

Instituto Superior de Ciências do Trabalho e da Empresa



**Journal Article**

**An exploratory view of female reproductive health issues: A Case study in Norway**

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## **Abstract**

The purpose of this study is to look at the history and state of women's health today through global literature review and in semi structured interviews in Norway. The main purpose of research is that as women in the online discussion are increasingly expressing unmet needs for their reproductive health issues, it is important to explore further. The impact of the common conditions were investigated, as many of these conditions have faced stigma and dismissal, yet greatly impact a woman's life. The study was based on literature review searched on EBSCO and google scholar. After the literature review was conducted semi structured in depth interviews were conducted in the larger cities of Norway. Specialists in Norway are well informed and aware of common reproductive issues, however their specialties vary. Reproductive health care in Norway ranks very well, however many women still face lengthy delays and struggle to be taken seriously. There is a lack of sufficient knowledge on many reproductive health issues within primary health care. Patients suffering vulvodynia have an especially poor offer in Norway. PMDD is one area where little research is conducted. There should be more focus on reproductive health issues in Norway to remove the stigma and acknowledge the pain many women suffer through, especially in primary health care services. There are currently few options to cure women's health issues, but there are options to manage them. Because many reproductive health issues fall between many disciplines, there is a problem with taking ownership.

## **Abstrato**

O objetivo desta tese é examinar a história e o estado da saúde das mulheres por meio de uma revisão global da literatura seguida por entrevistas com especialistas na Noruega. Este estudo é devido ao aumento da participação feminina na discussão sobre necessidades não atendidas sobre problemas de saúde reprodutiva e tem como foco explorar o tema com mais detalhes. O impacto das condições mais comuns foi investigado, pois muitas dessas condições enfrentam constante estigma e abandono, apesar de terem grande impacto na vida das mulheres. O estudo foi baseado na revisão de literatura encontrada na EBSCO e Google Scholar, como estudo exploratório. Em seguida foram realizadas entrevistas semiestruturadas com médicos em grandes cidades da Noruega. Os especialistas na Noruega estão bem informados de problemas reprodutivos comuns, mas suas especialidades variam. Os cuidados de saúde reprodutiva na Noruega estão muito bem classificados, mas muitas mulheres ainda enfrentam atrasos prolongados e lutam para obter tratamento sério. Faltam conhecimentos sobre problemas de saúde reprodutiva na atenção primária à saúde. Pacientes que sofrem de vulvodinia têm oferta especialmente fraca na Noruega. PMS e PMDD também são áreas onde há menos estudos. É necessário haver mais foco nas questões de saúde reprodutiva na Noruega, principalmente nos serviços de atenção primária à saúde. Atualmente existem poucas opções para curar problemas de saúde das mulheres, porém existem opções para gerenciá-los. Como muitos problemas de saúde reprodutiva se enquadram dentro de várias disciplinas, há um problema de apropriação do tema por uma especialidade médica.

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# 1. Introduction

## *1.1. Overview*

The emergence of technological communication platforms, has shaped a new form of social debate and information sharing, which has been able to include more people, unfortunately leaving those without access to the internet behind. In this regard, voices of women and men are becoming ever so present. Women as well as men are now able to connect with each other online, and to access evidence-based and non evidence based information on health issues. In this presence, it seems that the online discussion is not mirrored in official national information in the arena of women's health. Where the online discussion is characterised by unsatisfactory accounts with the medical system in terms of reproductive health issues. Additionally, there has been a growth in technology aimed at women within mHealth (Alvergne & Tabor, 2018), tracking menstrual cycle data and the self help market, including herbal supplements, where the latter is often unregulated and without sound efficacy (Wicks & Mahady, 2015). The goal of this paper is therefore to investigate whether the reproductive health issues women endure are in line with the current offer.

There are not many studies around the general female populations knowledge around their reproductive mechanisms, but there are findings among adolescents, that they pertain insufficient and inappropriate knowledge regarding menstruation (Cakir et al., 2007), fertility Ekelin et. al (2012) and contraceptive knowledge in both sexes (Kjendsli, Glavin & Gjevjon, 2016 & Frost, Lindberg & Finer, 2012).

Women's health has been defined by Women's Health Medical Education Program (Donoghue, 1996) as "Women's health is devoted to facilitating the preservation of wellness and prevention of illness in women and includes screening, diagnosing and managing conditions which are unique to women, are more common in women, are more serious in women, have manifestations, risk factors or interventions which are different for women" (Nichols, 2000:p.60).

Further in defining women's health, it has been emphasised by many feminist writers that the terms sex and gender are often used interchangeably in the literature. Sex is based on biological differences between female and male, the proven science. Whereas gender is based on the social construct that is taught to us and by which society has made a definition for what masculine and feminine is, with associated social roles. By definition, health is not only connected to being male or female, but also by the social constructs they live in (Borgelt et al., 2010, p.103).

The literature around specific women's health issues is increasing presence, nonetheless, a lag persists in understanding women's health and how women's general health differ from men's (Beery & Zucker, 2011). It is also of interest to understand how women's contraceptive choices affects their lives. While oral contraceptives have been on the market for many years, Pletzer & Kerschbaum (2014) urge for further studies in order to determine the effect of hormonal contraceptives on the brain, especially as they are frequently administered in pubertal development. Especially since the prefrontal cortex is only fully developed in the early twenties (Pletzer & Kerschbaum, 2014).

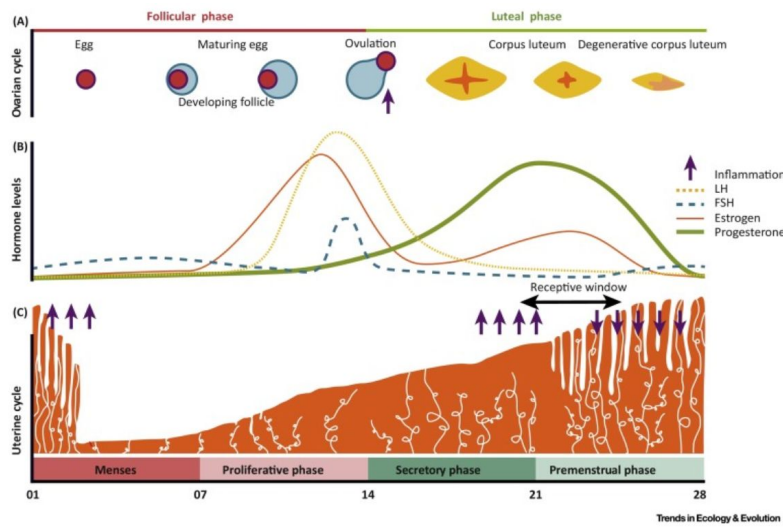
Furthermore Africander, Verhoog & Hapgood (2011) found inconsistencies in the literature regarding the understanding of hormones and the terminology used, because the different forms of hormones such as progesterone (naturally occurring in the body) versus progestins (synthetically made, with a different molecular structure) are often spoken about interchangeably. Synthetic progestin are according to Africander, Verhoog & Hapgood (2011) divergent from progesterone with discrepancies in half life, metabolism, receptor reactions and non-target receptor effects in the body.

### ***1.2 Common female endocrine disorders***

The human body carry messages to many different organs and functions in the body (MedlinePlus, 2015), most sources say around 50. Women experience monthly hormone fluctuations within their menstrual cycle (see Figure 1), over an average of 28 days (cycles vary),

affecting neurotransmitters, immune system and inflammatory reactions (Alvergne & Tabor, 2018:p.403). Because of the various hormonal mechanisms and their interconnectedness, they affect more than just the reproductive organs (Steiner, Dunn & Born, 2003). The change in the menstrual cycle while administered in monophasic oral contraceptives, is demonstrated in figure 2.

**Figure 1** - Adopted from Alvergne & Tabor (2018:p.403)



**Figure 2** - Adopted from Sims & Heather (2018:p.1313)



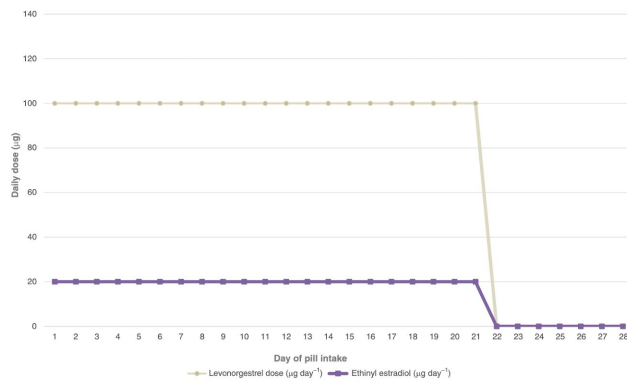


FIGURE 2 Daily exogenous hormone dosage, in micrograms, for monophasic oral contraceptive (data derived from Wyeth Pharmaceuticals, Alesse-28)

A list of common female conditions (but not a complete list), will be presented below. Most of these conditions are reported during reproductive years, between the age of 12-51.

