female health is paramount for menstruating adolescents. If comprehensive menstrual health is not being taught to adolescents, it can have a direct impact on their quality of life, social interactions, and academic performance (Li et al., 2020; Roux et al., 2023).

In terms of deeper knowledge and understanding of menstrual health, throughout the focus group discussion with the students, there appeared to be no mention of more detailed MHE topics, such as abnormal period symptoms or endocrine conditions, such as endometriosis. This is concerning as few knew what the terms endometriosis or PCOS conditions meant. As indicated below, most did not know and laughed when asked:

“Ah no, nah (laughing) nope.” Multiple Students in the focus group

It has been highlighted by Bush et al. (2017) that most women do not realise they have conditions such as endometriosis until they are trying to conceive. Thus, better MHE in schooling could offset this. This is of concern as students were reported as having low menstrual health literacy, and they focused too much on only the bleeding phase of the cycle. This was the case in my study school, where the students’ knowledge of their menstrual cycle was poor, as highlighted in my focus group. However, this contrasts with other research studies where menstrual health literacy amongst adolescents in Australasia is stronger.

4.3.2 Nutrition and Menstruation

The topic of nutrition-related education is pertinent to this study as respondents expressed a desire for enhanced education on nutrition as it relates to menstrual health. When asking the teachers what they think would be the best outcome for updating resources for MHE, all three teachers expressed the link to nutrition and menstruation would be beneficial:

Teacher 2: “What I think the biggest areas this school would benefit from this conversation would be around nutrition to benefit your cycle., as opposed to how your cycle impacts on sporting performance. I am sure all of us could do with more nutritional knowledge on this”

Teacher 1: "At a senior level, we tend to just look at performance and exercise science, and we don't even look at nutrition or menstrual cycles, so we need to look at it in a more holistic way with that included."

Teacher 3: "I absolutely don't think there is...well, I haven't been involved in any (nutrition education for menstrual health). And I don't think there is any specific education around nutrition and menstrual health in school. Like I know that we've gone to seminars and stuff, and as an individual, I certainly haven't been taught it. But again, it does need to be a way bigger focus on that. I think, again, lots of adults don't have that information. So, lots of adults are not even aware of the fact teenagers need that information."

Teachers have expressed their interest in including nutrition connections to MHE. Nutrition is an important component of MHE for women (Abadi Bavil, Dolatian, Mahmoodi, & Akbarzadeh Baghban, 2018; Huhmann, 2020; Mountjoy, Burke, Stellingwerff, & Sundgot-Borgen, 2018). Menstruating adolescents require adequate consumption of a variety of nutrients, including proteins, fats, and carbohydrates, which are crucial for supporting a healthy menstrual cycle. As stated in chapter two, this is because proper nutrition intake enables the body to produce the right balance of hormones for optimal menstrual health (Barrack et al., 2023; Charlton et al., 2022; Coffey, Alai, Gray, Cotter, & Barrack, 2023). In essence, if one's nutrition intake is insufficient compared to one's energy output, one's menstrual cycle may become disrupted over time.

When asking the students about their knowledge of the connections to nutrition and their menstrual cycle, a student stated she has to keep track of her weight. I probed further to understand the connections this had to nutrition, her food intake and menstrual cycle:

Student A: "Um, I do xxxx, and I have to stay within, like, a certain weight category. So, when I was recently ... I've been trying to get into a lower weight category. So, I'll be like, going well. And then I'll get my period, and then I'll go up like two kgs, and then we will have to work that all right back down."

Interviewer: "How do you manage that?"

Student A: "I take like some fat burners, and I wear trash bags, and then I run heaps."

A further statement from student A involved the impact this had on her period:

"Umm, not really when I get it (period), but it's definitely lighter now that I work out heaps." Student A

Student A spoke of cutting food groups such as carbohydrates and only eating proteins and fruit in the focus group. Taking "fat burners" and running with "trash bags" to meet her extracurricular activity standards alongside cutting food groups is problematic for a growing adolescent and

underpins disordered behaviours. Therefore, it is important to prioritise education on the relationship between nutrition and menstrual health for adolescents who are menstruating. In addition to maintaining a balanced food intake, other lifestyle factors such as exercise, stress management, and sleep hygiene can also play a role in menstrual health. By providing comprehensive education on these topics, we can help menstruating adolescents to be aware of the complexities involving menstrual health. It is crucial for adolescents to have access to proper nutrition education that meets their body's requirements. Studies show that poor nutrition habits and inadequate education can lead to low energy availability, which students may not even be aware of, and directly affect menstrual health (Huhmann, 2020; Isgin-Atici, Kanbur, Akgül, & Buyuktuncer, 2020; Lagowska, Kapczuk, Friebe, & Bajerska, 2014). One teacher expressed her negative associations with the impact poor nutrition alongside training can have on the menstrual cycle:

Teacher 1: *"I have trained at an elite level for many years, and it wasn't discussed, and you trained hard no matter what, and I've been in sports where you lose a period altogether. Yeah, it was not discussed at all."*

The reduction of food and additional increase in exercise is a risk of developing menstrual disturbances such as the loss of a period, as echoed by the teacher's comment above. There appears to be a correlation between poor nutrition and menstrual health that many adolescents and possibly teachers fail to recognise. It is important to recognise that simply labelling foods as "healthy," counting calories and ignoring the importance of simply fuelling one's body can contribute to menstrual cycle disruptions and disordered eating, as recent research has shown (Babbott et al., 2023; Thein-Nissenbaum et al., 2014).

When talking to HPE teachers about nutrition behaviour and what they typically hear or get asked from students, comments around weight loss or seeing extreme weight loss were the most common. Teachers stated:

Teacher 1: *"Yeah, I've observed, you know, extreme weight loss. But I would not know what their eating habits are like."*

Teacher 2: *"The only question I have had (from girls) is what do I need to do to lose weight? That was with the junior modules. So, 13, 14-year-olds."*

Teacher 3: *"Definitely girls talking about their bodies negatively. Girls that are wearing short netball uniforms and feeling self-conscious or girls commenting on, "I don't want to eat brownie from the cafe Because I'm trying to lose weight", that kind of stuff. Or the opposite, "I'm eating salad. It's really healthy." I've heard a bit of that kind of commentary. Obviously, when we were in that class talking about nutrition, there were some talking about healthy diets. When we talk about diet, they think a diet means we lose weight, so learning around that vocabulary as well as interesting to unpack with them."*

The narratives above suggest that nutrition knowledge is required to improve eating behaviours and attitudes for the health of menstruating adolescents. There is a lack of education for menstruating adolescents in schooling to support their extracurricular physical activity or exercise to reduce any menstrual health disturbances that are caused by undereating, overtraining and just not understanding how to fuel their body, all of which are supported by the literature and reported in my study. Providing education on holistic nutrition and menstrual health is key to helping menstruating adolescents understand the impact that poor nutrition can have on their menstrual cycles, not just through adolescence but into adulthood as well, setting them up for menstruation life as evidenced in the data shared in this discussion chapter.

Nutrition education was highlighted in a number of conversations both with students and teachers. Fundamental to this was an opportunity for the researcher to hear what students wanted regarding nutrition education (despite this study being about menstrual health), along with what teachers were teaching and what advice they provided to their students. Activities can occur for menstruating adolescents that can impact the menstrual cycle outside of a classroom setting. HPE teachers could be assisted in introducing education on menstrual health for students' extracurricular activities. Therefore, as balanced nutrition is a fundamental value for the health of the menstrual cycle, I premise that teachers would benefit from additional support and resources for nutrition education to support menstrual health and well-being.

