Sleep Health

Session #1 within "Mental Well-being" Unit

VETERANS

ONWARD

Training Materials:

- Whiteboard and pens or flipchart and pens.
- Paper and pen for all participants.
- Access for participants to websites:

  https://www.nhs.uk/live-well/sleep-and-tiredness/how-to-get-to-sleep/?tabname=sleep-tips

  https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/sleep/art-20048379

- Print outs or links emailed to Assessment Tool resources:
    - Print out of figure 1 for each participant (SATED scale).
    - Anxiety-and-preoccupation-about-sleep-questionnaire which can be accessed at https://www.midss.org/content/anxiety-and-preoccupation-about-sleep-questionnaire
    - SleepMed Insomnia Index (SMII) Questionnaire which can be accessed at https://secure.headwaytechnology.com/www2.sleepmedinc.com/page/2246

- Print out of Figure 4 for each participant.

Learning Objectives:

1. To define sleep health and identify a range of sleep related issues.
2. Describe the potential impact of poor sleep health.
3. List and describe the factors that contribute to and hinder sleep hygiene.
4. Complete a self-assessment and reflect upon your own sleep patterns.
5. Formulate personalised strategy for increased sleep health and sleep hygiene.

Training Script:

Hello everyone, how are you today? My name is _____. I am going to be your tutor today for this training module on Sleep Health. It is the first session within the unit called "Mental Wellbeing". This module will take between 90 and 120 minutes to complete.

So, today's learning objectives. By the end of this module, my aim is that you will be able to:

1. Define sleep health and identify a range of sleep related issues.
2. Describe the potential impact of poor sleep health.
3. List and describe the factors that contribute to and hinder sleep hygiene.
4. Complete a self-assessment and reflect upon your own sleep patterns.
5. Formulate personalised strategy for increased sleep health and sleep hygiene.

Let's make a start on learning objective **1: Define sleep health and identify a range of sleep related issues.** As we do so, we will also touch on issues and factors that also cover learning objectives 2 and 3:

2. Describe the potential impact of poor sleep health.

3. List and describe the factors that contribute to and hinder sleep hygiene.

Task:

So - how did you sleep last night? Consider that question - and give yourself a score between 1 - 10. Where 1 represents a terrible night's sleep, and 10 represents a really satisfying and restful night's sleep. Please note - whilst I will speak about a "good night's sleep" or "how did you sleep last night", I recognise that some work patterns means that a person's opportunity for a stretch of restful sleep occurs during the day. That's something we will explore during the session today. For now, think about your sleep pattern when you last tried to have a stretch of restful sleep and give yourself a score between 1 - 10.

Jot that down on your paper.

[Allow 1 minute for participants to think and note their ideas].

Now, consider what factors influenced your sleep last night. What helped you to sleep well and what hindered that process. Again jot these down on your paper.

[Allow 3 minutes for participants to think and note their ideas].

I'd like us to begin to build up a picture of what helps and hinders our sleep, so we can begin to identify factors that contribute to sleep related issues. Let's make a list of the ideas we have so far.

[On the board, make 2 lists: "Help" and "Hinder". Ask participants to name the things they identified from their own sleep last night that either helped or hindered].

So - we have a list of sleep related issues there.

What do we mean by sleep health? We have already identified some sleep problems people can have - things that hinder them in getting good restful sleep. Sleep health means more than simply the absence of sleep problems. Sleep health refers to sleep patterns that support wellness, performance, and adaptation[1].   Good sleep is essential to good health. That is recognized by the Centers for Disease Control and Prevention Sleep and Sleep Disorders Team who outline that their mission statement is:

 "To raise awareness about the problem of sleep insufficiency and sleep disorders and the importance of sleep health for the nation's overall health"[2].

Good quality sleep has been described as:

"A reoccurring, reversible neurobiological state of relative perceptual disengagement from an unresponsiveness to the environment"[3].

This quote, simply refers to sleep being regular and involving us taking a break and a rest, or disengaging from the environment. This rest allows for our body to return to a sense of balance and for our brain to optimise our physiology, our behaviour and our health[4]. Recent findings suggest that sleep plays a housekeeping role that removes toxins in your brain that build up while you are awake[5].   Good sleep health means reduced risk of negative health outcomes and increased likelihood of good health and wellbeing.