***Polycystic ovary syndrome (PCOS); 9-21%***

PCOS is associated with one or more of the following symptoms; Insulin sensitivity, thyroid issues, hirsutism (masculine hair growth), infertility, cysts on the ovaries, acne and obesity, affecting the sufferer beyond the reproductive function. It is believed that as much as 9-21% suffer this disease in studies, depending on the criteria set (Yukhymenko, 2002).

The estimated annual costs in the US for this condition is \$4.37 billion, which is considered high, with the lowest cost associated with diagnosing and the highest on treatment. Thus a faster diagnosis has been suggested as a cost effective measure, leading to the possibility of earlier intervention and prevention (Azziz, 2007).

***Premenstrual Syndrome (PMS) and Premenstrual dysphoric disorder (PMDD); 70-90% with some PMS symptoms, 8.1% with moderate PMS, 4.1% with PMDD***

The symptoms can be divided into physical and psychological. Ranging from headaches, bloating, weight gain, breast tenderness, irritability, depression and anxiety and most often occur 5-7 days prior to menses, or earlier in some individuals (Borgelt et al., 2010). It is estimated that around 70-90% of women experience some form of PMS symptoms before the onset of their period (Borgelt et al., 2010). Results show that 4.1% of women qualified for severe PMS,

including severe depression, named PMDD and 8.1% qualified for moderate PMS. Indicating that 12.2% women have PMS symptoms that impact their daily lives (Potter et al., 2009). There is conflicting evidence whether age is a risk factor, because older women are more comfortable with seeking medical assistance for PMS than younger women (Borgelt et al., 2010). During a 1 year study including several countries, 8-16% of women missed at least 14 days from work due to PMS (Borgelt et al., 2010).

### ***Menopause; 15.7% experienced severe symptoms***

Menopause occurs at the average age of 51.5 in women and is associated with the transition from being fertile to infertile and female humans are one of the few mammals that experience this. The symptoms range from mild to severe and come in the form of hot flashes, night sweats, vaginal dryness, sleep disturbance, mood changes and urinary symptoms (Borgelt et al., 2010). It is further estimated that these changes also affect non-reproductive organs in the female body, such as the cardiovascular system (Borgelt et al., 2010). Results from a Jordanian study has shown that 15.7%, 66.9% and 17.4% of women were experiencing severe, moderate and mild menopausal symptoms respectively (Gharaibeh, Al-Obeisat & Hattab, 2010). It is estimated that employed women diagnosed with menopausal symptoms have 10.9% less annual work productivity than controls and were related to higher costs in medical treatment, pharmaceuticals and sick leave compared to controls (Kleinman et al., 2013).

### ***Endometriosis; 6 - 10%***

Endometriosis occurs in 6 -10% of the general female population and is associated with endometrial tissue growing outside the uterus, severe pelvic pain, menstrual irregularities and infertility, leading to a significant reduction in quality of life and sexual satisfaction (Bulletti et al., 2010). The treatments are usually surgical or hormonal medications (Bulletti et al., 2010). Hadfield, Mardon, Barlow, & Kennedy (1996) cited in Seear, (2009) that endometriosis faces lengthy delays from first consultation to final diagnosis (up to 11 years), which is mostly more than other chronic diseases (Seear, 2009). Although rare, endometriosis can also result in kidney loss (Nezhat et al., 2012). (Seear, 2009) attributes the delay due to the normalisation of menstrual

issues, and because the pain is conveyed through patients own communication, rather than an immediately visible pain. As well as lack of specialised education and outdated information regarding menstrual issues and endometriosis are said to be instilled within the medical system. There is an estimated loss of approximately 10 hours in productivity per work week for women with endometriosis, emphasising the individual and social costs (Nnoaham et al., 2011)

### ***Premature Ovarian Failure (POF); 1%***

Premature Ovarian Failure (POF) is associated with premature menopause and is a sign of infertility, affecting 1% of women under the age of 40. POF can cause a reduced quality of life (Podfigurna-Stopa et al., 2016). The most common treatment in traditional medicine is hormone replacement therapy (HRT) (Panay & Fenton, 2008). It has been “associated with long-term health risks which may include premature death, cardiovascular disease, neurologic disease, osteoporosis, psychosexual dysfunction, and mood disorders.” (Lynne et al., 2010:p.164). There is found a correlation between the increase in new technologies for family planning and increased age related infertility because many women fail to be diagnosed while on hormonal contraceptives. Kushnir, Barad & Gleicher (2014) suggest pre screening before commencing hormonal contraceptives.

### ***Vulvodynia; 15.7% in female population studies***

Harlow (2003) as cited in Edwards (2003) reported that 15.7% of women experienced genital tract discomfort for 3 months or more. Further, that only 60% sought medical assistance and those who did, had visited on average 3 doctors, often without resulting in a diagnosis. The 15.7% is expected to be an underestimated number because doctors often dismiss such pains and that women are reluctant to disclose pain that is viewed rare and psychological. The condition is explained as a chronic burning pain in the vulva and is often associated with comorbidity of other endocrine disorders and reduced quality of life (Arnold, et al., 2007). Arnold, et al. (2007) disclosed that up to 27% report vulvodynia as having a negative impact on their work life and 58% reported loss of sexual life. Further, Mathias (1996) reported via Arnold, et al. (2007) that \$883 million is spent annually in the US on chronic pelvic pain.

### ***Menstrual disorders; 3-33% severe dysmenorrhea***

Women who experience severe dysmenorrhea is between 3-33%. It has been associated with headache, nausea, fatigue, and vomiting. The most common treatments are hormonal medications or anti-inflammatories (Bernardi et al., 2017). In a study of 480 female university students in Turkey, 31.2% reported irregular menstrual bleeding and 5.3% reported prolonged menstruation bleeding (Cakir et al., 2007). Most of the participants pertained insufficient and inappropriate knowledge regarding menstruation (Cakir et al., 2007). Bernardi et al. (2017) stated that women who experienced severe dysmenorrhea, had absence of at least 1-3 days of work or school with each cycle.

## **2.Literature Review**

### ***2.1 Female health in history***

Throughout human health history, we have learned that women and men alike, suffer shared and sex-specific diseases. Global health trends have changed, and currently the prevalence of Communicable Diseases (CD) have decreased, whereas Non-Communicable Diseases (NCD) and life expectancy, have increased (Wagner & Brath, 2012). Before 1880, the life expectancy of women globally was shorter than men's, which has been attributed to the previously higher levels of maternal deaths (Pope, 1992). Since the 1800s medical institutions have put in great efforts to reduce the highly preventable deaths, associated with pregnancy (Chamberlain, 2006), and from 2005 to 2015 maternal deaths more than halved (Langer, et al., 2015). Unfortunately, maternal deaths remain an inequitable burden in developing countries, where 99% of maternal deaths in the world occur due to; poverty, malpractices, lack of healthcare access and abortion rights. The highest risk is said to be for females below the age of 18 and above 40 (Ahmed et al., 2012). Globally women now have a longer life expectancy than men, yet it is reported that the burden of NCDs and chronic diseases in women, is not adequately addressed and face inequalities (Langer, et al., 2015). Men are reported to have higher death rates globally, partly attributed to risk behaviours in work or personal life, leading to accidental deaths, suicide, and

poorer lifestyle choices, such as smoking and drinking, resulting in heart attacks and lung cancer (Matud, 2017). The well engraved gender health paradox that simply tell us men die younger and women suffer more morbidity and seek medical assistance more frequently, is however increasingly challenged, as the complexity to gender health is unveiled (Matud, 2017; Macintyre, Hunt, & Sweeting, 1996; Connell, 2012 & Hunt & Annandale, 1999).

When looking at the social health literature prior to the 1960s, medical injustices becomes prominent. Notably, regarding women's health. Women who had “unmanageable” or “mysterious” conditions, were often diagnosed with “hysteria” with the belief that women were more neurotic and had unstable minds, due to their “wandering wombs”. Medical professionals in the 19th century were additionally reported to casually dismissing women who seeked medical assistance (Bourke, 2012 & Shorter, 1984). Specifically for women’s diseases not fully comprehended at the time, such as post natal depression, hyperemesis gravidarum (Daniels, 2017), anxiety caused by rape, domestic violence or fatigue associated with confined social roles as caretakers and housewives (Bourke, 2012). The diagnosis “Hysteria” ruled for centuries, but fortunately ceased largely due to the women's movements in the 1960s (Devereux, 2014).

Liao & Dollin (2012) look at the historical perspective of a medicine encouraged to be used by women in her reproductive years, the Oral Contraceptives (OC). Margaret Sanger, a women’s health advocate was at the forefront of supporting the idea of using hormones as contraceptives. Even so, women, the users, struggled to have their voices accounted for in the initiation process. As her team struggled to legalise trials in the US, they found possibilities in Puerto Rico because of overpopulation and lack of laws prohibiting the process. Limited information regarding safety was given to the Puerto Rican women, and those who came forward to describe their many side effects were labelled “unreliable historians”. Despite the significant social benefit of Hormonal Contraceptives (HC), it’s history has been argued as a process with lack of complete consent, disclosure, information and research (Liao & Dollin, 2012).