Whilst the importance of inclusive nutrition education for adolescents was emphasised in my discussion with students and teachers, the question to consider is whose role it is to provide this, particularly since this can play a part in menstrual disturbances. Furthermore, it must be acknowledged that educating young people about nutrition and its relation to MHE extends beyond nutrition alone. Environmental, social, and cultural factors can significantly influence food choices and eating habits, which, in turn, can impact overall health. For instance, social norms and cultural beliefs can influence certain food choices, while environmental factors such as access to a variety of food options may be limited in certain areas. Moreover, socio-economic disparities can create equity issues related to food and nutrition. Adolescents from low-income families may not have access to a variety of food options, which can impact their overall health and well-being. Therefore, it is imperative that consideration of these factors occurs when designing comprehensive nutrition education programmes for adolescents to ensure that they are accessible and equitable for all.

4.3.3 Current classroom practices and resources

Understanding current MHE in a high school setting is important, as identifying what level of menstrual health knowledge menstruating adolescents receive and how teachers implement it, will enable programmes to be designed to meet student needs. This correlates with the NZC (MoE,

2007), which states that programmes of learning should be guided by the NZC to meet the needs of students. In my study, teachers discussed what they taught their students with regard to health and menstrual education in years seven and eight and then shared what senior adolescents were taught.

Teacher 3: *“Okay, so we taught years seven and eight, so it was about pubertal change. So, we looked at physical and emotional things that started happening during puberty. There was definitely more of a focus on physical things. And then when it came to specifically about periods, there was brief stuff about the cycle and different stages of the cycle and then about what to expect during your period, both physically and like how your mood might change and that kind of stuff. And we went over possible sanitary products. Not a lot with the seniors. You might talk about different stages of your cycle. It's normal to have particular discharge like that kind of thing come up, but it wasn't specifically around menstruation. It was more around STIs, that kind of stuff.”*

Teacher 1: *“Yes, so they have these special days where they look at puberty or sexual education. I have been invited to present those days before in the school because it's a special character school, and health comes within RE. I don't know if it's the same with every Catholic school. But it is here, and because I'm trained in PE and health, I've been invited to teach the special days they have with the students to learn about and what age groups so years 7 and 8, we covered period change topic. “I taught last year in a module called I think It was Right Relationships, and we were looking at sexuality, and we did have a time where we broke away in the girls had some time talking about the menstrual cycle.”*

Teachers one and three have incorporated elements of MHE with students in the past. A focus on discharges and phases of the cycle was discussed. However, it was mentioned that it was mostly inclusive of sexual health education once they reached senior age. Although the two teachers have made an effort to discuss MHE, the discussion above indicates that senior adolescents are not being educated on specific topics pertaining to menstrual health in detail. However, there are some specific guidelines that are there to assist teachers in educating further on menstrual health topics. For example, *Relationships and Sexuality Education (RSE): A Guide for Teachers, leaders and Board of Trustees – years 9-13* provides guidance on aspects of MHE with which schools should engage. One of these topics is understanding physical change throughout the lifespan, which is inclusive of fertility, menstruation and menopause. Teacher two discussed a different perspective regarding teachings of MHE. He said:

“Menstruation No, no, it's not typically a topic that I would feel comfortable going in, especially as a male teacher talking to teenage girls. So no, I don't I don't go near that topic. Typically. Women in sports: Absolutely. I'm giving them case studies and examples

of ways that they could go about attacking our current sociology, and having football ferns playing the World Cup at the moment is definitely something I've been highlighting or reflecting on. And we did a 20-minute case study on the football ferns game versus Norway last week.” Teacher 2.

Teacher 2 comments that he would not feel comfortable going into the topic, suggesting that talking to adolescent girls as a male teacher is risky. Interestingly, the report by Dixon et al. (2022) highlighted that some teachers (females and males) were scared to engage and that RSE is risky. However, he has commented on teaching the topic of ‘women in sports’. This could be an opportunity to perhaps bring in stories of athletes in sports who have spoken of their menstrual cycle experiences and how it can impact sports and performance. Such a topic can be inclusive of materials that can aid in reducing the stigma and shame that is heavily weighted on MHE. In my study, it is evident that there needs to be more support and possible professional development in order to assist teachers (particularly male) and address any barriers of discomfort, as there are many barriers, including perceived risk, that can affect how competent teachers feel undertaking MHE. An additional barrier could be the limited professional development opportunities for teachers in MHE, as they are expected to navigate the topic through curriculum guidance and resources. Providing professional development for teachers could help them understand how to have comfortable conversations with their students and develop a more holistic approach to MHE, which could reduce the perception of it being a risky subject.

Having up-to-date menstrual health resources for teachers is paramount for teaching MHE to adolescents. Past research has suggested that when resources are current and easily accessible, it can influence whether or not a teacher will take the time to use them in their planning (Dixon et al., 2022). In the following student discussion, students voiced their needs and suggestions for better MHE. Students were asked if they would want anything changed as a result of this study and what it would be?

Student B: *“Maybe like more understanding about what's actually happening with us and as I did like a, like a workshop on it at school or something like once a year, it would be more helpful.”*

Student C: *“So I had a class about, like, teach you about, like, your health and stuff.”*

Student A: *“I think that would need to be like a compulsory course.”*

Student E: *“It is important to learn all that stuff because it happens to everyone.”*

Student C: *“It is definitely not talked about enough.”*

Teachers expressed their barriers to teaching what they think their students need for better MHE in the future. They also were asked what they thought may support their students and themselves as educators in the future, in MHE.

Teacher 1: *“Particularly in our school, we need to look at the coverage of what these kids want and discuss more of the things that we offer them every day. And I suppose not just for girls but for the boys as well.*

Teacher 2 ... *“Yeah. The average xxx kid isn't playing sports. And probably isn't concerned about how the performance or sport can impact a cycle. But I'm sure all of us could do with it and nutritional knowledge.”*

Teacher 3: ... *“So, I definitely think it needs to be something that's ongoing, and I definitely think it deserves more air time than one day a year as well. I think it's arguably more important than a lot of the stuff we teach here or go over. ... “More dedicated time to the teaching of this stuff. Like, actually, yeah, up-to-date resources. Like, I don't know how up-to-date a lot of the stuff we use or present is, and I think that my view is I don't think that it is holistic enough, either. Yeah. I think that would have helped and have more up to date resources provided to us. Because it's out there, but you can scroll forever and ever, and then that depends on the person's motivation to go out and find it and inform themselves. A lot of people (teachers) want to be just given the stuff to run with.*

It is evident that teachers are facing challenges in terms of finding appropriate resources and effectively implementing them. Additionally, there is a growing need for comprehensive MHE to support the planning and implementation of lessons. It is clear in my study that teachers need more support and training to offer their students the menstrual education the students have expressed the need for. Reports from the literature have highlighted similar wants, needs, and concerns as mentioned in this study (Allen, 2008; Barbagallo & Boon, 2012). Statements such as there being no further education outside of “loves me not” programmes and requesting compulsory RSE teaching so senior students are not missing out on comprehensive education within RSE. The barriers discussed by the teachers reinforced issues such as not having enough timetable time to include MHE. A teacher (teacher 3) expressed her experiences with current resources she had used in the past and suggested additional future recommendations for MHE. Teacher 1 reported on experiences navigating girls' periods outdoors while on school trips, stating she did not know of resources that could assist her. They say:

Teacher 3: *There are a million things that we have to do, and even though I think it deserves more time, I don't know exactly where it would get squeezed in. Everyone comes in with quite different levels of knowledge and understanding. So, to answer your question, ideal resources. Yeah, having someone who can kind of work alongside and plan and develop*

a program that is actually going to fit into the timetable of our school would be epic. And then, obviously, we have a different layout here as well with our Catholic character stuff. So as soon as it gets to the point where we're starting to talk about contraception, that's, I mean, that's a whole another thing entirely.

