Sleep Matters - Your Academic Wake-up
Sleep Medicine Newsletter

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Welcome to the fourth volume of Sleep Matters. There are some changes – Sanofi will be taking over the sponsorship of this magazine. Thanks to them for allowing us to continue sending out information about sleep disorders to doctors across South Africa in this format. We will continue to bring you articles written by South African doctors on various sleep issues as well as case studies and snippets of international articles published on sleep disorders. Remember that there are also CPD points to be obtained by answering the questions posted on the website.

This issue is devoted to the topic of insomnia – firstly insomnia in menopausal women, often induced by life-saving surgical procedures and then in women of all ages. Women are more likely than men to suffer from insomnia for reasons unclear, although increased prevalence on anxiety and depression are given as possible reasons. Hormonal changes occurring during menopause and pregnancy also “help” the development of sleep disorders. Most research studies, particularly clinical trials, avoid using women due to the menstrual cycle which makes the timing of recordings tricky as the phase of menstrual cycle needs to be taken into account. Thus, despite having the highest prevalence of insomnia, women are less likely to be studied in treatment trials than men – interesting.

Once diagnosed the insomnia needs to be treated – medication or cognitive behavioural therapy? Knowing about the creation of the insomnia helps to understand which treatment method is appropriate. The evidence is clear that, in the chronic insomniac, cognitive behavioural therapy (CBT) is better than medications at sustained improvement in sleep patterns. So we present an article with ideas for CBT. Many doctors are wary of using CBT, partly due to the emphasis on long sessions and 8 sessions every two weeks. The average GP or even psychiatrist can’t spend such amounts of time. It is my personal experience that any information given to patients about how their sleep works as well as simple behavioural changes in sleep can bring about major improvements in sleep. Granted the first consultation takes time but after that the sessions can fit into standard consultations. Most of the cognitive work happens at home with the sleep diaries.

Hopefully this issue will go some way to giving more understanding of the origins of sleep problems in women as well as the long-term treatment. I hope you enjoy reading it and applying it in your practice.
Sleep disorders in women under 55 years of age following bilateral oophorectomy for gynaecological cancer

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Sleep disorders are one of the hallmarks of the menopause, with poor sleep quality reported more commonly in the perimenopause and postmenopause than by older premenopausal women.\(^{1-3}\) Even though the general consensus is that between 35 -50\(^{\circ}\) of menopausal women will volunteer some sleep disorder, compared to about 15\(^{\circ}\) of the general population,\(^{4,6}\) the clinical impression is that the problem is more prevalent amongst women who have had a bilateral oophorectomy, be it for benign disease or as part of her treatment for ovarian cancer.

The conventional climacteric symptoms that occur in naturally ageing women include hot flushes during the day, night sweats, sleep disorders and mood swings, with anxiety, depression, irritability and panic attacks being the most common.

The exact relationship between sleep disruption and the hot flush or low levels of estrogen, progestogens and androgens and high levels of gonadotropins (FSH and LH), which occur with the menopause, have yet to be clearly defined. Some studies of menopausal women with vasomotor symptoms, particularly with night sweats, report repeated awakenings, arousals and disruption of sleep architecture.\(^7\) Others have shown that severity of night time awakening was significantly associated with age, late menopausal transition, early postmenopausal stage and FSH levels, although severity of early morning awakening was not influenced by menopausal transition stages or FSH levels.\(^8\)

The literature is not consistent as another study found no differences in pre- and postmenopausal women on any objective or subjective sleep measure, performance test, or questionnaire measure.\(^9\) Few studies have specifically correlated these changes in women who are more than a few years after their menopause and hence, very little is known about the impact of very low steroid gonadal hormones and high levels of gonadotropins on sleep, which is the scenario in the older postmenopausal woman or the woman who has had a surgically induced menopause after a bilateral oophorectomy. Some recent data suggests that altered levels of both sex steroids and gonadotropins may contribute to sleep disturbance in older women and that higher body temperature, as a result of high LH levels, is associated with poorer sleep quality, even in women without vasomotor symptoms.\(^1\)

The impact of the menopausal symptoms on sleep may depend on the time of the night. Hot flushes in the second half of the night do not seem to trigger awakenings and arousals, whereas those in the first half of the night do. Rapid eye movement is more frequent during the second half of the night and this may suppress thermoregulation and hence the disruptive effects of the hot flushes.\(^1\)