In the early stage after reaching the US market, it was also found that women's reports of side effects were disregarded, resulting in women's advocates in the 1960s, to step up at a medical hearing, to protest against the medical companies failure to address potential side effects. Indeed, it eventually lead to change. It resulted in packagings containing side-effects leaflets, to solve the consent issue, as well as a reduction in hormone strength (Watkins, 2001). Watkins (2001) also emphasise the importance of the pill, as a game changer in women's ability for family planning, and it has been largely credited for women's social freedom and increased presence in educational and working institutions.

In many western countries such as the USA, HC is the preferred method. By popularity; the pill (28% in reproductive age), sterilisation (27%), following other methods (Jones, Mosher & Daniels, 2012). In contrast, 70-90% of women in their reproductive years in Japan choose to use the condom or rhythm method as their preferred method of contraception due to fears of side-effects, which are viewed as unreliable methods (Iwasawa, 2001). Despite this, Japan has considerably low fertility rates, and abortion rates have been reported below Scandinavia, USA and Australia (Iwasawa, 2001). An indication that we perhaps cannot always simply credit the OC for women's family planning, freedom and advances in society. A further interesting finding for women's health in Japan is the remarkably low incidence of breast cancer compared to the rest of the world. The cause however is not yet established and incidents are slowly increasing (Saika & Sobue, 2009).

## ***2.2 Complexities and biases in gender health***

Common misconceptions in women's health, affect the quality and access to health care. However, the female health discussion is commencing to expand from a narrow maternal health focus to addressing broader female health issues (Langer et al., 2015).

It is commonly stated that women seek medical consultations more often than men. By this token, grows popular claims that women are more sensitive to bodily discomforts, with a higher willingness to report on these, while studies are limited and conflicting (Macintyre, Hunt, &

Sweeting, 1996). When examined more closely, one cannot simply classify gender health as dichotomous opposites as there are complex layers to gender health (Connell, 2012) and “Schofield (2004) argues for Australian health policy, the statistical margin of difference between the two categories effectively becomes the meaning of gender” (Connell, 2012:p.1675). Further, Matud (2017), found that as sex differences in biomedical and mental health are reassessed, the gender gap in morbidity narrows and the concept of gender health becomes more complex. The complexity spur from discrepancies in different countries, social/cultural roles placed on genders, intra-group differences and co-morbidity factors. The gap also narrows by recognising mental health in men as external (behaviour and drug abuse) and that morbidity increases with age (Matud, 2017).

Furthermore Macintyre, Hunt & Sweeting (1996) discovered that women were not more likely to seek medical assistance sooner or report worse symptoms for colon cancer or for osteoarthritis, in instances on the contrary and (Matud, 2017) found no sex difference in reports of chronic back and neck pain among others. Macintyre, Hunt & Sweeting (1996) neither found evidence to suggest that women seek more medical assistance for “trivial” matters. Additionally, women seek medical assistance associated with reproductive health, are unfortunately more frequent victims of sexual and domestic violence. Macintyre, Hunt & Sweeting (1996) therefore questions to which degree this has been accounted for in studies. Moreover, results which have conflicted with the gender health paradox, is suspected to have been underreported or downplayed. As such, it has been suggested to revisit engraved beliefs and acknowledge the complexities to gender health (Macintyre, Hunt & Sweeting, 1996).

These preconceived notions around women’s health could be a part of a plausible explanation to why women with chronic pain report fear of speaking up, with age and appearance working against them. Wenera & Malterud (2003) learned in a qualitative study, that women suffering chronic pain and unexplained disorders, prepare in order to be perceived as credible and “Just right”. It was discovered that women attempt to not portray being too strong or healthy, but not unstable, while simultaneously conveying their actual pain (Wenera & Malterud, 2003). A

number of respondents reported their symptoms in conjunction with older age, became associated with menopause, which then ought to be expected and tolerated. Additionally, the participants responded they felt they were treated for mental disorders rather than their somatic complaints. The latter study did not cross check with the providers nor men, however, as Wenera & Malterud (2003) stresses, it is of great importance that the patient maintains focus on coping with the ailment itself, rather than striving to protect themselves from losing dignity and self esteem.

Differences in gender pain has been acknowledged as complex, due to the interplaying factors of different coping mechanisms, biology and disease variations between genders (Hoffman & Tarzian, 2001). Moreover, pain is subjective and often reliant on self-reports. However, Hoffman & Tarzian (2001) lean towards describing women as more sensitive to pain stimuli in studies and more frequent visitors for medical assistance, with the latter being in slight contrast to Macintyre, Hunt & Sweeting (1996). However, what is conclusive, is that women commonly face delayed and less aggressive treatments for pain than men (Hoffman & Tarzian, 2001). Women have been more likely to receive sedatives over pain medications, indicating that women's pain is viewed as psychological and men's as physical. These findings have been placed on a cultural view of female patients as unfit for medical decision making, and our current western medical model as being less accepting of women's subjective pain (Hoffman & Tarzian, 2001). It is also conceivable that in the instance of women being dismissed, they will revisit if the concern persists or worsens, likely adding to medical visit statistics.

### ***2.3. The female research gap***

In order to move forward on women's health agenda, it is paramount that the gender gap in research is closed. Previous research and practice have been male centric. Women have been excluded in studies, resulting in white caucasian men to be viewed as the healthy norm (Liu & Mager, 2016).



Beery & Zucker (2011) noted that single-sex animal articles predominantly concerned males (57% male sex and 17% female sex only articles). Fortunately, in 1993, the majority of studies started to include both sexes, however there are still studies that do not provide sex specific conclusions (Holdcroft, 2007) and the delay makes the research lag profound (Beery & Zucker, 2011). Fish (2008) cited that a lack of gender specification is particularly worrisome for diseases which are very gender sensitive, such as autoimmunity (Beery & Zucker, 2011). Further, research is still needed in order to conclude how genes in conjunction with fluctuating female sex hormones affect bodily functions beyond reproduction (Steiner, Dunn & Born, 2003).

Liu & Mager (2016) explain that the exclusion of women in studies, have been based on the thought that the outcome of disease and pharmaceuticals would be identical in the sexes. It has also been ascribed to fertility risks and fluctuating hormone levels leading to complex results, thus more costly. There has therefore been little considering for weight and biological differences in studies and many different outcomes remain unknown (Liu & Mager, 2016). If sex variations are not accounted for in medical research, it is failing those it is intended for (Mastroianni, Faden & Federman, 1994). This deficit is unfortunately also true for women and cardiovascular disease, as there are variations in symptoms, age risk and mortality outcome, with yet little consideration of the double x chromosome and sex hormones in studies (Regitz-Zagrosek, 2018). In shedding light on the urgency of recognising female specific disorders, it has been noted that there is an increased risk of heart diseases in women diagnosed with endometriosis under the age of 40 (Rich-Edwards et al., 2016) and an increased risk of cancer in infertile women compared to unaffected women (Hunt et al., 2016).

The same discussion prevail for menopause, because women now live almost  $\frac{1}{3}$  of their life after menopause. Thus, according to a Korean study the need for specialised knowledge of female happiness, health and hormones is warranted as demographics are changing (Yum & Kim, 2014). Moreover, it is commonly reported that women are twice as likely to suffer depression compared to men in reproductive years (Steiner, Dunn & Born, 2003), although one study cited that 30-50% of women may be misdiagnosed with depression due to the gap in female health

research and that women can suffer diseases that resemble depressive disorders, and may be wrongly diagnosed due to previous male centric training in medicine (Floyd, 1997).

#### ***2.4. Female and endocrine health practices***

Almeida, Comber & Balaam (2016) discovered that alongside female health issues, often follows embarrassment and stigma, because women's diseases often require intimate examination and a large amount of self-care. The intimate examination concept often lead to taboo and is widely associated with sexuality. If remained stigmatised, development of women's health can be hindered (Almeida, Comber & Balaam, 2016). More so, menstrual difficulties has been reported as one of women's main self-reported health concerns, along with tiredness, overweight, depression, and anxiety, through an Australian longitudinal national study (Lee et al., 2015).

In analysing menopausal practices, Lyons and Griffiths (2003:p.1639-1640) as cited in Roberts (2006), revealed that general practitioners and women alike find their hormones too complex. Which results in physicians transferring a great deal of responsibility on the patient, who is then forced to encompass a considerable amount of individual critical thinking regarding HRT decision making, while surrounded with conflicting opinions (Bond & Bywaters, 1998). In Australia and Scandinavia it was found women were commonly prescribed HRT, regardless if patients merely seeked support or information, which was described as a “masculine approach”. Consequently women turned to the internet or friends in their quest to understand menopause and its treatments (Roberts, 2006). This may not be in line with the social principle of trust for physicians. One could argue that this notion provides significant authority, and to a great extent power over a patient’s health. Hence it could be suggested that doctors should be more transparent regarding knowledge gaps on female conditions, rather than being apathetic or transferring too much responsibility on the patient.

In response to this, women especially undergoing menopause, are choosing Bio-identical hormone creams (BHRT). Certain pull and push factors have been identified as contributors in a small study. Among others are unsatisfactory results with HRT, herbs, soy and the view of

BHRT as the natural option to HRT (Thompson, Ritenbaugh & Nichter, 2017). Furthermore, women are not only seeking alternatives to conventional medicines, but for care, where their symptoms are acknowledged and heard (Thompson, Ritenbaugh & Nichter, 2017). These findings should emphasise that as women increasingly choose BHRT, there is a need for studies to establish its safety and risks, rather than solely criticise or ignore it, in order for established protocols and a better regulated market to take place.