When we factor in that, ideally, we spend one-third of our life sleeping, then it makes sense to consider what quality sleep is. Quality sleep - and getting enough of it at the right times - is as essential to survival as food and water. Without sleep you can't form

[1] Buysse D. J. (2014). Sleep health: can we define it? Does it matter?. *Sleep*, *37*(1), 9–17. https://doi.org/10.5665/sleep.3298

[2] https://www.cdc.gov/sleep/about_us.html

[3] Carskadon MA, Dement WC. Normal human sleep: an overview. In: Kryger MH, Roth T, Dement WC, editors. *Principles and practice of sleep medicine*. 4th ed. Philadelphia, PA: Elsevier Saunders; 2005. pp. 13–23.

[4] National Institute of Mental Health. Arousal and Regulatory Systems: Workshop Proceedings, 2013

[5] https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Understanding-Sleep

or maintain the pathways in your brain that let you learn and create new memories, and it's harder to concentrate and respond quickly[6].

There are different types of sleep. It is important to health that we enter into deep sleep to gain the maximum benefit from sleep. Simply speaking, there are two basic types of sleep: rapid eye movement (REM) sleep and non-REM sleep (which has three different stages). We cycle through these different stages when we sleep.   Healthy sleep includes four to five cycles for every eight hours of sleep. These are described below:

Stage 1 non-REM sleep is the changeover from wakefulness to sleep. During this short period (lasting several minutes) of relatively light sleep, your heartbeat, breathing, and eye movements slow, and your muscles relax with occasional twitches. Your brain waves begin to slow from their daytime wakefulness patterns.

Stage 2 non-REM sleep is a period of light sleep before you enter deeper sleep. Your heartbeat and breathing slow, and muscles relax even further. Your body temperature drops and eye movements stop. Brain wave activity slows but is marked by brief bursts of electrical activity. You spend more of your repeated sleep cycles in stage 2 sleep than in other sleep stages.

Stage 3 non-REM sleep is the period of deep sleep that you need to feel refreshed in the morning. It occurs in longer periods during the first half of the night. Your heartbeat and breathing slow to their lowest levels during sleep. Your muscles are relaxed and it may be difficult to awaken you. Brain waves become even slower.

REM sleep first occurs about 90 minutes after falling asleep. Your eyes move rapidly from side to side behind closed eyelids. Mixed frequency brain wave activity becomes closer to that seen in wakefulness. Your breathing becomes faster and irregular, and your heart rate and blood pressure increase to near waking levels.   Most of your

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[6] https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Understanding-Sleep

dreaming occurs during REM sleep, although some can also occur in non-REM sleep. Your arm and leg muscles become temporarily paralyzed, which prevents you from acting out your dreams. As you age, you sleep less of your time in REM sleep. Memory consolidation most likely requires both non-REM and REM sleep[7].

It is also worth noting here that there are many "sleep aids" that we can use to support sleep. These may seem to be effective in the short-term in that they can help us get to sleep. For example, alcohol is a sedative and can initially help us fall asleep. However, drinking alcohol before bed can add to the suppression of REM sleep during the first two cycles. This decreases the amount of deep sleep we have and affects overall sleep quality, which can result in shorter sleep duration and more sleep disruptions. Other short-term sleep aids which can, over the long-term, interfere with good quality sleep and sleep health include use of recreational drugs such as cannabis, or the use of prescribed medication including valium/xanax. It is important to discuss any skleep concerns with medical professionals.

Sleep health can be defined as sleep in which we wake up feeling "SATED". In this, SATED combines both the dictionary definition of the word "sated", as "satisfied". SATED is also an acronym which alerts us to 5 dimensions of good sleep health. These are:

1. **S**atisfaction with sleep;
2. **A**lertness during waking hours;
3. **T**iming of sleep;
4. Sleep **E**fficiency;
5. Sleep **D**uration.