In general, menopausal symptoms cause disruption of sleep, leading most commonly to insomnia and even though the definition of insomnia encompasses difficulty in initiating sleep, maintaining sleep, waking too early or that sleep is non-restorative or poor in quality, these parameters have not been specifically measured against intensity, frequency or duration of the acute vasomotor symptoms of menopause. Another important confounding factor is that the prevalence of primary sleep disorders, including apnoeas and periodic limb movements that fragment and disrupt sleep, is also known to increase with age and that perceptions of poor sleep in menopausal women may also reflect an age-related increase of the conditions.\(^1\)

Hence the clinical challenge to discern whether the increased prevalence of sleep disorders in menopausal women results from hormonal flux and the acknowledged dysregulation of the hypothalamic-pituitary-ovarian axis that appears to precipitate the menopausal transition or do they arise as a consequence of other morbidities which come about because of aging.\(^1\)

Receptors for estrogen, progesterone and testosterone are ubiquitous and are found throughout the brain of women and changes in all three hormones can produce changes in sleep. The impact of estrogen on sleep still remains unclear. In animals, estrogen suppresses REM sleep, but in humans it increases REM cycles. Estrogen also plays a role in norepinephrine, serotonin and acetylcholine metabolism which further confuses our understanding, as all these products in their own right will have an impact on sleep.

The presence of Estrogen has been shown to decrease sleep latency, decrease awakenings, increase total sleep time and decrease the number of cyclic spontaneous arousals. Some of
the disturbance in sleep may be due to the important role of estrogen in body temperature regulation, with low levels precipitating hot flushes characterised by increases in both peripheral and central temperature. LH receptors have also been identified in the human brain, including the hypothalamus and pineal gland. LH surges may reflect the severity and frequency of the hot flushes which may, in some way, influence sleep via thermoregulatory mechanism, be it through a central mechanism in the brain or via peripheral receptors in the vascular tree. LH surges have also been shown to influence synthesis of melatonin in rats. Progesterone also has profound effects on sleep. It has direct sedative qualities, is anxiolytic and a respiratory stimulant which has been used to treat mild obstructive sleep apnoea.

Testosterone has been less well studied in relation to sleep, although in animals, it tends to decrease REM sleep. In humans it seems to have only a minor impact on sleep, except in developing or worsening obstructive sleep apnoea.

There is a significant paucity, if any, of information pertaining to sleep disorders in women who have been treated for ovarian, endometrial and cervical cancer where bilateral oophorectomy is part of the routine treatment strategy. The bilateral oophorectomy is responsible for either inducing the menopause, which as a result, is likely to precipitate the menopausal symptoms, including sleep disorders, or because of a further decline in gonadal steroids, it leads to a further deterioration of the menopausal symptoms.

The acute symptoms of menopause are experienced by most women very soon after surgically induced menopause and although very little investigation has been conducted, anecdotal evidence suggests that the symptoms are more frequent and of greater intensity than those that occur in women who have had a spontaneous natural menopause. The rapid lowering of estrogen, progestogens, testosterone and androstenedione, with the accompanying rapid increase in gonadotropins, are the most plausible reasons for these presentations.

Strong correlation has been reported between cancer, cancer treatment options, adjuvant therapy (chemotherapy, irradiation, etc.) and the negative impact on sleep.

Corticotropin releasing hormone may affect several aspects of sleep, including depth of sleep, slow-wave sleep, REM sleep, awakenings and arousals. Although cancer related fatigue and sleep disorders are distinct conditions, they are closely linked in terms of prevalence, often occurring as part of a multisystem cluster and bringing into the picture the question of depression, pain and anxiety.

Of note is the fact that all the information pertaining to the impact of the menopause and all the other confounding factors described above on sleep is almost exclusively confined to patients with breast cancer, colorectal cancer and brain tumours with or without adjuvant therapy.

Women with gynaecological cancers will have a bilateral oophorectomy as part of their standard management if they have cancer of the ovary, endometrium and stage 1 cancer of the cervix. The reasons for the bilateral oophorectomy in these cancers are as follows:

- As part of the definitive treatment (cancer of ovary).
- Removal of the source of ongoing estrogen production which may precipitate metastases or recurrence of disease and is generally included as part of the treatment (cancer of endometrium).
- Removal of the ovaries because of possible secondary deposits in them from the primary cancer (cancer of cervix).
- Prophylactic removal of the ovaries in women above 50 years of age who are having surgical treatment for another gynaecological cancer so as to avoid possible development of ovarian cancer at a later date (cancer of cervix).
- Women who do not fall into the above mentioned groups, but who
have bilateral oophorectomy for benign ovarian disease, including extensive endometriosis, ovarian cysts, borderline ovarian tumours or women who are BRCA gene positive and have bilateral prophylactic oophorectomy as a disease preventative measure. The impact of bilateral oophorectomy in these patients obviously does not have the additional impact of the other cancer associated confounding factors on their sleep pattern.

