## Project (Assessment) Title: Health Promotion Sleep Assessment 2012-2013

Students will increase their sleep quality by displaying intrapersonal skills acquired through sleep health interventions as measured by the Pittsburgh Sleep Quality Index.

# **College Priority and Objective**

Strategic Priority II – Improve Student Access and Success

Objective II D Improve student participation in advising, learning support and noncurricular activities that are related to student persistence.

Objective II E Improve student completion of desired educational goals: certificates, degrees, and successful transfer to four year colleges and universities.

# **Methodology (Plan/Timeline/Method):**

Students will increase their sleep quality by displaying intrapersonal skills acquired through sleep health interventions as measured by the Pittsburgh Sleep Quality Index.

Students were selected randomly to participate in the program. The Institutional Review Board provided the first name and email for the randomly selected students. All students were sent an email asking them to participate in the program. An informed consent letter informing the student of the purpose of the program and its risks and benefits associated with the program were attached to the email.

The sleep measure that was primarily used was the Pittsburgh Sleep Quality Index (the PSQI); a 19-item questionnaire designed to measure self-reported sleep quality and disturbance over a 1-month period. The nineteen questions provide the basis for the seven subscales, which include questions to assess subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. The PSQI has been administered to clinical and nonclinical populations, including college students. The survey also included five items to address student demographics - age, gender, ethnicity, school year classification (or number of years in school), and living situation. The pre survey was created using Google Forms. The post survey was created using Campus Labs (Student Voice).

Students were provided sleep health information to improve their sleep patterns via a series of five educational PowerPoint and online videos. The PowerPoint series covered topics such as sleep health, keeping a sleep journal, time management skills, stress management skills, and bedroom-environmental considerations for sleeping. (See Appendix C for Power Point slides)

During the fourth week of April, students were sent a final email of appreciation for participating in the program and a link to take the PSQI (post program) to compare pre and post data to evaluate sleep quality.

# **Student Services Outcomes Supporting Student Learning**

Learning Outcome:

- 2. Acquire Knowledge.
  - C. Know about campus resources.
- 3. Display practical competence and intrapersonal skills.

D. Manage their personal affairs, including economic self-sufficiency, maintaining health and wellness, prioritizing personal, social, educational, and career demands. F. Engage in the college experience to achieve personal and academic success; use college resources, processes and systems; develop goal setting, decision making and planning skills and adapt to change.

# **Results/Findings**

The PSQI was used to measure the increase/improvement of sleep quality of Salt Lake Community College students. Five hundred forty-nine students were initially contacted to participate in the online sleep quality program. Two students asked to be removed from the program. Thirty-six students participated in the pre survey. Five students participated in the post survey.

Students were to read the initial email containing an informed consent letter stating the purpose for the program. The first email sent to each student was personalized (sent individually to all 549 participants). A hyperlink was provided at the end of the email for the student to take the pre-survey (PSQI including demographic questions). There were 24 questions asked in the pre and post surveys. Students were emailed on February 25, 2013, April 9, 2013, April 10, 2013, April 16, 2013, April 19, 2013, April 24, 2013, and April 26, 2013. (See Appendix A for PSQI) (See Appendix B for emails)

## Participant Demographics

## Pre Survey

Of those who participated in the pre survey, 50% (n=18) participants were female and 50% (n=18) were male. The mean age of those participating in the pre survey was 27.86. Most participants in the pre survey (n=15, 41.67%) were in his/her first year at Salt Lake Community College (SLCC). Most students who participated in the pre survey (n=12, 33.33%) lived with parents. The average hours of actual sleep a student in the pre survey received was six.

### Post Survey

In the post survey, 40% (n=2) of the participants were female and 60% (n=3) were male. The mean age of those who completed the post survey was 31. Most participants in the post survey (n=2, 40%) were in his/her third year at SLCC. Sixty percent of those who participated in the post survey lived with a partner or spouse. The average hours of actual sleep a student in the post survey received was 6.4.