With sufferers of PMS or PMDD, there are reported varying results when medicating with OC and Antidepressants. The effects on these conditions have been reported as unchanged, better or worse, depending on the individual's sensitivity (Bancroft, 2009). Therefore, Bancroft (2009) recommends pre testing in order to establish individual predispositions to side effects beyond blood-clots, when introduced to synthetic hormones.

Further, a patient centric approach is warranted in research (Norwegian Ministries, 2014), together with conducting socially responsible science. The latter is said to involve studying sex hormones as a variety of hormones affecting cell proliferation, rather than unique molecules engaged with sex in isolation (Krieger et al., 2005). On that basis, are there further validations to comprehend hormones in ratios, as studies frequently only discuss estrogen?

### ***2.5. Delayed diagnosis for female health issues***

There are studies that emphasise the importance of rebalancing hormones and the absence of menstruation in women in their reproductive years, to avoid more serious long term consequences (Panay & Fenton, 2008 & Barth, Villringer & Sacher, 2015), however it is paradoxical that women who seek help, often struggle to be heard. (Seear, 2009) finds that lack of awareness, the normalisation and dismissal of menstrual irregularities partly explain the delay in diagnosis. Additionally, abnormalities are often concealed by women, as “disclosure renders women vulnerable to stigmatisation” (Seear, 2009:p.1).

Panay & Fenton (2008) found it concerning that half of women with absent menstruation had to consult at least 3 physicians before they were examined for POF. It is concerning because effective diagnosing and treatment is said to be of importance in order to reduce the risk of osteoporosis, vasomotor symptoms, cardiovascular disease and Alzheimer's (Panay & Fenton, 2008). Harlow (2003) as cited in Edwards (2003) similarly reported that women with vulvodynia had to visit at least 3 doctors, which often did not result in a diagnosis. Further, although a crippling condition, endometriosis is frequently faced with delayed diagnosis of up to 8 years, which is substantially longer compared to other chronic diseases (Ballard, Lowton & Wright, 2006).

An important first step is to understand and acknowledge the physical, emotional and social stress related to delayed diagnosis (Lillrank, 2003). It is also material for sufferers absence and symptoms to be legitimized (Ballard, Lowton and Wright, 2006). Moreover, it seems likely and significant that similar imbalances can bring out divergent symptoms in individuals, as found in Souza et al. (1998). The study concluded that energy deficiency disrupts reproductive health in athletes, but not all athletes with some form of suppressed ovulation had irregular periods.

Attaining better offers and consensus for reproductive health should be part of reaching equality and having symptoms legitimized (Lillrank, 2003). Optimal health provides the ability to fully participate in society, reducing individual and social costs. Noteworthy, women in large parts of the world, remain as central caretakers within families and constitute a large portion of the healthcare workforce, as users and providers (Langer al., 2015).

## ***2.6. Opinions and views of women's health in the literature***

On the spectrum of women's health there are varying beliefs, from feminists, “society”, researchers and physicians. One doctor speculated “Do mad people get [endometriosis] or does [endometriosis] make you mad? It's probably a bit of both” (Young, Fisher & Kirkman, 2017:p.90). Feminists have argued that stating PMS as an illness is another way of pathologizing the female reproductive body, however this criticism negates women's individual experience and

serious menstrual conditions like PMDD (Ussher, 2008). PMS, an often less serious “condition”, related to anger, frustration, mild mood changes and minor outbursts in family situations, has been cited as the end of self-silencing, from a more contained previous 3 weeks (Ussher, 2008), rather than a deficiency or something that should be pathologized or stigmatised. In relation to these changes, there are reports of feeling guilty because of feeling divested in caring for others (Werner & Malterud, 2003). Guilt in these accounts, have been evaluated as deriving from losing the ability to live up to the ideal "feminine" behaviour, from a gender construct, which may attribute to women feeling marginalised this time of the month (Ussher, 2008).

In the commentary of Lupton (1996) there are further reports of varying opinions on menopause. Some are critical that menopause has been overly medicalised by HRT, that women have been passive and duped, with scepticism to lack of other alternatives. Other critics are dismissive of menopause as a “disease”, stating it should be beared as natural, welcomed and old age should not be fought against, in defining menopause for women. As well as “women are more than just their hormones”, that they can be controlled and that menopause and other menstrual issues have been portrayed as a deficiency disease. Moreover, Lupton (1996) explained the paradigm that women raising menstrual or hormonal concerns are often viewed as irrational and as society value rationality, avoiding seeking medical assistance and suffering in solitude should be viewed irrational.

Furthermore, Utz (2011) investigated attitudes of generations, by comparing attitudes to self-reported experiences and treatments in mothers and daughters regarding menopause. Utz (2011) judged that a stronger negative experience during menopause in younger generations was attributed to a lower acceptance of the aging process and increased awareness of menopause, predominantly shaped by society. However, it does not appear appropriate to discount concerns based on increased awareness. The study based menopause as the same biomedical experience for these generations, yet the incidence of other NCDs have increased (Wagner & Brath, 2012). Self-reports of women with hardships during menopause would disagree this is a case of attitudes. One woman, who had previously been diagnosed with cancer stated that “I mean

having cancer is a nightmare, but being so out of balance to me was more of a nightmare ... I will go to my grave clutching my [BHRT] progesterone. <laughter>” (Fishman, Flatt & Settersten, 2015:p.85).

Critical views may be vital contrasts to views that overpathologize or stigmatise the female biological systems. However while there is lack of definite biomedical explanation and acceptance to many of these conditions, a great space for speculation seems to have occurred. It appears problematic if women's health is too heavily investigated as societal attitudes and personality traits, as opposed to biomedical and research. Possibly fuelling the popular notion that women with unrecognised female disorders often experience; “that it is all in their head” Edwards (2003).

### ***2.7. Medicating menstruation***

Thomas & Ellertson (2000) argues that monthly menstruation is not ‘normal’ compared to older generations, as they would experience pregnancies earlier in life and more frequently. Thus describes HCs as a great way to manage contraception, periods and for diseases caused by women’s natural cycles. However, Thomas & Ellertson (2000) stresses that it is an individual choice, where other choices and natural periods should not be stigmatised.

Although, the logic that suppressed periods is ‘normal’, in order to follow our ancestors, could create confusion as Ahmed et al. (2012) stresses that pregnancy in frequency and at certain ages increases risks associated with maternal mortality and morbidity. Whilst not directly comparable to pregnancy, the question that arises is; as there are great health risks associated with pregnancy, what are the wider effects of adding synthetic hormones in adolescents that resemble pregnancy? Especially when not testing for individual risk factors.

### ***2.8. Hormonal Medications***

Hormonal medication is an important part of female health to examine, because of its central part in women’s health (Bancroft, 2009). Indeed, HCs and HRT may be well studied and effective

medicines of our time, nonetheless, opposing opinions prevail in the literature beyond the blood clot risk. Sievers (2018) published an article in *Medicinsk Vetenskap*, referring to interviews, where a medical doctor stated that women have posed significantly higher demand on the pill not creating problems compared to other drugs, urging women not to make such a big deal. However, it would make sense to impose such demands, as Matthiessen & McLachlan (2006) noted for the male HC trials, as they are designed for otherwise healthy men. Their benefit and risk profile is likely reviewed differently due to the possibility of becoming pregnant in women. Clinical trials conducted to develop the male OC pills have not resulted in availability. This still puts much of the current contraceptive responsibility and health risks on the women (Liao & Dollin, 2012).

On the other hand, Schneider et al. (2014) concludes that the use of synthetic hormones in the form of HC and HRT is strongly correlated to breast cancer risk and points to the significant rise in breast cancer incidents since the introduction of such medical technologies in 1960. Schneider et al. (2014) reported that the US Women's Health Initiative study, on the safety of HRT in 2002, had to be prematurely stopped due to excessive occurrence of breast cancer. Panay & Fenton (2008) stressed that these findings only applied to a certain age group, as women with POF started to question their HRT treatment. It has also been implied by doctors that if [women] knew more and understood better they would be less likely to give up taking [HRT] or the patches as reported by Kaufert (1994) & Swiers (1996) in Bond & Baywaters (1998). This statement however, could indicate a view of women as being unreflective in their decision making.

Grant (2017) questions the confusion with regards to the cancer risk represented for hormonal medications. Grant (2016) supports that the correlation is strong, however often not portrayed as such due to poor study designs and an overshadowing of the positives. Whereas, Collaborative group on Hormonal factors in Breast Cancer (1996) found the increased breast cancer risks with oral contraceptives is eliminated 10 years after cessation. Yet there is not much data to say if that is the case with the reduced risk for other cancers. Suicide has also been studied as a side effect in a Korean study. Where a correlation between Oral Contraceptive (OC) use and suicidality

(OR=1.13) was established. Results differed with history of depression, advising that mental health should be considered when prescribing (Jung, Cho & Kim, 2019).