There is no definable or apparent data in the English literature which has addressed sleep and sleep disturbances objectively and subjectively specifically in women who have had bilateral oophorectomy for gynaecological cancer. There is some information pertaining to women who have had bilateral oophorectomy for benign ovarian disease, but it is also particularly sparse.

References
Are there different types of insomnia that should be treated differently?

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Many medical students are told that insomnia is a symptom of something else — usually depression, anxiety or pain. Yet, while it is true that many insomniacs do have depression and anxiety, a sizeable percentage of them tell you they are not depressed or anxious about anything except the insomnia. So can insomnia be a symptom and a disorder on its own and do you treat them differently?

A look at the natural history of insomnia indicates that there are two types of insomnia and this implies two different types of treatment. There are times when insomnia is a symptom but it can also be a disorder without any apparent cause. The graph below is one that was first published in the 1970’s and still holds true today.

Everyone starts off (in stage 1) with predisposing factors for insomnia which are inbuilt and thus don’t change over time. These are genetic factors which will influence the duration of your sleep, the depth of sleep and the likelihood of your sleep being disrupted by stressful events. Some people respond to stressful situations with insomnia and others respond by sleeping more — different for different people. These predisposing factors determine where you start on the “intensity of insomnia” scale. In this diagram the person starts at a score of 25 which is a value too low to produce clinical insomnia. Everyone then is always in stage 1 of insomnia — just some people are higher than others.

Stage 2 represents a point where there is clinical insomnia, here reflected as a score of 80 points. The change is usually caused by a stressful or medical event which makes falling sleep physiologically difficult — the precipitating factor. The stress may come from a death in the family, divorce, business stress etc. The medical situation could be pain, from a traumatic event or medical disorder such as a myocardial infarction, any medical disease, such as asthma which is worse during the night, or environmental factors such as significant noise or temperature changes. Primary psychiatric disorders may be a common precipitating event for sleep disorders.

During this period the patient usually accepts that the insomnia is caused by the underlying events but they will be frustrated by the lack of sleep. As the insomnia seems justified very few people in this phase come for treatment. In fact most research shows that no matter what the cause of insomnia that less than 20% of people who complain about a sleep problem or insomnia ever come for treatment of that disorder.

![The natural history of insomnia graph](image-url)
It is, however, important to treat the sleeplessness at this stage. The best way to treat a secondary acute insomnia is probably with medication although very little research has been done. A course of hypnotics, whether benzodiazepenes or Z-drugs, for 7 nights will make a significant difference – both to the ability to deal with the stressor and to prevent the patient moving from stage 2 to stage 3 insomnia.

If the patients are suffering a significant life event and not sleeping then their ability to deal with that event during the day is compromised. The cost of not treating this stage of insomnia may be significant. Thus all patients undergoing significant life events should be asked how they are sleeping and, if badly, offered a short course of medication to help them sleep better. These patients should be informed that 7 nights of hypnotics will not lead to long term dependence on the medication but may prevent long term insomnia.

Without treatment, the acute insomniac gets more desperate with each night of bad sleep. The anxiety shifts from the stressor itself to anxiety about sleep. As the poor sleep continues they lose confidence in their ability to fall asleep and then put measures in to try to sleep. Insomniacs then add measures to induce relaxation such as chamomile tea, lavender baths and relaxation exercises. Sometimes these work but in most insomniacs they often don’t solve the problem. These thought processes and behaviours then become the perpetuating factors (stage 3) which can maintain insomnia for many years.

In stage 3, many patients will tell their doctors that their sleep problem started with an event which is not bothering them any more but the sleep problem persists.

Once in stage 3, the impact of the precipitating factor can fade away but the perpetuating factors remain. At this point the insomnia is no longer a symptom of something else but a self-perpetuating disorder on its own. Thus many patients will tell their doctors that their sleep problem started with an event which is not bothering them any more but the sleep problem persists.