#### **PSQI** Results

Sixty-one percent of participants who completed the pre survey stated that three or more times a week they could not fall asleep within thirty minutes. After receiving information about lying in bed awake, post intervention results report 60% of participants cannot get to sleep within thirty minutes less than once a week. Twenty-two percent of participants who completed the pre survey reported that less than once a week they woke up in the middle of the night or early morning. According to post survey results, 40% percent of participants reported they woke up in the middle of the night less than once a week.

From the pre survey results, 81% of participants reported that three or more times a week they could not breathe comfortably. After receiving information on how to get a good night's sleep, eighty percent participants who completed the post survey reported not having trouble breathe comfortably during the past month. In the pre survey, 81% of participants reported they coughed or snored loudly three or more times a week. After the online sleep quality program, 60% of participants reported they did not cough or snore loudly during the past month. According to pre survey results, 86% of participants reported having taken medicine to help him/her sleep three or more times a week. One hundred percent of participants reported on the post survey they did not take medicine to sleep in the past month.

Before participants received information on creating a bedroom environment conducive for sleeping, 61% of students reported they felt too cold three or more times a week. After receiving the information, 80% of participants reported they did not feel too cold during the past month. According to pre survey results, 44% of participants reported they felt too hot three or more times a week. Post intervention results report 60% of participants did not feel too hot during the past month.

Forty-seven percent of participants who completed the pre survey stated they had trouble staying awake while driving, eating meals, or engaging in social activity. After receiving information on drowsy driving and the importance of sleep, 40% of participants reported in the post survey that in the past month they did not have trouble staying awake while driving, eating meals, or engaging in social activity. According to pre survey results, 6% of participants reported having a very good sleep quality overall. Post survey results show an increase of 14% of participants rating their overall sleep quality as very good.

According to pre survey results, 78% of participants stated they or their partner/roommate noticed they experienced long pauses between breaths while asleep three or more times a week. Post intervention, 100% of participants stated they have not experienced long pauses between breaths while asleep during the past month. Eighty-three percent of participants who completed the pre survey stated that they experienced episodes of disorientation or confusion during sleep three or more times a week. After the sleep program, 100% of participants said they did not experience any episodes of disorientation or confusion during sleep during the past month.

According to the National College Health Assessment, SLCC students reported stress and sleep difficulties in the top five academic impacts affecting their individual academic performance. After analyzing pre and post survey data, we conclude that teaching students how to effectively manage sleep can improve their well-being. According to post survey data results, students experienced an increase in sleep quality and in all areas of the PSQI.

#### **Actions Taken (Use of Results/Improvements)**

According to results from the post survey of the online sleep quality program, further assessment and evaluation is needed to gather more concise data. Students who participated in the program and those who attended the sleep health event expressed a concern for wanting more information on improving their sleep quality. The Health Promotion office is planning on disseminating the Power Point educational slides and CNN sleep videos via Health and Wellness Services' website which can be accessed from <a href="www.slcc.edu/hw">www.slcc.edu/hw</a>. Educational slides and videos will be posted to Health and Wellness Services website during the summer of 2013.

# Appendix A (Survey Tool)

# Sleep Quality Questionnaire -Pittsburgh Sleep Quality Index (PSQI)

Instructions: The following questions relate to your usual sleep habits during the PAST MONTH ONLY. Your answers should indicate the most accurate reply for the MAJORITY of days and nights in the past month. PLEASE ANSWER ALL QUESTIONS.