The SATED scale, developed by University of Pittsburgh researchers in 2013, has recently been recognised as a helpful and reliable tool to measure person's sleep health[8].   Figure 1 shows the SATED scale. It is a self-report scale. Participants simply

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[7] https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Understanding-Sleep
[8] Benítez, I., Roure, N., Pinilla, L., Sapiña-Beltran, E., Buysse, D. J., Barbé, F., & de Batlle, J. (2020). Validation of the Satisfaction, Alertness, Timing, Efficiency and Duration (SATED) Questionnaire for Sleep

reflect upon their own sleep patterns and identify their own score. In this way, it is similar to the question I asked at the beginning of the session. We will now use this scale to give us more data and to develop our levels of self-awareness about our sleep health in terms of the 5 SATED measures.

Task:

[Invite participants to use Figure 1 to rate their own sleep health using the 5 SATED measures included in figure 1. It may be helpful to provide participants with a print out of figure 1 each].

Health Measurement. A*nnals of the American Thoracic Society,* 17(3), 338–343. https://doi.org/10.1513/AnnalsATS.201908-628OC

Figure 1: SATED self-report sleep health scale.

		Rarely/ Never (0)	Sometimes (1)	Usually/ Always (2)
Satisfaction	Are you satisfied with your sleep?			
Alertness	Do you stay awake all day without dozing?			
Timing	Are you asleep (or trying to sleep) between 2:00 a.m. and 4:00 a.m.?			
Efficiency	Do you spend less than 30 minutes awake at night? (This includes the time it takes to fall asleep and awakenings from sleep.)			
Duration	Do you sleep between 6 and 8 hours per day?			

Total for all for items ranges from 0-10

0=Poor Sleep Health   Good Sleep Health=10

Having defined sleep health and identified a range of sleep related issues, we are ready to make further progress on learning objectives 2:

2. Describe the potential impact of poor sleep health.

We know that we all need sleep. For anyone who has gone more than 24 hours without sleep, you will know how your sense of health and wellbeing begins to suffer without

adequate sleep. There have been various Media reports of people dying after a lack of sleep as a result of online gaming. For example, a case of a Chinese man in 2011[9], another case in 2015 in Taiwan[10] and also a Thai teenager who died in 2019[11].

Indeed, a great deal of scientific research has provided data on how sleep and sleep related issues can impact physical and mental health. Figure 2 provides a helpful table, cited in an article published in 2014 in the Journal, *Sleep*[12], which outlines the different health conditions associated with sleep problems.

Task:

[Show participants figure 2. They do not need to examine the table in great detail. It will, however, be helpful to name and identify some of the physical and mental health issues connected with sleep issues. Allow 5-10 minutes for participants to study and comment upon, as part of a facilitated group discussion, what they notice from figure 1].

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[9] https://www.bbc.co.uk/news/world-asia-pacific-12541769
[10] https://edition.cnn.com/2015/01/19/world/taiwan-gamer-death/index.html
[11] https://nypost.com/2019/11/05/teen-video-game-addict-dies-after-marathon-session-report/
[12] Buysse D. J. (2014). Sleep health: can we define it? Does it matter?. *Sleep*, *37*(1), 9–17. https://doi.org/10.5665/sleep.3298

Figure 2: Dimensions of sleep and potential health outcomes*:

Sleep Measure	Associated Health Outcomes	Sample References
Satisfaction/Quality	Mortality	Kojima et al., 2000[65]; Elder et al., 2008[66]; Rod et al., 2011[67]; Hublin et al., 2011[68]
	Metabolic Syndrome	Jennings et al., 2009[69]; Troxel et al., 2010[70]
	Diabetes/impaired glucose metabolism	Vgontzas et al., 2009[71]; Haseli-Mashhadi et al., 2009[72]; Knutson et al., 2011[73]; Pyykkonen et al., 2012[74]
	Hypertension	Vgontzas et al., 2009[75]; Fiorentini et al., 2007[76]; Rod et al., 2011[67]
	Coronary heart disease	Laugsand et al., 2011[77]; Hoevenaar-Blom, 2011[78]; Appelhans, 2013[79]
	Depression	Baglioni, 2011[80]
Alertness/Sleepiness/ Napping	Mortality	Hays, 1996[81]; Newman et al., 2000[82]
	Coronary heart disease	Newman et al., 2000[82]; Sabanayagam et al., 2011[83]
	Impaired neurobehavioral performance	Dinges et al., 1997[84]
Timing (e.g., shift work, chronotype)	Mortality	Åkerstedt et al., 2004[85]
	Coronary heart disease	Kawachi et al., 1995[86]; Frost et al., 2009[87]
	Metabolic syndrome	Karlsson et al., 2001[88]; Lin et al., 2009[89]; Pietroisti et al., 2010[90]
	Diabetes/impaired glucose metabolism	Pan et al., 2011[91]; Buxton et al., 2012[92]; Reutrakul et al., 2013[93]
	Accidents	Folkark and Åkerstedt, 2004[94]; Barger et al., 2005[95]
Efficiency (sleep latency, wake after sleep onset)	Mortality	Newman et al., 2000[82]; Nilsson et al., 2001[96]; Mallon et al., 2002[97]; Dew et al., 2003[98]
	Metabolic syndrome	Troxel et al., 2010[70]
	Diabetes/impaired glucose metabolism	Cappuccio et al., 2010[99]; Engeda et al., 2013[100]; Kawakami et al., 2004[101]; Knutson et al., 2011[73]; Lou, 2012[102]
	Hypertension	Vgontzas et al., 2009[75]; Javaher et al., 2008[103]; Phillips and Mannino, 2007[104]
	Coronary heart disease	Laugsand et al., 2011[77]; Grandner et al., 2012[105]
	Depression	Baglioni et al., 2011[80]
Duration	Mortality	Wingard and Berkman, 1983[106]; Kripke et al., 2002[107]; Hublin et al., 2007[108]; Youngstedt et al., 2004[109]
	Obesity	Gangwisch et al., 2005[110]; Cappuccio et al., 2008[111]; Hasler et al., 2004[112]; Buxton et al., 2010[113]
	Metabolic Syndrome	Hall et al., 2008[114]
	Diabetes	Ayas et al., 2003[115]; Gottlieb et al., 2005[116]; Yaggi et al., 2006[117]
	Hypertension	Gottleib et al., 2006[118]; Gangwisch et al., 2006[119]; Cappuccio et al., 2007[120]; Stranges et al., 2010[121]
	Coronary heart disease	Mallon et al., 2002[97]; Ayas et al., 2003[122]; Hoevenaar-Blom et al., 2011[78]
	Impaired neurobehavioral performance	Van Dongen et al., 2003[123]; Van Dongen et al., 2004[124]; Belenky et al., 2003[125]

*Cited references are intended as examples of the associations described; they are not intended to represent a comprehensive list. In some cases, the references support the observed associations only in some of the analyses or subsamples examined.

Figure 2 is helpful, too, in that it also lists 5 ways of measuring sleep health that we have already covered using the SATED acronym and questionnaire. These are listed in the first column of the table in figure 2.

Having recognised the potential impact of poor sleep health, we are ready to make progress with learning objective 3:

3. List and describe the factors that contribute to and hinder sleep hygiene.

For this, I'd like to share with you 2 links that contain some accessible and helpful information about factors that contribute to and hinder sleep hygiene. We have already mentioned some ideas, including avoiding the use of short-term sleep aids that can interfere with deep sleep cycles in the longer term. By sleep hygiene we mean things we do to support healthy sleep patterns. Looking after our wellbeing by looking after the factors we can influence that impact sleep.

https://www.nhs.uk/live-well/sleep-and-tiredness/how-to-get-to-sleep/?tabname=sleep-tips

https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/sleep/art-20048379

<u>**Task:**</u>

Using at least one of these resources, I'd like you to identify at least 5 things that can contribute to sleep hygiene and a further 5 things that can hinder sleep hygiene. We already made a start on that with our lists we completed near the beginning of our session today. However, both of these resources give plenty of helpful information to expand on what we have already covered.

[Allow participants 10 minutes to look at the resources and to complete their 5 points. Following this, facilitate a brief discussion about what has emerged from this task. During this discussion, ensure key points are identified (see figure 3):

Figure 3: Key Points to cover regarding what helps and hinders sleep health.