Using long-term medication for the insomnia at this stage is guaranteed to produce dependence even with safer drugs because if the insomniac does not take their medication they get anxious about falling asleep and they are straight back in stage 3. Patients will swear that they only need ¼ tablet to get to sleep and, while we scoff at the efficacy of that amount of medication, taking that small amount causes a big reduction in anxiety – quite a big placebo effect.

It is at this stage that cognitive behavioural therapy is the only method to get long lasting changes in attitudes to sleep (see article in this issue). CBT can remove the perpetuating factors and bring back the confidence of being able to fall asleep.

Thus insomnia can be both a symptom of another disorder, in stage 2 with precipitating factors, or a disorder that is self-perpetuating, stage 3, with the development of perpetuating psychological beliefs and attitudes. Management should take account of the phase the patients is in and would probably be different in the two phases.

References
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Not sleeping enough and not sleeping well are all too familiar conditions in the modern world. However, as much as we have come to accept this state of affairs and even make light of it, (while wishing we had more hours and quality of sleep) there is quite a price to pay. Chronic sleep deprivation significantly affects your health, performance, safety and even finances. Academic journals, sleep clinics and many studies attest to this and common sense must agree. Poor sleep is not good for you and has knock-on effects the next day, the next night, the day after and so on.

There are many causes of sleep disturbance. The stresses and strains of daily life often interfere with our ability to sleep well and we all too often trade sleep for more work or more play. Sometimes we have medical or psychological conditions that disrupt our sleep, such as in the case of Clinical Depression or Generalised Anxiety where there could be initial insomnia (difficulty falling asleep), frequent waking or terminal insomnia (waking in the early hours and being unable to return to sleep).

Even after a psychiatric condition has been treated, pharmacologically and/or with psychotherapy, poor sleep habits can remain. There could be a vicious cycle of anticipatory anxiety, where the person begins thinking and obsessing about whether they will sleep that night or not, or there could be poor sleep habits which have become habitual. In both cases, cognitive behaviour therapy (CBT) is an effective approach in managing and altering destructive habits.

Before treating sleep disturbance with CBT, however, it is critical to realise that sleep deprivation is possibly due to an unrecognised sleep disorder. If an individual has a good night’s sleep most of the time, yet wakes feeling unrefreshed and sleepy through the day, especially in the absence of a known psychological/psychiatric condition, they may not actually realise that they have sleep deprivation or an undiagnosed sleep disorder. Instead of automatically blaming excessive daytime sleepiness on “all the demands of being a working parent” or “I have always been this sleepy during the day”, it is always advised to conduct a full medical and possibly psychiatric evaluation to establish whether poor sleep is a symptom of a health (e.g. narcolepsy, sleep apnoea) or psychiatric (e.g. anxiety, depression) condition, or in fact a chronic bad habit.

This article provides a summary of basic sleep concepts, some key myths which patients may present with and an overview of CBT techniques for dealing with sleep disturbance. CBT is very effective when poor sleep has become a bad habit, often as a result of a period of late nights (due to studying, work deadlines, a new baby). The techniques also help to normalise sleep when sleep disturbance has been part of an anxiety or depressive condition which has been treated, but this symptom (habit) has remained.

So why is sleep so important?
Cognitive restructuring is half of the CBT process of change (behavioural techniques are the subject of a subsequent article). Psycho-education is one cognitive means of altering perspectives and beliefs about a habit. When the person understands the problem, as well as how their thinking and behaviours maintain the negative habits, they are better equipped to change their responses. An overview of the importance of sleep and information about how sleep works, is a good starting point. Typical myths about sleep should also be explored and corrected and I will present common myths versus facts, below.

Overview
Although we naturally think of sleep as a time of rest and recovery from the stresses of everyday life, research is revealing that sleep is a dynamic activity, during which many processes vital to health and well-being take place. New evidence shows that sleep is essential for helping maintain mood, memory and cognitive performance. It also plays a pivotal role in the normal function of the endocrine and immune systems. In fact, studies show a growing link between sleep duration and a variety of serious health problems, including obesity, diabetes, hypertension and depression. In addition to impact on health, sleep deprivation is strongly associated with car accidents, occupational injuries, medical expenses, property and environmental damage and lowered productivity - all having a detrimental effect on finances as well.