Teacher 1: *Oh, we've gone to school camps. Girls that haven't got the period yet. They were scared they were going to get it for the first time while we were in camps. And so, parents communicate it to me. So, we have discussions about what to do when you are out in the bush, and my sister and I actually made a video about it. It's called pee poo and period (laughing), and yeah, the girls particularly have lots of questions about toileting."*

Interviewer: *"Did you see the Ministry of Education has a resource for outdoors and periods called 'going with the flow'?"*

Teacher 1: *"No! (laughing) Oh, I suppose we get a lot of information about a lot of things."*

Interestingly, compared with teachers from the Dixon et al. (2022) study, the teachers in my study expressed that they, too, wanted greater opportunities to teach their students using learning resources and making use of external providers to support their planning and delivery of RSE. In the Dixon study, students voiced that RSE education topics should be mandated. However, although menstrual health sits in the realm of RSE, it was not explicitly identified in the study. It could be suggested that MHE is not being recognised or given the focus it should have. The comments from the teachers highlight barriers to being able to provide up-to-date adequate MHE within RSE that correlate with the findings of Dixon et al. (2022): there is too much information to look through or difficulties with fitting into school timetables. Teacher three is expressing her experience with a crowded curriculum, and teachers are expected to cover an ever-increasing amount of material within the curriculum. This can create a sense of overwhelm among teachers, as they may struggle to cover everything in the allotted time while also ensuring that students truly understand the concepts being taught. Furthermore, there is research suggesting that this pressure can cause important areas to be neglected, which can have long-term consequences for students' learning outcomes (Fitzpatrick et al., 2022; Petrie, 2014). As such, it is crucial to find ways to alleviate the burden on teachers while also ensuring that students receive a well-rounded education that prepares them for the future.

The current curriculum could focus on elaborating the cultural perspective and comprehensive menstrual health teaching in the education system. It is important to provide comprehensive and accessible information to all students, including those who lack knowledge at home, such as refugees and new immigrants with language barriers and different customs. Students who are not exposed to the right information are at the disadvantage of making uninformed decisions; this was

evident in the sub-theme nutrition and menstruation when student A explained that she tries to cut weight by wearing trash bags and taking fat burners, which had a negative impact on her menstrual cycle. This is why providing inclusive and comprehensive RSE that is inclusive of MHE is highly necessary. While some schools may have exceptional RSE educators, it should not be limited to single-sex or privileged schools. All students, regardless of their socio-economic background, should have access to comprehensive RSE education. It's crucial to provide the necessary resources, training, and support to all educators to ensure that they can deliver the RSE curriculum effectively.

4.3.4 Boys need education, too

Through my discussion with teachers and students, it was highlighted that the students wanted boys to understand the impact menstruation can have on the body. Teachers reiterated this by suggesting that boys need to be involved in the education about menstruation. Interestingly, both students and teachers commented on the lack of education boys are receiving in reference to menstrual health. Comments were:

Student C: *“If they taught it to us at school? It would make it no more normal. Talking about it.”*

Student B: *“Well, it's important for them (boys/male teachers) to know as well.”*

Student C: *“That they should be taught as well and they should learn about them as well. So, they can understand.”*

Student B: *“They don't really know anything.”*

Student D: *“Why are you in such a mood like that?”*

Student E: *“Or they say “oh, is it your time of the month” they just don't understand, so it will help.”*

Student C: *“Yeah. And I feel like everyone should learn about it.”*

According to the student's statements above, they felt it was crucial for boys to comprehend the various aspects and experiences related to menstruation. The idea of framing menstruation as solely a gendered issue reinforces harmful societal norms and taboos around gender and biology (Education Outdoors NZ, 2022). Since individuals with male sex characteristics do not undergo menstruation themselves, it is impossible for them to fully comprehend the experience. Educating boys about menstrual health, not just the menstrual period, could aid in their understanding and eliminate any associated stigma. As young boys grow into men with partners

and potentially daughters, it is important for them to be knowledgeable about women's bodies to promote the overall health and well-being of all menstruators.

Teacher 3: *“When I was involved in teaching it, we separated the boys and the girls, and there were female teachers for the girls and male teachers just for the boys. And I know that the boys did briefly talk about periods. But I don't know if our boys have a good understanding and if they need to understand it in more depth. They're going to be boyfriends and partners and might have daughters. They've got sisters, and so that would be awesome as well.”*

Teacher 1: *“Yeah, so they might feel awkward because they may not have experienced that (menstrual health education).”*

Teacher 3: *“We were definitely supplied with packs and resources and activities like when we did it. And so there would have been handed that, but yeah. If you haven't experienced something and you just got a base understanding of the basics of it. You can't possibly go into depth or development or understanding with the boys.”*

In this case study school, teacher three has exposed that menstrual education is taught by separating students based on gender. Separation of genders for menstrual health education has been ridiculed by students in other Australian and NZ studies, asking for boys to be a part of the education too (Ferfolja et al.,2022; Li et al., 2020; Wooten, 2018). The approach to gender separation can lead to negative consequences that can increase the stigma and shame that adolescents who menstruate already face (Ferfolja et al.,2022; Li et al., 2020; Wooten, 2018). When boys miss out on MHE, there is a risk of them not being exposed to detailed menstrual health knowledge. Furthermore, separating students based on gender identity could create a sense of exclusion for those who do not identify with the gender they are assigned to. This exclusionary approach can be deeply harmful and can lead to feelings of isolation and discrimination. Therefore, it is crucial to provide comprehensive menstrual education that is inclusive and destigmatises menstruation for all students, regardless of their gender identity. A suggestion can be made that instead of separating students by gender for the purpose of teaching menstrual education, a more inclusive approach could be taken. This could involve educating both boys and girls together, as well as male teachers, about menstruation. This would ensure that all students have a comprehensive understanding of the topic, rather than just those who identify as female. Additionally, it may be beneficial to provide different approaches to teaching MHE based on the specific needs and cultural customs of individual students. This could involve providing information in multiple languages or in culturally appropriate ways, such as through storytelling or visual aids. By taking a more tailored approach, we can ensure that all students have access to the information they need to better understand their bodies.

When Teacher 2, a male teacher, was probed about delivering resources to students in reference to sports and the menstrual cycle, he expressed his personal feelings towards conversations with students on the topic. He said:

I feel comfortable facilitating the provision of it. Yeah. On a personal level, I'd be a little bit nervous, encouraging conversations around it. Just in terms of exposing myself to risk. Yeah, I know they're menstrual. Menstruation is not a sexualised thing. But no. I wouldn't want to like to dip my feet into the conversations around that. And what other conversations Yeah if I look at it through the lens of the school, which is really quite conservative, whether it's Catholic, this Catholic base would be a question that I'll be putting in senior management as to whether they would want me in and whether they would see it as appropriate for me to be there. Yeah, I jump in. But I would be making sure that I wouldn't be putting myself in a dangerous situation, either to piss off the catholic side or conservative parents," Teacher 2.

All teachers, regardless of what school it is, should feel supported and confident in implementing teaching and learning practices in schools. Not surprisingly, it is quite understandable that this teacher may feel at risk when speaking to young females about reproduction and MHE. However, this aligns with literature that reiterates that menstruation is a “taboo” topic and not normalised (Bush, 2017; Armour, 2023; Li et al., 2020).