Help	Hinder
Exercise regularly	Drink too much caffeine, alcohol or use of other drugs.
Keep the bedroom for sex and sleep only	Ignoring worries and taking no action with problems and daily concerns
Sleep at regular times as part of a sleep schedule	Heavy meal before sleep
Unwind and relax before bed	Uncomfortable sleep environment
Keep a sleep diary to identify patterns	Gadgets and electronics in the bedroom

Having listed and described the factors that contribute to and hinder sleep hygiene, we are ready to progress onto learning objective 4:

4. Complete a self-assessment and reflect upon your own sleep patterns.

We've been working on that already throughout our session, and I hope you already have a good sense of your own sleep health and sleep patterns, in relation to the SATED categories and with what personally helps and hinders your sleep quality and quantity.   There are two more assessment tools that can be of use here, and I'd like to offer you a chance to complete at least one of these. These tools are:

- The Anxiety-and-preoccupation-about-sleep-questionnaire
- SleepMed Insomnia Index (SMII) Questionnaire w

Task:

[Provide students with links or copies of two questionnaires to choose from.

Allow 10 mins for participants to access and complete questionnaire(s). Following this, facilitate a 5 minute group discussion about what they learnt from the questionnaire(s)].

It is really important to note here that, as sleep related issues can contribute to poor physical and mental health, if you do feel you are having sleep issues, then it is important to speak to a doctor or medical professional. Both of these questionnaires covered medical conditions which are treatable: anxiety and insomnia. If you feel you experience such symptoms, please do seek medical advice.

That recommendation that seeking medical advice can be one strategy to help manage sleep related problems leads us to our final learning objective for this session:
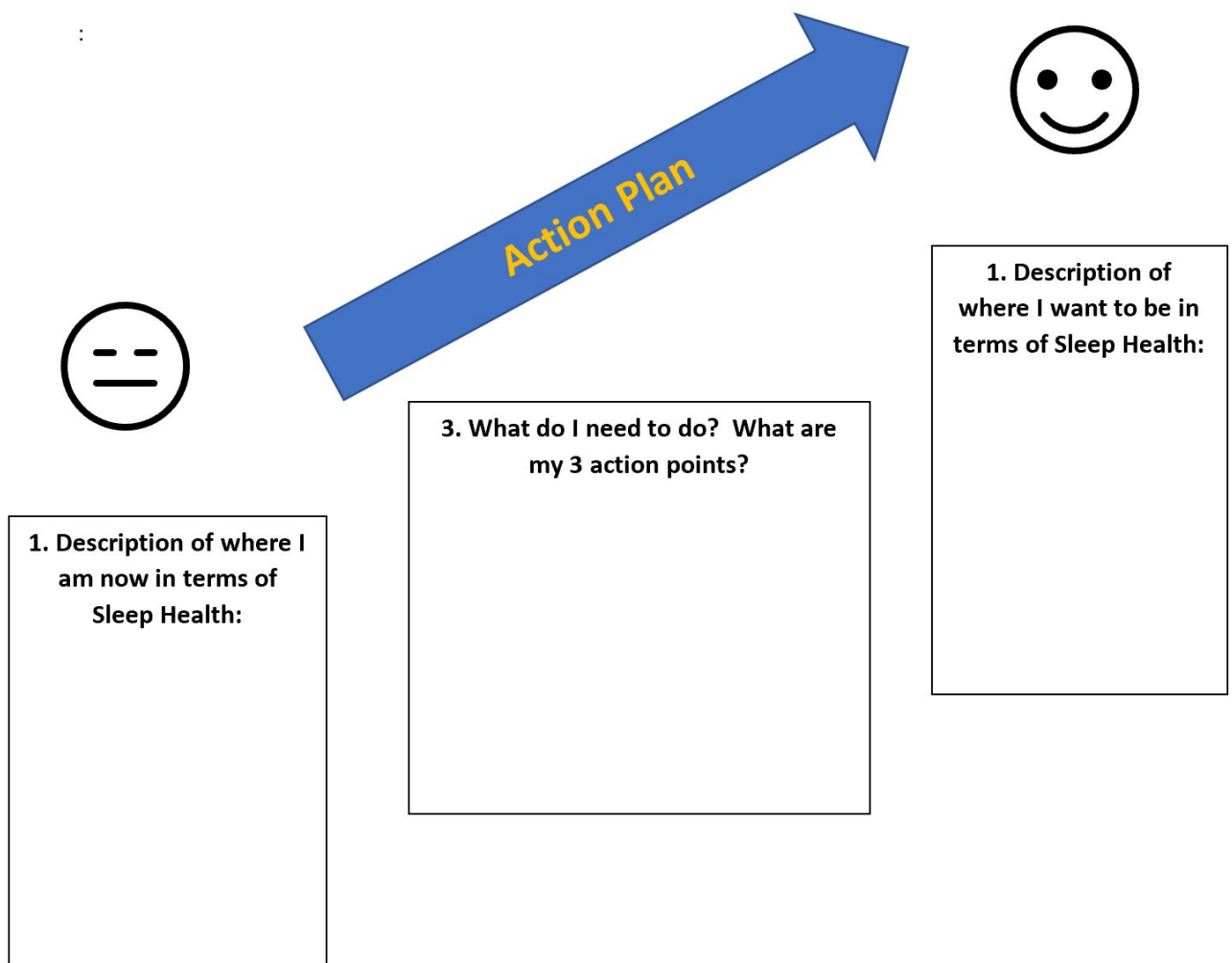
5. Formulate personalised strategy for increased sleep health and sleep hygiene.