Indeed there are varying results, which further depend on the method, interpretations and the sponsoring entity. If these serious side effects are in fact associated with the use of OC and HRT, then life altering side-effects that are not directly fatal, would also seem credible. Other studies have found that OC can affect; sexual desire, quality of life, DNA expression, brain structures, memory, choice of partner, personality, depression and autoimmunity (Lisofsky, 2016; Petersen & Cahill, 2015; Gingnell et al., 2013; Biri et al., 2002; Skovlund, et al., 2016 & Williams, 2017) and that side effects are more prevalent when systematically studied, (Talwar & Berger, 1979 cited in Bancroft, 2009). In a study by Sanders et al. (2001) with 79 women “38% were still on the same OC at the end of 12 months, 47% had discontinued OCs and 14% had switched to another pill. When asked the reasons for discontinuing or switching OCs, the spontaneously cited reasons included physical side effects (37%), emotional side effects (33%)...” (Bancroft, 2009:p.447). Moreover, a Danish study of 1 million women found that the “use of hormonal contraception, especially among adolescents, was associated with subsequent use of antidepressants and a first diagnosis of depression, suggesting depression as a potential adverse effect of hormonal contraceptive use” (Skovlund, et al., 2016). Indeed, consideration for depression is not only relevant for morbidity, but also for mortality (Steiner, Dunn & Born, 2003).

Grimes & Schulz (2011) suggest that many unspecified side effects are merely noise due to the placebo effect (power of suggestion). Arguing that it is unethical and unwarranted that women are given information regarding “bogus” and “unspecific side-effects” as the alternate risk of becoming pregnant is much worse due to high pregnancy morbidity, some permanent. It is evident that an unwanted pregnancy for young girls is a major concern, however the authors seem to dismiss the possibility that the total of “unspecified side effects” can impact quality of life. Beyond advocating for contraception, it seems the argument should lie in improving



maternal healthcare due to the emphasised high morbidity, rather than avoid informing women and girls of all potential side effects of the HCs they are voluntarily consuming.

Furthermore, there are few if any follow up studies whether depression or other side-effects persist after the use of OC and emergency contraception (Ross & Kaiser, 2016). It is likely to assume that 16 year olds will comprehend and thus report side effects differently to 30 year olds and could go both ways in terms of underreporting and overreporting. Thus age should be an important factor for studies, and should not merely be dismissed as adolescent turbulences. Moreover, studies may exclude results from participants that discontinue due to side effects (Bancroft, 2009), bringing the bias forward to future studies creating age discontinuation bias in older participants, as only those without side effects continue into older age (Zettermark et al., 2018).

The mainstream media in the US for example, is found to be normalising the use of oral contraceptives, framed with benefits beyond contraception, with little critical input (Lock, 2015). If HCs are trivialised and conveyed as the only best option, it is likely that many women will be left unserved. It may also undermine those who do experience side effects, which could be especially detrimental to adolescents, at a vulnerable age, especially without parental support. The purpose is not to evaluate medical guidelines, however there is seemingly not a wide acceptance in the media and medical practices of side effects nor defined ways to manage side effects, other than encourage the patient to continue, swap brands or add other medications (Barr, 2010). These perspectives may indicate an un-nuanced view of hormones as contraceptives and medications.

### ***2.9. Endocrine Disrupting Chemicals (EDC)***

With the high burden of female reproductive/endocrine disorders, comes the question to why that is. While a complex topic, some researcher are turning to EDCs in our eco systems and its link to these disorders (Hunt et al., 2016). EDCs are believed to enter our food and water systems from; pesticides, food packaging, contraceptives, foods, herbs and air pollution with varying potency.

EDCs are known to modify bodily functions in humans and animals, through altering receptor sensitivity, endocrine functions or mimicking hormones (Maqbool et al., 2016). Hunt et al. (2016) evaluates the growing evidence that particularly endometriosis and fibroids are possibly linked or exacerbated to exposure of diphenyl dichloroethane and phthalate, with associated cost to these conditions of around €1.5 billion annually in the EU. Other reproductive disorders in women and men are also potentially aggravated by EDCs, however there is still a lack of data and evidence for such estimates (Hunt et al., 2016).

EDCs and excess estrogens in the environment is said to be of particular concern, due to the vulnerability in the breast and uterine tissues (McLachlan, Simpson & Martin, 2006). EDCs are found in abundance in nature and affect reproductive organs in wildlife, thus the impact on humans raises concerns. Moreover, these environmental estrogens are reported to be transferable for generations, even if the exposure is removed, as witnessed with the previously used DES in mothers and its negative health effects on their children (McLachlan, Simpson & Martin, 2006).

Considering that EDCs are defined as chemicals that alter endocrine functions with the potential to provoke unfavourable health effects and chronic disease (Maqbool et al., 2016), would it not be appropriate that the use of OCs, Emergency Contraceptives and HRTs is brought into the discussion, as society becomes increasingly concerned with EDCs?

### ***2.10. New research and trends***

With the women's movement in the 1960s, a part of the pursuit for equality was the addressing of women's health and blatant discrimination (Nichols, 2000). However recent studies investigating women's and girls' knowledge of their own hormonal and reproductive bodies is not abundant. It would seem material to establish this knowledge gap, in order to educate and for women to understand their ever changing hormonal bodies.

Recently, Draper et al. (2018) conducted one of few studies from the onset of menstruation to menopause, in order to fathom which biomarkers (Ie. hormones, metabolites and amino acids

etc.) constitute a healthy female reproductive cycle, providing promising evidence with recommended studies for PMS and PMDD sufferers. Previous studies have “identified several correlates, including hormonal irregularities, vitamin deficiencies, prostaglandin and neurotransmitter dysregulation, psychosocial factors and atypical responses to changes during the menstrual cycle” for women suffering PMS and PMDD (Strine, Chapman and Ahluwalia, 2005:p.317).

Another recent study is investigating how genetic testing can help understand women’s susceptibility to specific hormone related brain changes affecting mood and which genetics may be more sensitive to large fluctuations in hormones (Wei et al., 2017). More conservatively, Quinlivan & McGowan (2018) suggest prioritising dietary information, basic supplements and education for female reproductive health issues and not getting too swooped into new technological advances.

Another proposed response to the growing female health issues, is to include menstrual related disorders as part of a standard doctors assessments, due to the considerable public health ramifications and individual psychological distress (Strine, Chapman & Ahluwalia, 2005). However, women's hormonal systems and its impact on the body is yet to be fully comprehended and many findings remain inconclusive (Strine, Chapman & Ahluwalia, 2005). Inconclusiveness in these regards is paradoxical, as women’s endocrine systems are uncritically altered by synthetic hormonal medications, while the menstrual cycle markers and effects beyond it’s reproductive role is allegedly not fully established.

Other health technologies are emerging and based on the growing millions of users of femtech apps within Mobile Health (mHealth) women are showing hunger to learn more about their bodies. These offer tracking and insight to women’s cycle variations digitally, through gathering data, although this data is not yet ready for academic research usage (Alvergne & Tabor, 2018). There is some lack of individualised functions and apps are predominantly aimed at well off western women. Nevertheless, if scientists and mHealth industry pool their knowledge together,

more insight can be brought back to the users and hopefully benefit a broader audience (Alvergne & Tabor, 2018).

### **3. Methodology**

#### ***3.1. Research questions***

The main research question was; **R1**: Is reproductive health care for women is in line with the actual demand for such care? The research was predominantly centered around reproductive health issues not directly related to pregnancy.

#### ***3.2. Literature Review data collection***

The literature review was completed prior to conducting the interviews in Norway, which held an inductive approach. As the interviews were to be conducted in Norway, research from similar high income countries were major sources of research. Academic research was conducted using searches under EBSCO host and Google scholar through ISCTE VPN access. Common keywords used were: Women's health, female health, hormone health, hormonal contraception, female reproductive health, women's health issues, infertility in women, female endocrine disorders, women's health in history. The research was exploratory and therefore a wide array of reproductive disorders were researched, searching for common patterns.

#### ***3.3. Empirical data***

In order to answer the research questions a qualitative study was conducted from a specialist perspective due to the exploratory nature of the study. The empirical data consisted of qualitative data, gathered through semi structured interviews conducted by the author, following the guidelines of Tong, Sainsbury & Craig (2007). The goal was n=15 participants. Selected participants (n=35) were invited via email and informed about anonymity. They were sourced and contacted from July 2019 to September 2019, from Google searches via hospitals, private practices, universities, recommendations from participants (snowball effect), and published journals and articles. n=15 accepted the invitation, n=2 were later not obtainable, n=13 interviews were completed, see **Figure 3**, built upon the structure of Young, Fisher & Kirkman

(2017). All (n=13) had clinical experience, some were currently more engaged with research, the ages ranged from 35 to 77. The sample consisted of gynecologists, endocrinologists and medical doctors practicing in the field of women’s reproductive health from the private and public sector in several of the larger cities in Norway. No repeat interviews were carried out.