4.3.5 Support systems

Support systems are vital for adolescents as adolescence is a time of unique growth and development (WHO, 2023). Students in this study explained that they currently go to their mum, when and if they need support for their menstrual cycle. All students stated that they would prefer to speak to someone who specialises in the area of menstrual health, and would be more comfortable with MHE from health educators who taught them about their cycle in more detail and provided them with support. If students do not have a parent or person at home they could talk to, they were asked who they might go to other than their mum:

Student A: *“Like family Planning or my local doctor.”*

Student D: *“Yeah, same.”*

Student C: *“I feel like I wouldn't.”*

Student B: *“Yeah, I would be too uncomfortable.”*

Student E: *“Yeah, same.”*

Student C: *“Oh. Maybe I'd go to my doctor if I had like bad cramps.”*

Student B: *“Nah, if it’s their job, I would go.”*

Student A: *“I feel like it’s more normal to go to them (health professionals who teach MH).”*

Student C: *“If they specialised in it, I would feel more comfortable.”*

Student participants have stated they would feel more comfortable if the person was a health professional when seeking support for their menstrual health. Students from other studies expressed the same sentiments. They too, felt more comfortable when they were supported or able to talk to someone (a professional) who understood menstrual health (Hylton & Bourke, 2022). One teacher made a comment about where adolescents may go for support, indicating that although their mum is a comfortable place to go, not everyone has the knowledge to provide information that they may require:

...I think that I like I think a lot of people my age don’t understand all parts of the cycle. Like, I didn’t grow up understanding that you think the period is the main event, and like, I don’t. Yeah, I don’t think girls and women are taught enough about ovulation and the importance it has on your overall health and all our hormones around bone density and all kinds of stuff. Yeah, and we’re not taught about how things like the pill shut down that entire system and how that’s not just about having babies, all of your health, and it is connected to your cycle.... I mean, I know that some of them have got homes or they’ve got mums they feel completely comfortable and confident going to. Obviously, people’s mums have different levels of understanding as well. Like obviously, there’s so much online, and I’m sure lots of them are Googling stuff. But again, you can’t necessarily guarantee that what you’re finding is accurate. So yeah, I’m not really sure if they know exactly where to go to find credible supportive information.” Teacher 3.

It is evident that students may choose to disengage or avoid seeking support about their menstrual cycle when it is needed. However, studies have shown that they are more likely to feel comfortable seeking help from a health professional. Similar sentiments have been expressed by students in other studies who prefer to talk to professionals who understand menstrual health (Hylton & Bourke, 2022). Interestingly, research conducted by Fitzpatrick et al. (2022) suggests that when menstrual health programmes are linked to health services, both students and teachers are more likely to achieve successful outcomes. However, as no one school’s programme or student needs are the same it is difficult to ascertain how much depth they go to as it is up to the individual teacher and school programme. The teacher above reiterates this when she says that everyone has different levels of understanding, confirming the reports from the Dixon et al (2022) study in NZ that expressed teachers' concerns for RSE and health education being under-valued.

4.3.6 Outside educators

In Aotearoa, NZ, health professional educators sometimes come in to talk and educate students on menstrual health and, more commonly, sexuality education. This is because they are more suited to deliver sexuality education due to it being a challenging topic in which teachers may feel unprepared to teach. Teachers speak of their experiences positively, while students report on their experiences differently again.

Teacher 3: *“Yeah, I know. It's something she did. She actually brought in different cultural perspectives around menstruation and stuff.”*

Teacher 1: *“We had a guest speaker a year or so ago. and take the girls out, and she, I don't know how she trained in this, but she knew a lot about the menstrual cycle and history here in New Zealand. I've learnt a lot, actually about the different phases and how you might feel or what would be good for you at those times. And we all just sit around on the ground circle, and we all got to say how we feel about our period. What you might feel is something you don't look forward to, and it was really good.”*

Students expressed a differing narrative to what they learn from outside educators:

Student B: *There was this one class that we did one time. It was like teaching about STDs and stuff.*

Student D: *Yeah, it was the cops coming in with Loves Me Not Programme just talking about abuse in relationships.*

The literature chapter highlighted numerous resources that are available to schools, such as ‘Loves Me Not’. This is one of the programmes available nationwide in Aotearoa, NZ. The programme involves education on consent and promotes the prevention of abuse within relationships. Although ‘Loves Me Not’ is highly important, there is no talk of any menstrual health educators who educate on menstrual health other than the period phase of a cycle. While teachers’ narratives do expose the experiences they had with outside educators and how much they learnt about each cycle phase, this learning could be much broader. There is greater potential to educate adolescents and teachers on all areas of menstrual health, including looking for signs of endocrine dysfunction and understanding the relationship between nutrition and menstruation. However, it seems to be lacking in this case study school.

Earlier narratives from students in theme one exposed their interpretations of the “weird” of an outside education teacher talking about cultural and spiritual concepts of menstruation. Whereas,

above, teachers have expressed how much they learnt or recalled from an outside education teacher speaking of cultural connections to MHE. As mentioned in this chapter, teachers hold the power to teach, and students may not feel connected, respond or take in the outside educators' teachings. Students do not have a relationship with outside educators as opposed to the relationship they have with their teachers. Petrie et al. (2014) have reported adverse associations when using external educators, as they may negatively affect the quality of teaching due to a lack of connection and rapport with students. Teachers are better equipped to understand their students' needs and abilities, which helps minimise disengagement. In addition, Freire's pedagogical perspective of teacher-student relationships could promote a more inclusive, respected, and acknowledged approach to MHE. Partnering with outside educators and teachers to co-design lesson plans for MHE can greatly enhance the effectiveness of delivering knowledge to students. By approaching this from a pedagogical standpoint, we can establish better approaches for presenting MHE information to students that are both meaningful and beneficial to their menstrual health and well-being.

4.3.7 Summary

MHE is important for adolescent well-being (Roux et al., 2023). However, the findings of this study suggest several concerning issues regarding the current state of MHE. Firstly, there is a significant lack of knowledge among both teachers and students in this area. Additionally, there appears to be a lack of education for both students and teachers about the importance of maintaining a healthy cycle and the nutrition education required to support this. As a result, many adolescents face barriers in accessing proper MHE, leading to poor outcomes. To address this, adolescents should receive comprehensive MHE on identifying what is to be expected throughout a menstrual cycle, what things are not to be and how to recognise them, how to manage symptoms, and when to seek support. MHE is a critical aspect of adolescent health that must not be ignored. It is a vital sign of health for the well-being of students that should be addressed as such. However, providing accurate and helpful MHE is not without its challenges. Voices from the participants in this study demonstrate gaps in knowledge and pedagogical approaches between teachers and students when it comes to this topic, and both groups have expressed concerns and challenges about what is being taught and what is being left out. Although teachers hold the power to deliver MHE to students, as a result of this case study I suggest that teachers may lack the knowledge and resources to do this effectively. To address these challenges, it is essential to include MHE in both pre-service education and in-service education for teachers. This will equip them with the knowledge and skills they need to provide accurate and helpful MHE to their students, both in a cultural and academic context. By doing so, we can ensure that all students receive the knowledge

they need to maintain their health and well-being to reduce any shame or stigma associated with menstruation.

Chapter 5: Conclusion

This study aimed to identify what adolescents need to learn about menstrual health and how teachers could provide students with knowledge on effective MHE. Wider consideration focused on HPE teachers' understanding of menstrual health, the actions they take to educate their students, and what is required to support MHE in a school setting. This conclusion will discuss barriers and enablers to effective menstrual health education, acknowledge limitations and provide recommendations for future research.