	* Required							
	What is your gender? *							
	What is your ethnicity? *							
	What is your current age? *							
	What is your current living situation? *							
•	Live with parents							
•	Live with roommates							
•	Live with partner/spouse							
•	C Live by myself							
	How many years have you been attending school? *							
•	1 year							
•	2 years							
•	3 years							
•	O 4 years							
•	5 + years							
	During the past month, what time have you usually gone to bed at night? *							
	During the past month, how long (in minutes) has it usually taken you to fall asleep each							
	night? *							
	During the past month, what time have you usually gotten up in the morning? *							
	During the past month, how many hours of actual sleep did you get at night? *(This may be different than							
	the number of hours you spent in bed.)							
	During the past month, how often have you had trouble sleeping because you *							
	Not during the past month  Not during Less than Once or more times a week twice a week week							
	a. Cannot get to sleep O O O							

	Not during the past month	Less than once a week	Once or twice a week	Three or more times a week			
within 30 minutes							
b. Wake up in the middle of the night or early morning	0	0	0	0			
c. Have to get up to use the bathroom	0	0	0	0			
d. Cannot breathe comfortably	0	0	0	0			
e. Cough or snore loudly	0	0	0	0			
f. Feel too cold	0	0	0	0			
g. Feel too hot	0	0	0	0			
h. Have bad dreams	0	0	0	0			
i. Have pain	0	0	0	0			
j. Other reason(s), please describe	0	0	0	0			
counter")? *  Not during the past month Less than once a week Once or twice a week Three or more times a week  During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity? *  Not during the past month Less than once a week Once or twice a week Three or more times a week							
During the past month, how much of a things done? *  No problem at all Only a very slight problem Somewhat of a problem A very big problem		it been for you t	o keep up enou	gh enthusiasm to get			
During the past month, how would you  Very good  Fairly good  Fairly bad  Very bad	u rate your slee	ep quality overa	ll? *				

Do you have a bed partner or room mate? \*

	No bed partner or room mate  Partner/room mate in other room  Partner in same room but not same bed  Partner in same bed						
If yo	ou have a room mate or bed partr	Not during the past month	Less than	Once or twice a week	Three or		
a. Loud snoring b. Long pauses between breaths while asleep c. Legs twitching or jerking while you sleep		0	0	0	0		
		0	0	0	0		
		0	0	0	0		
di	d. Episodes of sorientation or confusion during sleep	0	0	0	0		
e. Other restlessness while you sleep, please describe:		0	0	0	0		

# Appendix B (Emails)

From: To: Subject: Date:

SLCC Student Sleep Study

Wednesday, February 27, 2013 4:05:00 PM

Dear ,



You have been randomly selected to participate in the sleep quality study sponsored by Health & Wellness Services. Health and Wellness Services is using the Pittsburgh Sleep Quality Index (the PSQI) survey tool. The PSQI is an effective instrument used to measure the quality and patterns of sleep in adults. This is a research study to understand the sleep health status of Salt Lake Community College (SLCC) students and to provide improved health promotion services and support for SLCC students. The information collected will be used to develop health programs and resources for your campus.

The PSQI may be completed online using the link at the bottom of this email. We encourage you to complete the survey in one sitting. The survey typically takes about 15-20 minutes to complete. The online sleep educational videos may take up to 5 minutes to watch. There will be instructions that accompany each video. There will be a series of five videos during the period of February 25, 2013 - April 12, 2013.

All information presented in the questions and videos relate to sleep and bedroom use. You may refuse to answer any questions that are part of the survey. You may decide not to participate or to discontinue participation at any time. Your participation is completely voluntary and confidential. Survey responses will be housed at SLCC.

SLCC Health & Wellness will temporarily hold the Excel file of email addresses and unique IDs, thus making the survey confidential, not anonymous. Both the email addresses and the unique ID numbers will be destroyed after the data are compiled.

More directions follow as you link to the survey. By linking to the survey site below, you are acknowledging that you are 18 years of age or older, and you are agreeing to participate in the sleep quality study.

If you have questions or concerns, please feel free to contact the Primary Investigator, Tatiana Burton, at (801) 957-4837. If you have questions regarding your rights as a research subject, or if problems arise which you do not feel you can discuss with the Investigator, please contact the Director of Institutional Research, Dr. Joseph Diaz, at 957-4043.