**Figure 3.**

ID	Profession	Sex	Method	Sector	Time in minutes	Time in hours
G1	Gynecology/Phd	Female	By phone	Public	36	
D2	Medical Doctor	Female	In person	Public	110	
G3	Gynecology/Phd	Female	By phone	Public	50	
G4	Gynecology/Phd	Female	In person	Public	35	
D5	Medical Doctor/Phd	Female	By phone	Public	47	
G6	Gynecology/Phd	Male	By phone	Public	34	
G7	Gynecology/Phd	Female	By phone	Public	35	
D8	Medical Doctor/Phd	Female	By phone	Public/Private	30	
E9	Endocrinology/Phd	Male	By phone	Public	38	
G10	Gynecology/Phd	Female	By phone	Public	33	
G11	Gynecology/Phd	Female	By phone	Public	42	
G12	Gynecology	Male	By phone	Private	38	
G13	Gynecology	Female	By phone	Private	32	
Total	n=13				560	9.3
Average					43	

### **3.4. Background**

The participants were informed that the study was in relation to a master's thesis understanding reproductive health issues from a socio medical context in Norway, aiming to be published as a qualitative journal article. They were further informed that the study had initially commenced as a business study in the femtech area. It was informed that the author came from a non-medical background, but pertained interest and knowledge of the subject due to the ongoing study. In commencing the interview, participants were asked to specify their specialty area in order to slightly tailor the questions, followed by open ended questions regarding what they found important regarding women’s health and the topics discussed under framework. Finally they were asked if they had anything to add.

The sample is not representative of views and knowledge for general practitioners in Norway, as the participants pertain specialty knowledge and interest in the area of female reproductive health. Because general practitioners are the first link in the treatment and referral process, it would be advisable to include a study with general practitioners views for such disorders. It is also recommended to include patients in more studies, as indicated by the strong quality of research produced in England when involving users (Norwegian Ministries, 2014).

### ***3.4. Content analysis***

The interviews were audio-recorded with oral permission and fully transcribed by the author. Information that could reveal identity or of personal matter was removed. One participant (G1) reviewed the transcript and returned it with comments that were amended as suggested by the participant. The data was analysed qualitatively and quantitatively. The content analysis of the qualitative data was analysed using Gioia, Corley & Hamilton (2013) 1st and 2nd stage coding, where themes emerged from the color coded data. Themes also emerged due to the semi structured questions.

### ***3.4 Framework***

Young, Fisher & Kirkman (2017), unveiled themes that were important to women suffering endometriosis, leading the basis for understanding the impact of common reproductive disorders (not just endometriosis) on the female patients general life, potential infertility, and health. This became the building stone for understanding how reproductive health affects non-reproductive health, see Alvergne & Tabor (2018), as well as mental health, see Strine, Chapman and Ahluwalia (2005), Del Río et. al (2016) and Wharton, W. et al (2012). The study not only needed to understand the individual impact on female reproductive disorders, but what may cause delayed diagnosis, building on the work of Seear (2009) highlighting delayed diagnosis, stigma and menstrual concealment and the impact of diagnostic uncertainty (Lillrank, 2003).

## 4. Case study and findings

### 4.1 Global comparison of women's health in Norway

When asked an open ended question what characterises the Norway reproductive health care services participants recognised that Norway fare very well in the global context in women's reproductive health care. Due to the access to free abortion, contraception for younger women, sex education and quality maternal care, with minimal maternal mortality rates. These services show large contrasts to Africa, where reproductive health care services are poor, high maternal mortality rates and women's health is still a low priority. Due to the International goals, improvements have been made and is overall improving, however nonetheless, moving slowly.

*[G4] restated from health care workers in Africa that "Those working with tuberculosis, malaria, HIV receive laptops and ATV, while those working with women giving birth, receives pencils and bicycles".*

The abortion debate and laws are largely different around the world and as mentioned by has, as of late, have been under discussion in Norway.

*[D2] "The stricter abortion law, the more women die, not fewer abortions. Then it becomes ethically problematic to say there should still be strict abortion laws. And when our prime minister said in relation to law 2C. 'No, there will not be less abortions, but we need a change in attitudes'. Then I thought, there will be more shame/guilt. What other changes in attitudes should there be?"*

And that there is something else distinguishing abortion from other medical procedures:

*[G11] "The difference with abortion is that there is a law attached to it. Which is important to keep in order".*

Even if the reproductive health care services in Norway is ranking well globally, participants did express some concerns and important aspect of reproductive health care. Among them were the importance of safe abortions and more continuity in maternal care, pre, and post delivery. As well as the concerns for the increased medicalisation of birth and the decreasing resources for

maternal care. These concerns were voiced by one participant as especially important with the increasing push towards having more children in Norway.

*[G7] “Yes, I mean, we have too little resources to focus on [postnatal depression], there should absolutely be a better offer. If you are disposed for depression, there is a much higher increased risk for it post partum. That is one of the most vulnerable periods of your life”.*

Additionally, some parts of the women's reproductive health care did come across as somewhat fragmented. For example PCOS mostly belongs to the gynecologists, while the diabetes from PCOS lie in endocrinology. There were some different practices in hospitals as to whether PCOS belongs to gynecology or endocrinology, but mostly gynecology. And vulvodynia was fragmented due to the multidisciplinary treatment and care between skin, neurology, psychology, gynecology and sexology. Participants mentioned that many of the diseases have a large psychosocial burden attached to them causing stigma, such as hirsutism in PCOS, and changes in sexual health in almost all of the reproductive disorders.

*[G12] “As for PCOS, it is a bit like, I think there are a lot of primary care doctors who don't know enough about it, so that is maybe a bit more of a specialist assessment, yes. And good, (...) I think a lot of patients long for a good treatment of PCOS. That someone really understands them, I think that is a shortcoming for many”.*

Further, 4 participants specifically mentioned immigrant women without being specifically asked, as the need for better care is prominent. The concerns expressed was in relation to culture, stigma, mothers as central care takers, female genital mutilation, reproductive health care and a large portion of the women having been sexually abused. And there seemed to be a level of mismatch between the reproductive health care services available and their different compared to Norwegian women.

*[D5] “And when we are talking about women's health, there is a lot of taboo, and a lot of women who do not receive the care that they need. And there is definitely one demographic who needs a lot of care, and that is immigrant women. Yes, there we see (...) we see a lot of cases that they have no understanding for their body. Many struggle with pain and they have no one to talk*



*to. And when you come and seek help as an immigrant women, then you are even more likely to be stigmatised”*

Physicians also expressed their concern for the youth. The need for better health care services in a vulnerable time and that the quality of sexual education was variable. [D5] stated that it often also comes at the wrong time and should be repeated when more relevant and the information is better absorbed for example high school and university.

When asked if the participants had observed any obvious trends within women’s health 5 mentioned the worry for a youth culture in middle aged women and the need for perfection in younger women in various areas. Both as part of mental and physical health, trying to do and have it all, with many women now going to the extent of having fillers and surgery. This was seen in excess cleanliness in the vaginal area, worrying about the smell, looks and discharge. And an impression that if some women had one pimple they would not live up to that ideal and struggle with coping, making their life difficult. And [E9] expressed concern for the increasing trend in chronic fatigue syndrome and mental health issues is due to these aspects. And that in the pursuit of a perfect body and perfect life can translate into reproductive health issues.

*[G6] “The ideal woman is now meant to be skinny and beautiful. And then there is a certain limit to how skinny one can be, or should be. So if you reach under 18.5 in BMI that we define as underweight. Then that will often lead to other ‘side effects’ in the form of lack of menstruation because of low estrogen levels, then you do not have the possibility of becoming pregnant on your own. And increased risk of osteoporosis.*

One interesting fact was that [G12] voiced that many women, even around 25 and in a stage of not planning for children are doing fertility checks to see how much time they have. And if everything is working properly.

#### ***4.2 Low Priority***

In essence the financial incentives at hospital departments are financed in a way which is not in line with best practice in maternal and women’s health as mentioned by 3 participants. This may

be reflected by a low level of female leadership in hospitals (Reimann & Alfermann, 2018), rendering the current systems sub optimal for women's health care.

*[G3] "Maternity care is wrongly financed, in that it rewards a department for, in a way, doing a lot of interventions and so forth".*

*[D8] "This is because [vulva pain] is in a way, low status. Ehm (...) probably among politicians as well and health personnel as I mentioned. Therefore it is not prioritised, unfortunately. Because there is little money in this. And that is not helping".*

*"It is such a taboo and as I mentioned, little surgery. You know, you need to spend time consulting the patient".*

Participants working with vulva patients expressed it challenging to see that Norway only has 1 larger and one very small vulvodynia center with a total of one 40% doctor position in Norway in comparison to 20 centers each in Denmark and Sweden, when the demand is extremely large and waiting lists are up to 6 months.

Whether women's health care and the research attached to it is lagging was debatable. Some expressed remaining obvious gaps in research for women's health, such as the habit of saying "people" rather than "male" or "female". Whereas others expresses closer to satisfying levels. There was a general consensus that women's heart disease had been increasingly studied and that Endometriosis and PCOS are receiving more attention, especially the last 2-3 years.