Quality MHE holds significance as it helps menstruating adolescents understand the changes their bodies undergo during their menstrual cycles. It can equip them with knowledge and skills to understand their menstrual health effectively and identify any disruptions early on, thereby promoting their overall health and well-being. As highlighted through teachers' and students' voices in this study, menstruation is still heavily misinterpreted and stigmatised, which can make menstruating adolescents feel unclean, embarrassed, and unable to understand their menstruating bodies fully. Comprehensive MHE should support students to be empowered with knowledge and skills to understand their bodies. Topics covered could include aspects beyond the menstrual cycle and its hormonal changes, such as the anatomy of the reproductive system, contraceptive methods, common menstrual problems, cultural and historical understandings, and the influences of physical activity and nutrition on menstrual health. It can also guide where and when to seek support when disruptions are noticed. The findings demonstrated that menstruating adolescents deserve mana to understand and interpret their menstruating bodies to empower them with vital tools to take into their future and stop the cycle of shame.

The insight of MHE in this case study school, despite progress in recent years, found that students continue to face the stigma and shame surrounding menstruation. This can hinder their ability to view it positively. Stigma and shame are perpetuated by societal norms, cultural beliefs, and historical contexts that shape adolescents' perceptions and understanding of their bodies. According to narratives from both teachers and students from theme one, there is a lack of socio-cultural understanding surrounding menstruation, which only serves to perpetuate the taboo nature of the topic. Instead, they succumbed to hiding their menstruating bodies and menstrual disruptions due to feelings of embarrassment. Students stated they do not receive the quality of MHE within RSE of their peers, while teachers expressed their concerns about teaching their students some aspects of RSE. Students are left asking for better quality RSE, with teachers stating that more in-depth education, particularly around the OCP, is missing. Theme two, Educating for Menstrual Health, exposed that MHE has its complexities, and MHE is needed for menstruating adolescents, alongside greater supporting resources for teachers to improve current understandings of menstrual health in all its aspects.

I used a Mana wahine perspective in order to give student participants a voice and to honour their MHE experiences. Through their narratives, they have shared stories of embarrassment, discomfort, lack of knowledge, and the need for greater MHE. This perspective has allowed me, as the researcher, to empower menstruating adolescents by enabling their voices, leading to a better understanding of their requirements for MHE.

Recommendation one: Embedding te ao Māori understandings in MHE

Through theme one, I gained insight into my participants' experiences as they navigated their menstrual cycle within the social and cultural contexts of their changing bodies. The narratives from the first sub-theme, te ao Māori and western thinking, brought to light that te ao Māori understanding of menstruation seems to be an area students do not comprehend, and this was despite the focus group having Māori whakapapa. This could stem from a learned western way of thinking bought about by society's constructs, perpetuating the shame and stigma around menstruation and thus can shape menstruating adolescents' understanding and perceptions of menstruation. Alternatively, discussions on te ao Māori understandings could positively impact the adolescent perception of menstruation due to the mana and celebration menstruation encompasses within Māori culture. Associating menstrual health with conceptualisations of tapu, whakapapa and mana through teaching about te whare tangata and waiwhero could challenge notions of taboo associated with menstruation. Practical solutions for teachers within a menstrual health programme could include using pūrākau (storytelling) to engage with the pre-colonial aspects of menstruating to disassemble the shame surrounding menstruation. Further, kaupapa Māori places menstruation in a positive and celebratory light in comparison to the shameful and unclean view prevalent within western society. Additionally, for some students, covering more in-depth MHE inclusive of te ao Māori menstruation narratives can empower menstruating adolescents to make informed decisions about their menstrual health and well-being linked to their cultural beliefs. Ultimately leading to menstruating adolescents having whakamana over their menstruating bodies.

The sub-theme of shame and stigma exposed narratives of the students' emotions relating to shame and discomfort while using period products. They expressed feeling 'yuck' or afraid due to the information about menstruation presented to them, which highlights the persistent belief that menstruation is shameful or unclean. This, in turn, can lead to a sense of embarrassment around menstruation, as well as the belief that it should be controlled or hidden, all of which can create barriers to understanding the menstrual cycle and the menstruating body. This study also highlighted that menstruating adolescents may hesitate to discuss menstrual pain with their male HPE teachers and sport coaches, leading to discomfort resulting in reduced participation in physical activity during school. One solution could be lesson design co-created by students who have experienced menstruation which would help them feel more comfortable and increase involvement in class. It is essential to understand that the shame and taboo associated with

menstruation are not limited to the school setting but are deeply ingrained in societal attitudes and beliefs. I believe that it's important to note that menstrual health education should not solely rely on schools for implementation. It should be integrated into various aspects of society and whanau life. By doing so, menstruating adolescents would have the opportunity to gain a thorough understanding of menstrual health, which would ultimately contribute to reducing the shame and stigma often associated with menstruation. This integrated approach could involve community programmes, parental involvement, and wider societal discussions to ensure that menstruation is viewed as a normal and natural part of life.

Recommendation Two: Professional development in critical pedagogy for teachers of MHE

Engaging in critical pedagogy provides a framework to analyse and deconstruct the power dynamics surrounding menstruation, which has historically been characterised by stigma, shame, and misinformation. By engaging in critical pedagogy, educators can help empower individuals to better understand their menstrual health and challenge the social norms that perpetuate menstrual stigma and discrimination. Freire states that teachers should link their knowledge with action; however, the discourse of this study has revealed that teachers' knowledge of menstrual health education, restrictions within Catholic RSE, and limited MHE resources are hindering their ability to action comprehensive MHE. Teachers adopting critical pedagogy give students a voice, enabling them to find and develop their opinions and standpoints. It emphasises educating and relating it to the learner's real-world experiences. In the context of MHE, these teachings should connect to menstruating adolescents' realities outside of the classroom setting. Learning should prepare students to understand and provide tools to navigate their menstrual health situations, whatever they may be.

This study's special character school holds values and beliefs that follow Catholic education, which may influence how RSE is taught. Both students and teachers voiced special character values and beliefs in relation to menstrual health. Tensions, constraints and restrictions were raised in my discussion on the breadth of what teachers teach and what students learn. To grasp a better understanding and insight into special character schools and how they teach RSE, further study aligning with religious values and resources that meet both the school and the student's needs for comprehensive MHE could be investigated. In examining the social and cultural context surrounding the body, it becomes clear that many adolescents face significant obstacles in understanding their physicality, particularly when it comes to the stigma surrounding menstrual health. The breaking down of these barriers and embracing menstruation as a natural and powerful aspect of the developing body can help ensure that all adolescents have mana over their menstruating bodies that allows them to thrive.

Interestingly, students have expressed their desire for greater MHE as they felt they needed to learn more. This raises the question of whether the teachers in my study have the necessary knowledge and access to strategies to empower their students with greater MHE knowledge. In order to enhance the provision of MHE to students, a promising approach would be for teachers to team up with outside education providers to create lessons that align with the curriculum, the teaching and learning objectives and the student's needs. This partnership could also provide teachers and external educators with the necessary tools and resources to effectively deliver MHE. By creating this collaborative approach to MHE, students may receive a more comprehensive and engaging education on menstrual health. At the same time, teachers and outside educators can work together to ensure that the lessons are delivered in a way that is both effective and beneficial to students, the school and the school community.

Teachers may require support to enhance both the students and their own understandings of comprehensive MHE to teach it effectively. Interestingly, knowledge of MHE was still heavily weighted on understanding the biological phases, with valuable information on endocrine disruptions and the normal and abnormal signs to look out for not being well understood. Importantly, menstruating adolescents expressed that they want more comprehensive MHE and access to greater menstrual health information for their well-being and future growing bodies. Further discussion with the teacher participants revealed a need to adopt a more holistic approach to nutrition education as this was an area students wanted to discuss in relation to their menstrual health. My study exposed that menstruating adolescents need to understand the impact that restrictions on their diets or partaking in risky activities or behaviours can have, as this can impact their menstrual health and well-being. The need to educate on nutrition adequacy to support menstrual health is paramount to the health of our young adolescents so they can be aware early on of menstrual cycle disruptions and seek medical support if necessary.