The process of sleep
Generally we think of sleep as a shutting down period, but it is actually an active physiological process. While metabolism does slow down during sleep, the major organs and regulatory systems (endocrine, circulatory, respiratory and digestive) continue to function. Sleep can also be divided into two main types: rapid eye movement sleep (REM) and non-REM (NREM) sleep. There are distinct and different brain activity patterns with each type of sleep.

Sleep myths and facts
Sleep researchers agree that adults generally need between 7 and 9 hours of sleep per night, teenagers need around 9.5 hours and babies need around 16 hours per day. However, the quality of sleep is as important as the quantity and for sleep to be good quality it needs the right combination of REM and NREM sleep, as well as shallow and deep sleep. Sleep loss results in the accumulation of a sleep debt, which must eventually be repaid.

Poor sleep habits tend to be a result of incorrect beliefs around sleep. Common sleep myths and sleep facts we should all know about, follow.
A study by the National Sleep Foundation (US) revealed that people who got only 6 hours or less of sleep during the week, but then passed out for 10 hours or more on both Saturday and Sunday, still showed strong signs of sleep deprivation - especially men. Perhaps even more noteworthy was the fact that they didn’t just feel groggy, but that they showed actual medical markers of lack of sleep, like bodily inflammation.

Myth: “I can make up for lost sleep on the weekend.”
Fact: Many of us have become accustomed to feeling tired and not getting enough sleep during the work week, only to indulge in long lie-ins on the weekend. Unfortunately, though, sleep debt isn’t so easily repaid.

Myth: “I’m okay with less sleep, because I don’t feel sleepy.”
Fact: Some lucky people are hardwired to need shockingly little sleep, but they are a very small minority. In fact, most people seem to misjudge the fact that they’re feeling tired - maybe even exhausted. A 2003 study of chronically sleep-deprived adults revealed some interesting sleep facts: most short-sleepers had significant cognitive deficits when compared with well-rested peers - yet they didn’t even realise it.

Myth: “The only drawback to less sleep is that I’m feeling tired.”
Fact: There’s a lot of evidence that chronic sleeplessness impacts your physical, emotional and mental well-being. In a recent symposium on new sleep research, doctors found lack of sleep was linked to higher risks of everything from obesity to depression. And it’s not just adults who need their nightly quota. In children, sleep deprivation is linked to worsening of ADHD symptoms.

Myth: “If I can’t sleep, I can just get something at the pharmacy; over the counter (OTC’s) are safer than prescription sleeping pills.”
Fact: It is important to discuss all of your health conditions with your doctor, especially if you’ve been experiencing symptoms of insomnia for more than a month. OTC sleep aids may be appropriate, but it’s wiser to discuss any treatment options with your healthcare professional before you self-medicate. Common OTC medications used as sleep aids may contain ingredients such as antihistamines and/or pain relievers which you may not need and also have side-effects. A personalised treatment plan including lifestyle changes and sleep habits to address your insomnia or other sleep problems and using the OTC’s as part of this instead of the only sleep solution will have longer term benefits.

Myth: “I can have alcohol or wine with (or instead of) my sleep aid, it will actually help me get to sleep faster so it’s a good thing”.
Fact: Some people feel that alcohol is a sleep aid on its own. However, while alcohol may calm you and speed the onset of sleep, it actually increases the number of times you awaken during the night.

Sleep medications should not be used with alcohol or other drugs. Always follow your healthcare professional’s instructions about how to take, when to take and how long to take sleep aids.

Myth: “Exercising before bed will make me tired and help me sleep”
Fact: Exercise can be helpful for good sleep, especially when done regularly in the morning or afternoon and not too close to bedtime.

If you don’t exercise regularly, add good sleep to a long list of reasons why you should start. However, sleep experts advise that you avoid strenuous exercise right before sleep and even up to three hours before bedtime. This is because exercise has an alerting effect physiologically and raises your body temperature. This rise leads to a corresponding fall in temperature five to six hours later, which makes sleep easier then. If you’ve been exercising close to bedtime and having trouble falling or staying asleep, try to arrange your workout for earlier in the day.

Myth: “Watching TV or working on my laptop in bed helps me wind down and fall asleep”.
Fact: Doing work, watching TV and using the computer or other ‘screens’, both close to bedtime and especially in the bedroom, hinders quality sleep. Violent shows, news reports and stories before bedtime can be agitating and all of these activities are stimulating for the brain, inputting a lot of information which must be processed. The sleep environment and especially the bed itself, should be used only for sleep and sex.