*[E9] "Generally speaking one could say there is more equality between women and men. Previously there has been a focus on male diseases. I can say that is not the case today."*

*"But there has been a lot of sad names for complex female conditions that were previously unexplainable. But we can explain more now, and then it becomes more relevant"*

*[D2] "There are large discussions [Colleague's name] believes women's health is still neglected and is quite firm with that, while others say 'no'. There is disagreement among professionals"*

*[D8] "And we know that [vulva conditions] are a low priority, it is far from the head. So the closer to the head you get, the more prioritized. And it is a women's disease, and that has a*

*tendency to not be focused on. There is insanely more research on (...?) diseases with men in the genital area, then with women”*

*“Apparently 5 times more”*

Many areas within women’s health were lacking finite answers and research funding. The most prominent ones are psychosomatic for example PMS and PMDD, psychological effects of infertility and mental health in menopause.

[G7] “And it is a bit of a shame, that it is often difficult to get money for [PMS and PMDD] research. And it goes a little like, if you can call it cancer or cardiovascular and PCOS you can to a certain degree put it under the cardiovascular tree. You can also do that with Preeclampsia because it gives predispositions for cardiovascular disease in the long run. Normally unfortunately it doesn’t (...?), so then vi have to angle it in that direction, to make it easier for research funding. While PMS is not the highest priority in life or the medical faculty to put it that way. So that could definitely have been better prioritized on the ladder”.

Research at women’s health specialist centers are increasing. According to [D8] 80% of research within women’s health is conducted on maternal care. However do other reproductive issues deserve more attention than what is currently conducted? Moreover research within older women’s “reproductive” diseases are lacking in both media cover and research such as prolapse, urinary incontinence and fibroids. One participant found it highly relevant to look at women’s cyclical life and the fact that many remain as central care takers, and likely after menopause too (especially with increasing age of first born). Norwegian women’s health and immigrant women’s health, is not only important for their own health, but for strengthening their future generations.

#### ***4.3 Impacts of reproductive health issues***

Young, Fisher & Kirkman (2017) previously investigated physicians perceptions of endometriosis where lack of adequate psychosocial care was given to the patients as they saw potential other providers being more appropriate for that type of care and more themselves as the mechanic. Based on this study, it was difficult to comment where participants would place this

type of care, however no one speculated that mental health could cause endometriosis. More so the likelihood of subsequent labile mood and psychosocial repercussions due to the severe pain, infertility and painful sex. The participants explained endometriosis as having severe implications on a women's health. It became an obvious pattern that most reproductive issues not only have a severe impact on its own, but can be related to other diseases and social implications such as stigma. Endometriosis if not treated in a timely manner, could travel to the intestines and although rare, it was found in one patient that it had travelled to the lungs. When patients want to try for pregnancy, that in itself can be traumatic due to the stoppage of hormonal treatment and the subsequent pain. While on the other hand, a pregnancy might reduce the endometriosis.

[G1] *"If you have pelvic pain and cannot have sexual intercourse, are infertile, or if you cannot go on holidays or scout camps. Then of course endometriosis will have a great impact on your life".*

[D5] *"In addition endometriosis and Vulvodynia transitions over to sexual health too. And that is not very focused on, but a lot for these female issues, affects sexual health too. And that is an area which is awfully neglected by health personnel, in consulting how that feels for them. Sexologists are very good, but you don't receive reimbursements with that. I believe all health care units should have sexologists attached to them, for women's health, reproduction, after birth, all of this often touches on women's sexual health too. I believe it is not taken seriously at all".*

PCOS and endometriosis was one one the more "common" and known diseases, where there was an increasing awareness both with General Practitioners and Gynecologists. It was generally said to have an impact on quality of life, but not that the hormones in itself would cause a depression, but following the condition.

[G7] *"It is the hair growth issue, that a lot of people struggle with and becomes mentally affected. Many at least several younger girls feel that hirsutism is socially very embarrassing. And yes, partly very stigmatising and it is not very easy to treat, they do not necessarily receive support to remove it and so forth".*

With reproductive disorders that are not directly pain related such as PMS, PMDD, POF and menopause, come the most diversified views. PMS was mentioned as a poorly defined condition.

And when asking one participant if hormones or infertility in itself could be related to chemistry in the brain causing mental health issues, it was suggested that this was an issue within psychology. Which may demonstrate another fragmented part in women's health care, where psychology is a part of the suggested treatment while the reproductive system might be to blame.

Some stated that POF mostly affected infertility, and variably added osteoporosis, heart disease and cognition if untreated with HRT, not mentioning the mental effects other than if you do not have the desired number of children before entering early menopause. While one [G7] describing those hormonal fluctuations as almost disabling and some could enter a deep depression and another [G13] that these are real hormonal fluctuations, following other issues. It is clear that mental health impacts of such disorders are the most debatable and no one could confirm whether infertility on its own, for example hormonal could cause mental health effects besides psychosocial.

Vulvodynia is a newer phenomenon in the medical world with few resources, but awareness has increased, however the need for increased education and knowledge is profound as there are endless waiting lists with doctors when seminars are being held. The participants were not sure if it has increased or if there is an increased awareness, while [G1] did not witness these issues 40 years ago. Vulvodynia and skin conditions in the vulva can be crippling. Many physicians explained that factors are unknown, multifactored, or due to excess cleanliness, demonstrating a need for increased awareness and research.

[G1] *"Vulvodynia has been related to stress, the use of contraceptive pill, maybe over the counter ointments for suspected Candida (Thrush) and get hypersensitivity in this area. It has been a problem that we do not really know what is causing it, and that we do not really know how to treat it. But it is a problem"*.

There are dramatic implications of having a delayed and untreated conditions in the pelvic area. [D8] explained the worst consequence of vulvodynia is not being able to have a sexual life, because of muscles tightening and pain. For the other group of skin diseases you can have

adhesions in a way that physically blocks you. This is not only impacts the women, but her partner.

[D5] *“When women seek help, then it is often because they have a need for help. It is not always the case that they will need medications, but they should in any regard be taken seriously”.*

Based on these impacts it is clear that all female reproductive health issues can come with co-morbidity or risks for cardiovascular health, bone health, cognition and fertility. And with that, follows a change in social life, thus quality of life.

#### ***4.4. Understanding the diagnostic delay***

Many academic studies demonstrate diagnostic delay for endometriosis, POF, vulvodynia and other menstrual irregularities. It was therefore of interest to ask the participants of the situation in Norway and what factors creates delayed diagnosis. There were a few contributing factors. Only 2 were surprised to hear about lengthy delays in diagnosis for reproductive issues. (1) A commonality was that the gynecologist perception was that GPs often do not pertain sufficient knowledge of many reproductive disorders and may often overlook the first signs and normalise menstrual abnormalities. (2) The other was the varied knowledge among GPs and gynecologists. For example, some had less knowledge on hormones and PCOS, others had to have a special interest in vulvodynia as there is little information on vulvodynia in educational curriculum. (3) Moreover, there is a lack of “ownership” for many of these conditions [D8]. (4) There is the stigma attached to it which may render women avoid seeking help. However when asked if women were embarrassed to talk about it, there were no clear trend in saying so, some said it varies greatly, one said that women are very clear. Most mentioned stigma as a large part of these diseases. But an obvious “menstrual concealment” concept, examined in Seear (2009) may only be investigated with women themselves. (5) It was frequently mentioned that many reproductive health issues have a gray area, where it is hard to distinguish between what is normal and abnormal, that distinction is challenging. (6) Lastly endometriosis could also face lengthy delays due to invasive diagnostic methods, only through laparoscopy.

[D8] *“But for a GP who is not good with these conditions, will trust what the gynecologists are saying. And the women will often meet (...) they often have to fight hard for their diagnosis. They often have to seek several medical professionals og feel like it is a fight to be believed. I think it is about no one really taking full responsibility. And that is a great problem”.*

When asking if better guidelines would be useful, as introduced in Australia for PCOS reduce diagnostic delay (Teede et al., 2018), there was a general positivity. Gynecologists were well aware of national guidelines and registers in Norway, but emphasised that GPs may not actively use them and thus a better distribution or a “check-list” for lesser known conditions would be of great assistance. A few were concerned that too many guidelines would override the importance of individualised treatment.

In trying to understand what causes urgency for a faster diagnosis, participants were asked when hormone tests for further examination was necessary. All stated infertility as a reason to start a further investigation, absent menstruation after 3-6 months and more severe menstrual irregularities. Women with regular periods were assumed normal hormonal levels. Most seemed more restrictive unless it was related to infertility. Whereas the two participants less so.

[G13] *“If there are symptoms and issues I believe one should be examined. Because it creates a worry. If you do not have issues, then you shouldn’t order tests uncritically”.*

*“When you gain knowledge of your own body, then of course you feel more confident in what you are dealing with”*

[G12] *“I will take hormones tests quite promptly. It’s only a blood test. If one believes it will have an impact. There is no point if it won’t make a difference. But if it will have a consequence for someone, then it is easy to do”.*

There is evidence that if patients approach the doctor with menstrual issues in conjunction with fertility concerns, the complaint is viewed as more legitimate and investigated accordingly (Seear, 2009).