Teachers play a critical role in providing students with good-quality MHE. However, many teachers face challenges when it comes to implementing MHE, with some expressing their unfamiliarity with available resources or finding it overwhelming to navigate through the vast array of resources. Teachers have also expressed their desire to better educate their students by using alternative resources as well as utilising outside educators' knowledge. It is essential that all students have access to comprehensive MHE, but reports from teachers in my study indicate that more support is required for them to deliver such education effectively. One way to achieve this could be to include MHE in teachers' professional learning and development practices in RSE pre-service and in-service education. With the right support and resources, teachers can provide comprehensive MHE within an RSE programme that will equip students with essential menstrual health knowledge.

It is imperative to acknowledge and understand the value of MHE for menstruating adolescents as it will continue to be of significance for them in the future. MHE is an important component

of comprehensive health education and essential for menstruating adolescents' well-being. Comprehensive MHE provides the knowledge and skills necessary to understand menstrual health effectively, and students should be able to consume it in a way that makes sense to them. Holistic MHE can help to break the stigma around menstruation by educating both girls and boys about the normalcy and mana of this natural bodily function. Comprehensive and holistic MHE for menstruating adolescents is not only a matter of adolescent health and rights but also a crucial step towards building a more equitable and inclusive society that respects the mana of the female body and, most importantly, is not inundated with stigma and shame. By implementing the suggested recommendations, we can potentially foster a positive outlook on menstrual health. This could have a far-reaching impact on teachers, whanau, and society as a whole. This influence can bring about meaningful societal change that extends far beyond the boundaries of the classroom.

5.1 Limitations

Limitations were apparent in my case study. It was a single site with three teachers and one focus group. I relied on the teachers to share the resources they use, so I did not have enough specific curriculum resource information. In future, it would be useful to examine further the resources for MHE. This could develop insight into understanding the specific information teachers are passing onto their students through a document or text analysis. It would be necessary to understand what resources are used to teach MHE and if they need to be updated. One further limitation was the fact there was not the opportunity to observe the learning environment. However, this was beyond the scope of this master's study.

5.2 Future research

Within this section, I have outlined Three key areas of future research that may be valuable to investigate. Te ao Māori learnings, special character school values within RSE and professional development for teachers are the key areas that could contribute to understanding and applying more comprehensive MHE. A longitudinal study could consider the impact of MHE and the knowledge of menstruating adolescents when taught menstrual education from a te ao Māori perspective. Such research could determine if the teaching of tikanga and pre-colonial narratives of menstruation could reduce 'taboo' and associations of shame and stigma.

Further research could examine the links between special character schools and MHE more closely. The revised framing document for human and sexuality education, *He Mea Hanga Mīharo ki tō te Atua Āhua – Wonderfully Made in God's Image* (2021), is used in Aotearoa, NZ catholic schools. It may be valuable to have a study that investigated the constraints and resources

used in teaching menstrual health in a special character school within this document, as this would meet the identified gap presented in this study. A critical approach exploring the tensions HPE teachers in special character schools are confronted with, could help to navigate the beliefs and values that accompany MHE within RSE programmes.

Adopting a critical perspective has proven useful in this study as it has enabled the researcher to challenge and unpack power imbalances in connection to MHE. Further studies incorporating professional learning and development linked to the NZ curriculum specifically for HPE teachers could be worthwhile. I suggest a way forward would be to create a programme where teachers and specialist outside educators come together to create partnerships for learning in MHE, in schooling. In addition, the complexities of the school environment and the teaching and learning processes undertaken could be considered when proposing a solution for comprehensive MHE. As MHE knowledge and pedagogy are multifaceted, a holistic approach is necessary to address the challenges and the proposed solutions highlighted in this study in order to create a comprehensive, effective, social and cultural approach to menstrual health education.

To conclude, this research has brought to light the complexities and tensions teachers face when implementing MHE to menstruating adolescents. Students expressed the need to learn more about menstrual health, and teachers exposed that they feel menstrual education needs more "air time" or that it could be looked at much more holistically. Moreover, findings in this study show that comprehensive MHE is needed to break down the cycle of stigma and shame in order to support menstruating adolescents' well-being. For instance, cultural and social norms significantly shape students' attitudes towards menstrual health. Finally, I suggest that endeavours undertaken to raise the profile of MHE will benefit not only students, teachers', and whanau, but ultimately society.

6. Glossary

ākonga – Student, pupil, learner

Aotearoa – Indigenous name for New Zealand

Dysmenorrhea – Painful menstrual cramps

Endometriosis – a condition where cells similar to the uterus grow outside the uterus

Hauora – fit, well, in good spirits

Health Literacy – when people have the ability to find and use information to inform health decisions.

Holistic Nutrition – the interplay of physical, mental, emotional, cultural, spiritual and environmental factors that contribute to health and well-being.

Kai – food, to eat

Kaumatua – elder

Koha – donation, gift

Mana – prestige, authority, control

Mana Motuhake – self-determination, autonomy and control.

Mana Wahine – power and authority of Māori women

Manaakitanga – hospitality, kindness, generosity, the process of showing respect and care for others

Mātauranga –knowledge, wisdom, understanding

Mātauranga Māori – Māori Knowledge

Menstruation – period, the process of endometrium thickening being shed as fertilization has not occurred.

Pākehā – non- Māori, European settlers

Papatūānuku – earth mother

Polycystic Ovary Syndrome – hormonal disorder for women of childbearing age

Rangatahi – youth, new net

Taonga – treasure, possession

Tapu – be sacred, set apart, restricted

Te Ao Māori – the Māori world

Te Ara tika – correct, pathway, Māori ethics

Te Tiriti o Waitangi – the Māori version of the Treaty of Waitangi

Tikanga – procedure, habit, custom, practice

Tupuna – ancestor

Tūpuna – ancestors

Wāhine – women

Wahine - woman

Waiwhero – menstruation

Whakamana – empower, enable, validate

Whakapapa – genealogy, decent lines, to layer

Whānau – family, to give birth, to be born

Whanaungatanga – relationship, kinship

Whare Tangata – womb, house of humanity

Whenua – land, placenta

7. References

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8. Appendices

Appendix A: Research Criteria.



Research Criteria

Teachers: The deputy principal of xxx in xxx will select the teachers for the research. The DP is aware that the teachers need to be selected based on the following:

- Teacher of Health and Physical Education (HPE).
- One HPE teacher must coach an extra-curricular sport.
- Teach health education and possibly menstrual health (period-related education).

The teachers will sign the participant information sheet and return via email to the researcher. The researcher will then email the selected teachers a consent form.

Students: Selection criteria will be established for the students. Ensuring the range represents the diversity of students at Campion College, including an interest in sport and exercise. The researcher will ask teachers to share the intent of the research (the participant info sheet) with three HPE classes from years 11 or 12. Interested students will put their name and email on the participant information sheet handed out in class. Interested students will sign the PIS and return to the researcher via a private box in the school office. The primary researcher will pick 5-6 interested students from the private box. The 5-6 students will be selected and emailed consent forms. The possible selection criteria will be determined, but are not limited to, using the following descriptors:

- Gender (However, any individual that menstruates)
The participant must be of the female gender. However, if a participant identifies otherwise but menstruates and meets all other criteria, they are very welcome to participate.
- Ethnicity
All ethnicities are welcome to participate in the research.
- Elite and/or recreational sport or exercise interest
Participants should have a high interest and be involved in sports and recreation. Students do not have to be at the elite level, and encouraging students with this criterion will be shared during the information sharing in the three HPE classes.
- Ability/disability
Anyone who meets the criteria is encouraged to participate in the study. There is no discrimination against disability.
- Age 16 and over
16 years of age and over is most appropriate for this study as their menstrual cycle should be present.