Myth: “If I mostly fall asleep immediately on getting into bed, I am a healthy sleeper.”
Fact: Anything less than 5 minutes to fall asleep at night means you are actually sleep deprived. The ideal is between 10 and 15 minutes, meaning you are still tired enough to sleep deeply but not so exhausted you feel sleepy during the day.

Myth: “Sleep is not important. I can just get by on a few hours like I always have.”
Fact: Sleep is actually vital to our health and wellbeing and is just as important as diet and exercise. Research shows that all mammals need sleep. Sleep regulates mood and is related to learning and memory functions. Not only will getting enough sleep help you learn a new skill, stay on a task or be productive, it may also be a critical factor in your health, weight and energy level.

Although individual needs may vary, adults typically need between 7 to 9 hours of sleep per night. It is difficult to make up for lost sleep because each time you don’t get enough sleep, you add to your sleep debt (the accumulated sleep that is lost due to poor sleep habits, sickness, awakenings due to environmental factors or other causes.) As a result, the sleep debt may make you feel sleepier and less alert over time.

These are just some of the important myths and facts about sleep which have been agreed on by researchers around the globe.

A final word
Despite the fact that at least 40 million Americans reported having sleep problems, more than 60 percent of adults had never been asked the quality of their sleep by a physician and fewer than 20 percent ever initiated a discussion about it. Clearly, sleep’s impact on health and wellbeing is under-recognised. But the growing body of knowledge about the complex structure, function, and mechanisms of sleep, as well as the consequences when sleep is lost or disturbed, should serve as a wake-up call for making sleep a public health priority.
The gender disparity in insomnia: Is it a useful consideration?

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**Women chatting in a hairdresser in South Africa say the following about sleep:**

36-year old (white): “I am a great sleeper”, in fact I sleep too much if I am not committed to time frames. A bad night would be because I worry that my husband is out with friends...his safety...drinking.

35-year old (black): “I am a perfect sleeper, except when I watch a movie too late or when I was pregnant or my children were little. Sometimes I must wake up for a snack.

61-year old (white): “I am a perfect sleeper, but stress and pain sometimes wake me. I always get up to the toilet at 3 a.m.”.

60-year old (white): “I am a poor sleeper since the age 17 but I don’t care sometimes I just get up and work...other times I am anxious. I simply know when I am not going to sleep. I take sleeping tablets every night. I was a shift worker. Sleep wasn’t in my life. Sometimes it’s environmental. I have been terrified before but now I am in a safe place.”

51-year old (white): “I have been a good sleeper all my life but I can’t go to bed too early, I have stuff to do. My only problems are needing to do a thousand wees. I nap a lot but I must have absolute dark.”

46-year old (black): “I am a good sleeper always. I sleep and wake the same time every day. I worry about my family and money – this keeps me awake.”

Insomnia is defined as a difficulty falling asleep, fragmented sleep, early morning awakenings, failure to get back to sleep if woken up and waking unrefreshed at least a few times a week.

Daytime consequences may be fatigue, emotional distress, impaired mental ability, poor concentration and memory and emotionality. It is the most common sleep disorder and the most prevalent of mental disorders. Duration of the complaints quantify an acute (1 month or less) or chronic (6 months or more) problem.

When does lack of sleep become insomnia? When do patients effectively cross the threshold to be classified as a disorder needing treatment?

Clinicians frequently rely on presenting symptoms in relation to duration, frequency, severity and daytime impairments, including associated features and markers of distress surrounding the sleep loss. Moreover, triggering factors and circumstances in the context of the patient’s life must be assessed. Once a patient has been identified as suffering from insomnia multiple factors have to be considered before one feels reliably grounded in an appropriate diagnosis before refining treatment protocols.

There is, however, confusion as to the precise diagnosis. Insomnia is often referred to as: “adjustment insomnia, stress-related insomnia, transient psychophysiological insomnia or short-term insomnia”.

There are three diagnostic systems, the International Classification of Disease (ICD), the soon to be published Diagnostic and Statistical Manual of Mental disorders (DSM-5) and the International Classification of Sleep Disorders (ICSD-2), to aid the diagnostic process. The DSM-5 negates the notion of secondary insomnia referring rather to a diagnosis of an Insomnia Disorder or Primary Insomnia, which includes insomnia due to medical conditions, mental disorders or other sleep disorders. The ICD-2 is more focussed on sleep itself and usefully divides insomnia into type. The ICD-11 is being developed and for the first time a separate chapter for sleep disorders is being developed.