If you are 18 years of age or older, and agree to participate in the sleep quality study, click on the following internet address to continue:

[https://docs.google.com/spreadsheet/viewform? fromEmail=true&formkey=dDVuSjQ3YU5EUWxneHJXMWdMRld0OXc6MQ]

Thank you for your time and cooperation!

Tatiana Burton, Health Promotion Program Manager Primary Investigator Health and Wellness Services, Salt Lake Community College (801)957-4837 Tatiana.burton@slcc.edu

From: <u>Health and Wellness</u>

To:

Subject: Sleep 101

**Date:** Tuesday, April 09, 2013 12:44:00 PM

Attachments: Sleep 101.pdf

You have been randomly selected to participate in the sleep quality study sponsored by Health & Wellness Services. Health and Wellness Services is using the Pittsburgh Sleep Quality Index (the PSQI) survey tool. As a follow up to the PSQI, Health and Wellness Services has created educational power point slides on sleep health. This is a research study to understand the sleep health status of Salt Lake Community College (SLCC) students and to provide improved health promotion services and support for SLCC students. The information collected will be used to develop health programs and resources for your campus.

The online sleep educational power point may take up to 5 minutes to view. There series of five power point documents have been extended through April 19, 2013.

All information presented in the material relate to sleep and bedroom use. You may decide not to participate or to discontinue participation at any time. Your participation is completely voluntary and confidential. Survey responses will be housed at SLCC.

Please use the information provided to better your sleep habits!

Sincerely,

Tatiana Burton, CHES Health Promotion Program Manager SLCC - Health & Wellness Services 801-957-4837 www.slcc.edu/hw From: <u>Health and Wellness</u>

To:

Subject: SLCC Health & Wellness Sleep Study

Date: Wednesday, April 10, 2013 2:16:00 PM

Attachments: Sleep Well.pdf

You have been randomly selected to participate in the sleep quality study sponsored by Health & Wellness Services. Health and Wellness Services is using the Pittsburgh Sleep Quality Index (the PSQI) survey tool. As a follow up to the PSQI, Health and Wellness Services has created educational power point slides on sleep health. This is a research study to understand the sleep health status of Salt Lake Community College (SLCC) students and to provide improved health promotion services and support for SLCC students. The information collected will be used to develop health programs and resources for your campus.

The attached sleep educational document may take up to 5 minutes to view. There are a series of five power point documents have been extended through April 19, 2013. This is the second document that has been sent.

All information presented in the material relate to sleep and bedroom use. You may decide not to participate or to discontinue participation at any time. Your participation is completely voluntary and confidential. Survey responses will be housed at SLCC. If you have not taken the sleep survey, please take it at your earliest convenience before applying the information attached in the email to your daily routine. The survey can be accessed from the following link [https://docs.google.com/spreadsheet/viewform?

fromEmail=true&formkey=dDVuSjQ3YU5EUWxneHJXMWdMRld0OXc6MQ].

Please use the information provided to better your sleep habits!

Thanks,

Tatiana Burton, CHES Health Promotion Program Manager SLCC - Health & Wellness Services 801-957-4837 www.slcc.edu/hw

"Like" us on facebook: SLCC Health & Wellness

From: <u>Health and Wellness</u>
To: <u>Tatiana Burton</u>

Bcc:

Subject: SLCC Health & Wellness Sleep Study

Date: Tuesday, April 16, 2013 8:53:00 AM

Attachments: <u>Drowsy Driving.pdf</u>

You have been randomly selected to participate in the sleep quality study sponsored by Health & Wellness Services. Health and Wellness Services is using the Pittsburgh Sleep Quality Index (the PSQI) survey tool. As a follow up to the PSQI, Health and Wellness Services has created educational power point slides on sleep health. This is a research study to understand the sleep health status of Salt Lake Community College (SLCC) students and to provide improved health promotion services and support for SLCC students. The information collected will be used to develop health programs and resources for your campus.

The attached sleep educational document may take up to 5 minutes to view. There are a series of five power point documents have been extended through April 19, 2013. This is the third document that has been sent.