Approved by the Auckland University of Technology Ethics Committee on 16.06.23 AUTEK Reference number 23/104

Appendix B Participant information sheet – Teachers.



Participation information sheet - Teachers

Date Information Sheet Produced:

14/06/2023

Project Title

Current practice and future directions for menstrual health education in adolescent girls.

Hi, my name is Nicole Scott I am a Masters student at AUT University. I am completing a Masters in Sport, Exercise and Health, specializing in Physical Activity and Nutrition. I am interested in hearing what you know about menstruation, what you have been teaching about it in health education and what your opinions are for future directions for menstrual health education.

What is the purpose of this research?

The research examines the current practice for menstrual health education in adolescent girls. The potential benefit of this research could provide teachers and schools with information to empower young women to control their health, have early intervention strategies for menstrual disturbances and to better manage their endocrine conditions, or know how to seek guidance if they were ever to arise. It may provide future recommendations in order to create a more informed community (both school and external), providing awareness of the value of menstruation education for adolescent girls' well-being.

The aims of the study are to

- A. Identify existing menstrual health knowledge of health teachers /sports coaches and students.
- B. Investigate what actions health teachers/sports coaches take to educate adolescents in a high school setting on menstrual health.
- C. Identify what is needed to improve the current support and education for adolescents and the educator.

The findings of this research may be used for academic publications and presentations.

How was I identified and why am I being invited to participate?

You have been invited to participate as you are a teacher of health and physical education classes. Anyone can participate in this research study, but it is important that you meet the following criteria:

Health and PE teachers

- Health and PE teachers that teach menstrual health
- HPE Teachers who teach extra-curricular sports.

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How do I agree to participate in this research?

If you are interested in signing up for this research please read through this form and sign up by filling out your signature and email below. Please then return to the researcher. The researcher will email and send you a consent form to sign and return.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

You will be participating in a semi-structured interview with the researcher. The researcher will be asking you a number of informal questions. All responses will be kept confidential and recorded on my laptop. The researcher will work around your schedule.

Time commitment: 1 hour of your time will be required to participate.

When: It is likely that we can have this interview after school and on school premises.

What are the discomforts and risks?

The researcher is conducting this research to understand what resources may be needed to help educators and students in relation to menstrual education. There are no risks to teachers nor students. All interviews are private and confidentiality will be obtained throughout. Students and educators will have the right to end their research participation at any time if a student or educator was to become uncomfortable. Teachers will be made aware that they do not need to discuss topics that make them feel uncomfortable.

How will these discomforts and risks be alleviated?

If at any time you feel you are at risk or any discomforts occur, you can stop at any time during the research process.

What are the benefits?

The benefits of this research may help you and your students and school with information to empower young women to control their health and develop strategies for managing conditions related to menstruation, alongside understanding what educators may require for future education on this topic. This research will be assisting the researcher in obtaining her masters qualification.

Approved by the Auckland University of Technology Ethics Committee on 16.06.23 AUTEK Reference number 23/104



How will my privacy be protected?

All conversations with the researcher will be recorded and locked securely on the researcher's laptop. All participants will sign a consent form and within that a confidentiality agreement needs to be met. This is a casual conversation on what you teach in school, what you know about menstrual health and what you as a teacher want to see in the future. If you do feel uncomfortable throughout the interview then you can stop at any time.

What are the costs of participating in this research?

There is no financial cost. However, your time will be required of up to an hour interview, this will be after school hours.

What opportunity do I have to consider this invitation?

If you are interested in participating in this study, please provide the researcher with a signed copy of this information sheet via email within two weeks of receiving this form.

Will I receive feedback on the results of this research?

The research will provide participants with a url at which you will be able to read a summary of the findings, if you wish to do so.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Denise Atkins Email: datkins@aut.ac.nz

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, ethics@aut.ac.nz, (+649) 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Nicole Scott. Email: kkg2554@student.aut.ac.nz

Project Supervisor Contact Details:

Denise Atkins Email: datkins@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 16.06.23 AUTEK Reference number 23/104



Thank you for considering taking part. Please sign your name and email address below and return this form to the Researcher. **Nicole Scott. Email: kkg2554@student.aut.ac.nz**

She will contact you via email with a consent form to participate in the study.

Name:

Email:

Approved by the Auckland University of Technology Ethics Committee on 16.06.23 AUTEK Reference number 23/104

Appendix C: Participant information sheet – Students



Participant information sheet – Students

Date Information Sheet Produced:

14/06/2023

Project Title

Current practice and future directions for menstrual health education in adolescent girls.

Hi, my name is Nicole Scott I am a Masters student at AUT University. I am completing a Masters in Sport, Exercise and Health, specializing in Physical Activity and Nutrition. I am interested in hearing what you know about menstruation and what you have been taught about it in health education.

What is the purpose of this research?

The research aims to look into current practice for menstrual health education in adolescent girls. The potential benefit of this research could provide your teachers and school with information to empower young women like yourself to control your health and develop strategies for managing conditions related to menstruation. Research tells us that early intervention or knowing how to seek guidance creates a more informed community. Therefore, knowing what is important to you in learning about menstruation could be helpful for teachers, sport coaches and schools.

The aims of the study are to

- A. Identify existing menstrual health knowledge of health teachers /sports coaches and students.
- B. Investigate what actions health teachers/sports coaches take to educate adolescents in a high school setting on menstrual health.
- C. Identify what is needed to improve the current support and education for adolescents and the educator.

The findings of this research may be used for academic publications and presentations.

How was I identified and why am I being invited to participate?

You have been invited to participate as you are a student who attends high school health and physical education classes. Anyone can participate in this research study, but it is important that you meet the following criteria:

- Be 16 years or over
- Be menstruating (Have had your first menstrual period)
- Be an active participant in either elite and/or recreational sport or exercise

What if you agreed to participate but, were not invited to take part in the focus group?

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Five to six participants will be invited to participate in the focus group and more than this may initially express interest. However, due to the small study design only an allocated number can participate. All participants who expressed interest will be contacted via email thanking them for their interest.

How do I agree to participate in this research?

If you are interested in signing up for this research please read through this form and sign up by filling out your signature and email below. You can then place that in the private box within your school office. The researcher will email you advising you if you will be part of a focus group and send you a consent form to sign and bring along to that focus group.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

You will be participating in a focus group of 5-6 other adolescent girls. A focus group is a relaxed group chat with other peers and the researcher. The researcher (myself) will be asking you some informal questions. All responses will be kept anonymous and recorded on my laptop. Kai and refreshments will be provided.

Time commitment: 45 minutes of your time will be required to participate.

When: At a time that is suitable for the group. It is likely to be after school and on school premises.

What are the discomforts and risks?

The researcher understand that the topic of menstruation may be uncomfortable for some. However, the research will not be asking questions about individuals own menstrual cycles (periods). Students and educators will have the right to end their research participation at any time if a student or educator was to become uncomfortable. Students will be made aware that they do not need to discuss topics that make them feel uncomfortable.

How will these discomforts and risks be alleviated?

The researcher will be providing all students who participate will a support services card. If you feel you may need more support with your menstrual cycle education or any other related support you will be able to contact one of the options provided on that support services card.

AUT Student Counselling and Mental Health is able to offer three free sessions of confidential counselling support for adult participants in an AUT research project. These sessions are only available for issues that have arisen directly as a result of participation in the research and are not for other general counselling needs. To access these services, you will need to:

- drop into our centre at WB203 City Campus, email counselling@aut.ac.nz or call 921 9292.