Prevalence rates in the general population range from 4-48%, depending on definitions and population types used (about a third of the population). Increasing age also influenced higher rates. Meta-analysis cite women having a higher risk ratio than men across all ages (RR, 1.4). Women are about twice as likely as men to report insomnia.

Dr Joyce Walsleben suggests that “women are the most sleep deprived creatures on earth”. The “burden of insomnia” is shouldered by women with some studies indicating that women suffer more from insomnia than men by 40%.

Whilst the structure of women’s sleep is fundamentally similar to men, there are some specific differences, which should effectively advantage them. Women have more slow-wave sleep, the deepest, most restorative level of sleep (from 6-months old) and fewer arousals at night.

Women’s sleep systems appear to age at a slower pace than men. The quality of slow-wave sleep starts to decline in men during their twenties. However, the decline in women begins in their thirties and progresses more slowly. Laboratory studies suggest that the sleep of women in their fifties resembles that of thirty-year old men.

The total sleep time of women diminishes into their forties and fifties.
in the journey towards menopause. The number of sleep stage changes increase and more awakenings occur. Despite all this information some studies report no reliable differences in sleep parameters such as sleep onset latency or total sleep time of men and women diagnosed with insomnia and yet women present with more distress.

Hormonal influences
There are hormonal reasons why women sleep differently to men. Whilst the mechanisms are not clear at this stage, we know that the same hormones regulating menstrual cycles influence sleep staging. As oestrogen rises in the follicular phase, women experience an increase in the amount of stage-2 sleep, sleep spindles and REM sleep.

During the luteal phase progesterone rises, increasing body temperature and blunts circadian rhythm. Pre-menstrual syndrome caused up to two days disrupted sleep due to bloating and breast pain. Whilst these hormonal influences are strongly supported, particularly in menopause, it is likely that some other unmeasured factor is also at play. Subjectively, women with PMS report a significantly poorer sleep quality in the luteal phase however objective sleep measures do not reflect this symptom expression. Pregnancy, child birth and child rearing all have the potential to disrupt sleep.

Fluctuating hormones may also contribute to the increasing propensity for women to report more mental health disorders as a result of different coping styles. Women are suggested to be more likely than men to ruminate on their problem whilst men may distract themselves or use substances to cope. Furthermore, women may be exposed to more stressful events as precipitants to develop an insomnia disorder.

Psychiatric factors
Psychiatric explanations reveal a gender variation by type of disorder - women seem to be more likely to suffer from affective and neurotic disorders such as depression and anxiety whereas men are more likely to suffer from personality disorders. Most of the gender disparity can be explained by accounting for a lifetime history of a mental health condition.

Sociological explanations have also been suggested to explain the gender inequality in insomnia. The many obligations between work and family responsibilities may increase stress because women typically have a greater share of time consuming household responsibilities such as child-rearing, cleaning, cooking, washing and food preparation. However, studies attempting to examine this “social role hypothesis” have not been convincing. There are not many studies exploring sociodemographic, behavioural and mental health variables. A concept of “Neighbourhood effects” was reported in one study to affect sleep duration while another study showed that neighbourhood socio-economic factors did not explain the gender difference.

Sociological differences
One wonders how profound this neighbourhood dynamic, or the entire sociological hypothesis in insomnia, is in South Africa. It is certainly a potential research topic. Firstly, safety issues are frequently cited as the reason for poor initiation and maintenance of sleep. Sadly there is enough evidence to support the discourse of “an unsafe place to sleep”/“feeling terrified”.

Hypervigilance, startle reflex and persistent central nervous system arousal are portrayed in social narratives and to some extent invade the social fabric of this country. Situational and personal circumstances probably play a significant role in the development of acute insomnia.

Single women also take on the role of protector and provider elevating their sense of responsibility which may precipitate anxiety. Interestingly, the introductory vignette of this paper alludes to this dynamic, yet most women are “good” or “perfect” sleepers. Even more surprising is the fact that the black women interviewed were all from marginalised neighbourhoods and expressed no safety fears.

This paper explores gender issues which may affect the diagnostic approach to insomnia and illuminates a broader consideration when working with women. The gender disparity does indeed provide special consideration. If there are clear differences in the background and reasons for development of insomnia this strongly suggests that treatment protocols for insomnia should also differ in relation to these distinct differences.

References