For this, we are going to use a tool often used in business and management called a "gap analysis". This is, very simply, a way of working out where you currently are, where you want to get to, and what you need to do to get there. We are going to be comparing where we are in terms of sleep health and sleep hygiene, where we'd like to be and what steps and actions we can put in place to achieve that. Our gap analysis will be different for each of us, as our sleep patterns and current sleep habits will be different. However, we can all use the basic template to create our personalised sleep health gap analysis. This is shown in figure 4. We have 5 -10 minutes to complete this, with a further 5 minutes to discuss following the task.

Task:

Reflect upon your current sleep health. Write a description of your current sleep health in box 1 of figure 4. Now repeat for what you'd like your sleep health to be like. Write your description in box 2. Finally, consider what are the best action steps you can take to achieve your goal(s) and write these down in box 3. These are your action plans towards better sleep health.

Figure 4: Template for sleep health gap analysis.

Action Plan

1. Description of where I want to be in terms of Sleep Health:

3. What do I need to do? What are my 3 action points?

1. Description of where I am now in terms of Sleep Health:

[Provide resources and allow participants sufficient time to complete before facilitating a group discussion focussed on action points that have emerged from the task].

We have now covered all the learning outcomes for this session. We are going to take time to evaluate your own learning today, using a simple traffic light system. For each objective, you are going to decide whether you feel you are:
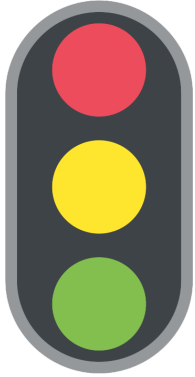
RED / STOP	You have made no progress in learning this and are still at a "standstill."
AMBER	You have some understanding but aren't quite ready to apply it yet.
GREEN / GO	You have a good grasp of this objective and are ready to go and apply this learning in the real world.

1. Define sleep health and identify a range of sleep related issues.

RED   **AMBER**   **GREEN**

2. Describe the potential impact of poor sleep health.

RED **AMBER**   **GREEN**

3. List and describe the factors that contribute to and hinder sleep hygiene.

RED **AMBER**   **GREEN**

4. Complete a self-assessment and reflect upon your own sleep patterns.

RED   **AMBER**   **GREEN**

5. Formulate personalised strategy for increased sleep health and sleep hygiene.

RED   **AMBER**   **GREEN**

What do you want to do as a result of your learning today?

Thank you to everyone for your engagement and participation in the session. I hope you have learnt some useful ideas that can be applied in your daily life.