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- let the receptionist know that you are a research participant, and provide the title of my research and my name and contact details as given in this Information Sheet.

You can find out more information about AUT counsellors and counselling on <https://www.aut.ac.nz/student-life/student-support/counselling-and-mental-health>

What are the benefits?

The benefits of this research may help you and your teachers and school with information to empower young women like yourself to control your health and develop strategies for managing conditions related to menstruation. This research will be assisting the researcher in obtaining her masters qualification.

How will my privacy be protected?

All conversations with the researcher will be recorded and locked securely on the researcher's laptop. All participants will sign a consent form and within that a confidentiality agreement needs to be met. This is a casual conversation on menstrual health topics, what you are taught in school and what you may like to be taught in the future. If you do feel uncomfortable throughout the group chat then you can stop at any time.

What are the costs of participating in this research?

There is no financial cost. However, your time will be required of up to an hour for the focus group, this will be after school hours.

What opportunity do I have to consider this invitation?

If you are interested in participating in this study, please place this signed form in the private box within two weeks of receiving this form.

Will I receive feedback on the results of this research?

The research will provide participants with a url at which you will be able to read a summary of the findings, if you wish to do so.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Denise Atkins Email: datkins@aut.ac.nz

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, ethics@aut.ac.nz, (+649) 921 9999 ext.6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

Nicole Scott. Email: scott.nicole.ns@gmail.com

Project Supervisor Contact Details:

Approved by the Auckland University of Technology Ethics Committee on 16.06.23 AUTEK Reference number 23/104



Denise Atkins Email: datkins@aut.ac.nz

How do I agree to participate in this research?

Thank you for considering taking part. Please express your interest by placing your name and email address below and placing this form in the private box located in your school office. The primary researcher will receive your request to participate and will contact you via email with a consent form to participate in the study.

Name:

Email:

Approved by the Auckland University of Technology Ethics Committee on 16.06.23 AUTEK Reference number 23/104



Proposed questions for teachers

Health and PE Teacher semi-structured interview questions.

- How often do you teach your students menstrual health/period-related issues within your curriculum program?
- What is involved in education about menstrual health?
- What do you understand about periods and menstrual health?
- Are you confident using existing menstrual health resources when answering students' health questions? If so, what types of queries have you had from students, and which of those could you not answer?
- Are you aware of different menstrual cycle phases and how nutrition and exercise load can enhance or affect the cycle?
- What do you understand about periods and menstrual health related to nutrition and exercise?
- Do you think students/athletes focus on what they consume nutritionally? i.e., do you notice any unhealthy behaviors? Dieting, restricting etc.
- Do you provide any nutritional advice to your students/athletes? (particularly if they are menstruating) If yes, what do you discuss? If no, state why.
- Have you ever had a student/ athlete show period/menstrual health disturbances at school or training? If so, what is your response to that?
- As an educator, what type of resources for this topic could support your students/athlete better understanding of menstrual health education? If so, what type and how do you think would benefit you as an educator?
- What do you think will benefit you and your students/athletes in the future regarding this topic?

Approved by the Auckland University of Technology Ethics Committee on 16/06/23 AUTEK Reference number23/104

Appendix E: Proposed questions - Students.



Proposed Questions for Students

- How often are you taught about menstrual health/periods within the health program?
- What have you learnt? Where or who from?
- Share with me your understanding of menstrual health/periods.
- How easy is asking your health teacher or sports coach questions about menstrual health education? Tell me more.
- Have you ever had to confide in your teacher or sports coach regarding menstrual health education? If so, did they provide enough knowledge and understanding of the topic?
- Can you tell me how nutrition or exercise may influence your menstrual health?
- What nutrition knowledge do you currently have? i.e., what do you think healthy eating behavior entails?
- Do you think you should eat more if you are training or exercising? Have you ever not eaten a food group? if so, why etc.
- Would you like to have further education on menstrual health?
- What do you think will benefit you and other students in the future regarding knowledge of menstrual health?
- Do you know where to go for support if you need it? Tell me more.

Approved by the Auckland University of Technology Ethics Committee on 16/06/23 AU TEC Reference number 23/104



Consent Form - Teachers

Project title:

Current practice and future directions for menstrual health education in adolescent girls.

Project Supervisor: Dr Denise Atkins

Researcher: Nicole Scott

- I have read and understood the information provided about this research project in the Information Sheet dated dd mmmm yyyy.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I agree to take part in this research.
- I wish to receive a summary of the research findings (please tick one): Yes No

Participant's signature:

Participant's name:

Participant's Contact Details (if appropriate):

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.....
.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 16.06.23 AUTEK Reference number 23/104

Note: The Participant should retain a copy of this form.



14 Consent Form - Students

Project title:

Current practice and future directions for menstrual health education in adolescent girls.

Project Supervisor: **Dr Denise Atkins**

Researcher: **Nicole Scott**

- I have read and understood the information provided about this research project in the Information Sheet dated 14 June 2023.
- I have had an opportunity to ask questions and to have them answered.
- I understand that the identity of my fellow participants and our discussions in the focus group is confidential, and I agree to keep this information confidential.
- I understand that notes will be taken during the focus group and that it will also be audio-taped and transcribed.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study then, while it may not be possible to destroy all records of the focus group discussion of which I was part, I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- I agree to take part in this research.
- I wish to receive a summary of the research findings (please tick one): Yes No

Participant's signature:

Participant's name:

Participant's Contact Details (if appropriate):

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Date:

Approved by the Auckland University of Technology Ethics Committee on 16/06/23 AUTEK Reference number 23/104

Note: The Participant should retain a copy of this form.

Appendix H: Code Book

Name	Description	Files	References
Changing bodies – social and cultural context (t)	Teachers comment on experiences they had growing up	2	2
Body image	Weight loss, social media and pressure from sport	5	9
Well-being	what issues are the girls currently having with their cycle, what are their periods like and how it makes them feel.	1	4
cramping	Cramping during sport, pe notes – experiences from teachers and students	2	5
period pain and sport	how students and teachers manage period pain around sport or activity.	3	6
period tracking & products	Students tracking habits and understanding of products, teachers educating on products.	1	5
the pill	Teachers and student's perceptions and use of the pill.	2	5
Educating for Menstrual Health (culture)	Understanding what is being taught, what was taught and perceptions around that	1	1
Current understanding of menstruation	What are the students and teachers' knowledge of menstrual health and periods.	4	8
Boys need education too	what would help students be more open to talking about their menstrual health concerns. Teacher comments on educating boys.	2	4
seeking support	Who students go to for support when they have issues with periods	2	4
Name	Description	Files	References
Future recommendations	An insight of teacher and students wants, needs and recommendations	4	9
Resources	What are teachers given and what do students receive.	3	4
Current teaching practices	What is being taught.	3	5
Catholic lens	Issues with catholic barriers for menstrual and reproductive teaching and advice.	2	2
girls want better sexual health advice	due to being a catholic school, girls are feeling they do not get taught enough.	1	1
outside educator MH education	What has been provided to teachers and students outside the school curriculum.	2	2
uncomfortable (t)	Male teachers reporting uncomfortable conversations and uncomfortable participating in menstrual health education.	2	2
Nutrition, Sport and Menstruation	students and teachers understanding of eating habits and nutrition education. <u>Students</u> behaviours when eating for their sport	2	3
Coach nutrition advice	Outside coaching advice to students and extra-curricular nutrition advice for sport	2	3
nutrition education	What is being taught and what the students take in	2	5
we want more nutrition education	students want better quality nutrition advice and education that is specific to their sport.	2	3