#### **4.5 Few treatment options**

Options to manage reproductive health issues are hormonal contraceptives, HRT, pain killers, antidepressants, other medications and in some cases surgery. It was not possible to grasp whether women suffering endometriosis, PCOS or other ailments were provided psychosocial care or other initiatives. However, it is likely that responsibility lies with the GP. A commonality is that there is little that can be done to cure, it can only be managed. The exempt is vulvodynia where there seem to be possibilities of curing the ailment with early intervention.

[E9]“The problem with the offer is, like I said before, hirsutism there is so little to do, medically. It is hard to stop general hair growth on the body and so forth. So I guess that is the problem, we are lacking medicine or treatments that could be effective. There is still no treatment to help patients normalise weight”.

#### ***4.6 Hormones as contraception and medication***

As there is a slight mismatch between official communication regarding hormonal contraceptives and women’s online discussion, it was of great interest to gather the participants views. Hormonal contraceptives constitutes a large part of women’s lives and the hormonal contraceptives is used by most women at some point in their life.

Participants emphasised that contraception should be individualised, but hormonal oral contraceptives seems to be the first recommended option when girls have contraceptives needs. 11 stated that they are not dangerous and even if side effects are experienced, they are not harmful (except rare blood clots) and that it does not decrease fertility. Participants also found there to be many misconceptions among girls and women who were unnecessarily scared of hormones or that they had to take a ‘break’ or they had to have the 7 day break for menstruation to occur. In addition women suffering menopause symptoms along with their GPs, had become increasingly unnecessarily scared of the use of hormones to reduce bothersome symptoms after the WHI study.

[D2] expressed that the prescription practice of hormonal contraceptives to teenagers are much better now, than they were maybe 15 years ago, as previously many received OCs who were not



meant to have them, resulting in some having blood clots. And found it sad if women are to avoid abortion at all cost, rendering women more scared of pregnancy than blood clots. Those media coverages in the 1990s resulted in an unfortunate boom in abortions. [E9] was slightly more sceptical, stating that women already have a well functioning hormonal system.

[E9] *“But there are many who think OCs are not for women, but for men [laughter]. But a lot of women becomes depressed, gain weight, get water retention, psychological issues. So that is a big problem. In addition there are women who get clots, thrombosis, clots in the lungs, legs and so forth, so you know (...) it is not harmless. But of course, women have to choose, and it is important to avoid unnecessary abortions etc. In lack of other options, if nothing else works, then that is fine, but there are many who stop because they can't take OCs and becomes ill”.*

When asked about official information to girls regarding oral contraceptives versus the side effects expressed in the online discussion, [G3] said the communicated information was very one sided on the optimistic side, and that girls and women are given too little information regarding knowledge of their own body and potential side effects from hormonal contraceptives. And that negative side effects are likely underreported. Conversely [D5] felt the research and information was too one sided on the negative side. [D5] longed for more nuanced research, as many women feel great benefits and are very happy with their hormonal contraception. But all agreed that hormonal contraceptives can have side effects or divergent reactions, as with any medication or substance. The main impression is that only after trying different oral contraceptive brands and other devices such as hormonal IUD are they put on non-hormonal options such as the copper IUD, if hormones cannot be tolerated at all. Hormones were viewed as the most effective option in protecting against pregnancy. Only 2 mentioned condom as an option. [D5] mentioned that condom was an option, but is less effective. [G4] said that condoms are perfectly safe and fine to use, but are viewed unromantic and as protection against STDs rather than contraception.

Furthermore many emphasises the positives ‘side-effects’ of oral contraceptives and its reduction in ovarian and intestinal cancer and other menstrual difficulties. On the other side [G11] stated that the total cancer risk profile is a neutral. This was evened out by the increase in breast cancer, with the reduction for other cancer risks.

The common side effects mentioned by all participants were mood changes, depression and sexual desire. [G6] said that mood changes could occur, but not that it could result into a deep depression. Whereas [G3] sometimes had to convince girls to change their hormonal contraception as they were having mental side effects. Most of the participants also stated that side effects were difficult to pin down, as often girls starting on birth control at a younger age are going through a labile phase as an adolescent or young adult. Further that consumers are not as critical in evaluating whether there is a coincidence or whether it is in fact the hormonal contraception. [D5] emphasised that it should regardless of cause, be taken seriously and treated thereafter.

[G10] *“I don’t think there is a very large increase in incidence of depression with oral contraceptive users. But there has been that rumour often attached to the use of birth control use. One probably thinks that women in that age, are maybe a little bit more labile, in that age where they start. In the teenage phase and early 20s, that there are variations there. Without actually knowing [...”*

None of the participants believed there are any risks of long term side effects of hormonal or emergency contraceptives, and that most find relief after they stop, some may experience a lag in ovulation for 3 months. A few participants did not exclude it, but said there were no good studies on long term effects. Emergency contraceptives were not viewed as any worse than oral contraceptives and that there were no restrictions on how many could be consumed per month, but was less safe for the purpose of contraception.

The overall consensus is that sexual education is very variable and that many do not have enough knowledge of their reproductive bodies. However it did vary on the person's age and socio economic factors.

#### ***4.7 Innovations***

With new innovations on the market, it had to be investigated. The two recent ones were apps such as clue and the increasingly popular Bio-Identical progesterone hormone cream. 4 had never heard of it, thus were not able to comment, however one of the 4, explained that progesterone can only be found in human blood and that progestins in OCs were actually derived from testosterone. The remaining answers were quite divergent. Either stating that “hormones are hormones”, likely having a placebo effect, not sufficiently tested, too weak, or that different types of hormones have been shown to have diverging effects as seen in different OC brands. And lastly that the more identical estrogen is better, but could not comment on the progesterone.

In regards to the new applications women frequently use, there were mixed views. 2 stated these were a little overrated as it was more than enough to put a cross in a normal calendar. Whereas others stated it could be good for conception, but care needs to be taken so women do not use them as pure contraception. [G3] and [G12] were more optimistic and said it could provide great insight into a woman's cycle and [G12] even stated it was a great diagnostic tool when used correctly.

#### ***5. Discussion and conclusion***

This paper confirms that reproductive health issues greatly impact women, beyond what it has been accredited for. Even if women in Norway have a great health care system that covers basic needs and beyond, there are reports of unsatisfying accounts in the healthcare system, which this paper highlights. Not only do they impact women but it impacts their families. It is therefore important to study women's health in biological terms, and in the context in which they live. Specialists are well aware of the common reproductive disorders, however there is insufficient knowledge in primary health care. Women's health issues mostly belong in the specialty departments rather than primary care, but the women's first and main encounter is the GP in primary care. Reproductive health issues such as vulvodynia, need to be better embedded into

medical curriculum. A review of whether other women's reproductive health issues should be better incorporated into the general doctors curriculum is advisable.

It has become evident that hormones do matter and are not relevant only for reproductive function (Alvergne & Tabor, 2018). There is a difficult balance in defining normality, without ascribing too many characters to women's hormones, while acknowledging that women can suffer due to their natural cycles and reproductive stages in life.

Furthermore, impact on mental health following reproductive concerns are unclear. More research needs to be done in this area. Especially concerning the impact of infertility, PMDD and menopause. More studies on women's experience would be the next stage to better understand the impact of such diseases.

The paper addressed contraceptive views and prescription practices in Norway for hormonal contraceptives. Hormonal contraceptives benefit many women for many needs, but it is clear that hormonal contraceptives is not for everyone and those complaints should be taken seriously. The topic is highly controversial as society wants to avoid having young women going through unnecessary abortions, and it is a great tool for many women. Nonetheless it is a large part of the treatment specter of women's reproductive health issues and often recommended for healthy women's contraceptive needs. If more studies can better explain why some suffer side effects, it is conceivable more doctors will be understanding of the patient. Experiencing side effects as a young girls for longer periods at a vulnerable time, could be challenging for some. This especially given that these are consumed without the parents knowledge. Rightfully so, however that means the support system outside of the home should be strong. Young women pertain sufficient knowledge of their reproductive systems, although side effects should not merely be rejected as adolescent turbulence without further investigation.

Women's research and health awareness is rising, but it does not look like equality is reached just yet. The health care systems and how they are funded do not seem to fit well with women's

more subjective pain (Hoffman & Tarzian, 2001) and the care model does not match women's needs. Women's health issues often have several symptoms, rather than just one, this may be a part of creating the image of unspecific conditions in women's health. If research can better explain the nature of the disease in women, it will likely help professionals understand the patient. Avoiding diagnostic uncertainty without having their symptoms accredited for (Lillrank, 2003).

In closing, as summarized by Alvergne & Tabor (2018) most previous biomedical studies have been centralised around women's reproductive function, which may risk reducing women's health to fertility and pregnancy needs. Thus a larger calling for attention to women's cardiovascular disease, cancer, autoimmune disease, diabetes and mental health. However, trade offs in these health investments should be avoided as well as the separation of reproductive health from women's general health. As viewed from an evolutionary perspective of natural selection, reproductivity is seen as the foundation of health. Further to continue research based on the findings that neuroendocrine and immunity are highly connected, in order to establish the importance of reproductive health as a foundation for female non-reproductive health (Alvergne & Tabor, 2018).

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