All information presented in the material relates to sleep health behaviors. You may decide not to participate or to discontinue participation at any time. Your participation is completely voluntary and confidential. Survey responses will be housed at SLCC. If you have not taken the sleep survey, please take it at your earliest convenience before applying the information attached in the email to your daily routine. The survey can be accessed from the following link [https://docs.google.com/spreadsheet/viewform?

Please use the information provided to better your sleep habits!

fromEmail=true&formkey=dDVuSjQ3YU5EUWxneHJXMWdMRld0OXc6MQ]

Thanks,

Tatiana Burton, CHES Health Promotion Program Manager SLCC - Health & Wellness Services 801-957-4837 www.slcc.edu/hw

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From: Tatiana Burton

Bcc:

**Subject:** SLCC Health & Wellness Sleep Study - Sleep and Academics

**Date:** Friday, April 19, 2013 3:21:00 PM

You have been randomly selected to participate in the sleep quality study sponsored by Health & Wellness Services. Health and Wellness Services is using the Pittsburgh Sleep Quality Index (the PSQI) survey tool. As a follow up to the PSQI, Health and Wellness Services has provided educational material on sleep health. This is a research study to understand the sleep health status of Salt Lake Community College (SLCC) students and to provide improved health promotion services and support for SLCC students. The information collected will be used to develop health programs and resources for your campus.

The <u>Science of Sleep Part 1</u> video may take up to 10 minutes to view. The study has been extended through April 26, 2013. This is the fourth component of the study's educational sleep health material that has been sent.

All information presented in the material relates to sleep, bedroom use, and academics. You may decide not to participate or to discontinue participation at any time. Your participation is completely voluntary and confidential. Survey responses will be housed at SLCC. If you have not taken the sleep survey, please take it at your earliest convenience before applying the information attached in the email to your daily routine. The survey can be accessed from the following link [https://docs.google.com/spreadsheet/viewform? fromEmail=true&formkey=dDVuSjQ3YU5EUWxneHJXMWdMRld0OXc6MQ].

Please use the information provided to better your sleep habits and grades!

Thanks.

Tatiana Burton, CHES
Health Promotion Program Manager
SLCC -Health & Wellness Services
801-957-4837
www.slcc.edu/hw

"Like" us on facebook: SLCC Health & Wellness

From: Health and Wellness

Bcc:

Subject: SLCC Health & Wellness Sleep Study

Date: Wednesday, April 24, 2013 2:48:00 PM

You have been randomly selected to participate in the sleep quality study sponsored by Health & Wellness Services. Health and Wellness Services is using the Pittsburgh Sleep Quality Index (the PSQI) survey tool. As a follow up to the PSQI, Health and Wellness Services has provided educational material on sleep health. This is a research study to understand the sleep health status of Salt Lake Community College (SLCC) students and to provide improved health promotion services and support for SLCC students. The information collected will be used to develop health programs and resources for your campus.

The <u>Science of Sleep Part 2</u> video may take up to 10 minutes to view. The study has been extended through April 26, 2013. This is the fifth component of the study's educational sleep health material that has been sent.

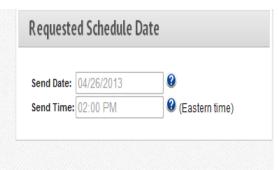
All information presented in the material relates to sleep, bedroom use, and academics. You may decide not to participate or to discontinue participation at any time. Your participation is completely voluntary and confidential. Survey responses will be housed at SLCC. If you have not taken the sleep survey, please take it at your earliest convenience before applying the information attached in the email to your daily routine. The survey can be accessed from the following link [https://docs.google.com/spreadsheet/viewform? fromEmail=true&formkey=dDVuSjQ3YU5EUWxneHJXMWdMRld0OXc6MQ].

Please use the information provided to better your sleep habits and grades!

Tatiana Burton, CHES Health Promotion Program Manager SLCC - Health & Wellness Services 801-957-4837 www.slcc.edu/hw

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etails		
<b>№</b> To	547 Recipients	
Subject:	SLCC Health & Wellness Sleep Study	
From Name:	HealthandWellness@slcc.edu	
Reply-To Address:	tatiana.burton@slcc.edu	
Description:		0



# Message

You have been randomly selected to participate in the sleep quality study sponsored by Salt Lake Community College (SLCC) Health & Wellness Services. Health and Wellness Services is using the Pittsburgh Sleep Quality Index (the PSQI) survey tool. As a follow up to the PSQI, Health and Wellness Services has provided educational material on sleep health. This is a research study to understand the sleep health status of SLCC students and to provide improved health promotion services and support for SLCC students. The information collected will be used to develop health programs and resources for your campus.

We appreciate your participation in the study. Thank you for answering the questions to the best of your ability. We are inserting a link to take a post assessment survey relating to sleep. You may decide not to participate or to discontinue participation at any time. Your participation is completely voluntary and confidential. Survey responses will be housed at SLCC. Please take the final survey at your earliest convenience. The survey can be accessed from the following link link line linestructions

Sincerely,

Tatiana Burton, CHES Health Promotion Programming Manager/Project Manager SLCC Health & Wellness Services 801-957-4837

www.slcc.edu/hw

# Appendix C (Power Point Slides)



# Non-REM Sleep

- Body temperature drops, breathing and pulse slow, and dreams are less intense.
- · Brain waves become slower.
- · Deep sleep occurs.
- · Little to no eye movement or muscle activity.
- Body recharging itself.

# Stages of Sleep

- Stage 1
- Stage 2

Non-REM

- Stage 3
- · Stage 4
- · REM Rapid Eye Movement

# **REM Sleep**

- · Stage of most intense dreaming.
- · Breathing, pulse and temperature go up.
- · About 25% of each sleep cycle is REM sleep.
- · Brain-waves resemble wakeful patterns.

# How Much Sleep Do We Need?

- · Depends on many factors, including age.
- For most adults, 7-8 hours a night seems best, but some people need as few as 5 hours or as many as 10 hours.
- Too little sleep causes a sleep debt similar to being overdrawn at a bank. Your body will collect!
- If you feel drowsy during the day, you haven't had enough sleep.

# Tips for a Good Night's Sleep

- Set a schedule Go to bed at the same time each night and get up at the same time each morning.
- Exercise Try to exercise 20 30 minutes a day. Daily exercise often helps people sleep. Try to exercise about 5-6 hours before going to bed.
- Avoid caffeine, nicotine, and alcohol Avoid drinks with caffeine ads as a stimulant and keepspeople awake. Nicotine can cause withdrawals which cause smokers to sleep lightly and wake up early. Alcohol robs people of deep sleep and REM sleep.
- $\bullet \quad \text{Relax before bed} \text{Create a relaxing routine to make it easier to fall a sleep}.$

# Tips for a Good Night's Sleep

- Sleep until sunlight Wakeupwith the sun, or usevery bright lights in the morning. Bright lights help the body's internal biological clock reset itself each day.
- Don't lie in bed awake Do something else, like reading, watching TV, listening to music, until you feel tired.
- Control your room temperature Maintain a comfortable temp. in the bedroom. Too hot or too cold may disrupt sleep or prevent you from failing asleep.
- See a doctor if your sleeping problem continues If you have troublefalling asleepinght after night, or always feel tired the next the day, you may have a sleep disorder. Your primary care physician may be able to help you.
   Most sleep disorders can be treated effectively, so you can finally get that good night's sleep you need.

# References

- · National Sleep Foundation
- · National Institute of Health
- National Institute of Neurological Disorders and Stroke
- · Getting What You Want From Sleep (Brochure)



# Not Getting Enough Sleep

- Limits your ability to learn, listen, concentrate and solve problems.
- · Leads to aggressive or inappropriate behavior.
- Causes you to eat too much or eat unhealthy foods that lead to weight gain.
- Can contribute to illness, not using equipment safely or driving drowsy.

# Sleep Solutions

- · Make sleep a priority.
- Naps can help pick you up and make you work more efficiently. Naps too long or too close to bedtime can interfere with sleep.
- Create a sleep smart bedroom.
- Establish a bed and wake-time and stick to it.
- · Try keeping a sleep journal.
- Don't eat, drink, or exercise within a few hours of bedtime.
- Try to avoid the TV, computer and telephone in bed and at least an hour before you go to bed.
- Create a bedtime routine.

# Bedroom Environment

- Only use your bedroom for sleep and sex. Other activities (watching TV, listening to music, computer, homework, etc.) that you do in your bed will inhibit you from making the connection that your bed is a place of rest.
- Researchers suggest that your bedroom temperature should be around 65 degrees Fahrenheit. Since your body temperature fluctuates during the night, experiment with a temperature that works well for you.
- Keep your room dark as to not let outside light, or lights from your phone, interrupt your sleep.
- Sleep on a comfortable mattress and pillows. Most quality mattresses have a life expectancy of 8-10 years.



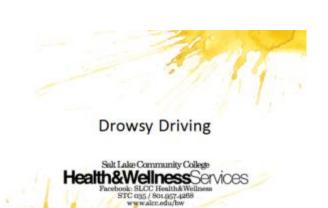
# More Info on Sleeping Well

For more information on sleeping well and smart, go to

http://www.sleepfoundation.org/sleep-facts-information/sleeping-smart.

## Sleep Journal

	Time to bed at night	Time awake in the morning	Duration and number of times awakened during the night	Total Sleep Time	In the morning, how did you feel?	Did you remember any dreams?	What did you do one hour before going to sleep?
Day Date	pm am	am	minutes times	hours minutes	tired refreshed	yes no	
Day Date	pm am	am	minutes	hours minutes	tired refreshed	yes no	
Day Date	pm am	am	minutes times	hours minutes	tired refreshed	yes no	
Day Date	pm am	am	minutes	hours minutes	tired refreshed	yes no	
Day Date	pm am	am	minutes times	hours minutes	tired refreshed	yes no	
Day Date	pm am	am	minutes times	hours minutes	tired refreshed	yes no	
Day Date	pm am	am	minutes times	hours minutes	tired refreshed	_yes _no	



# Did You Know?

- Drowsy driving causes more than 100,000 crashes a year, resulting in 40,000 injuries and 1550 deaths.
- · Drowsiness makes drivers less attentive.
- It also slows reaction time.
- Drowsiness can affect a driver's ability to make decisions.

# Risks for Drowsy Driving Crashes

- Sleep loss
- Driving patterns driving between midnight and 6 a.m.; driving in the midafternoon hours (esp. for older persons); driving for longer times without taking a break.
- · Use of sedating medications
- · Untreated or unrecognized sleep disorders
- · Consumption of alcohol

# Signs of Drowsy Driving

- Difficulty focusing, frequent blinking, or heavy eyelids
- · Daydreaming; wandering/disconnected thoughts
- · Trouble remembering the last few miles driven
- · Missing exits or traffic signs
- · Trouble keeping your head up
- Drifting from your lane, tailgating, or hitting a shoulder rumble strip
- · Feeling restless and irritable

# Population Groups at Highest Risk

- · No driver is immune!
- · Young people ages (16 to 29), especially males.
- Shift workers whose sleep is disrupted by working night or working long or irregular hours.
- People with untreated sleep apnea syndrome (SAS) and narcolepsy.

(These three groups are based on evidence from crash reports and selfreports of sleep behavior and driving performance.)

# How To Avoid Drowsy Driving

- Get plenty of sleep (at least six hours) before a long trip.
- Travel at times when you are normally awake or stay overnight rather than driving.
- Schedule a break every two hours or every 100 miles.
- · Stop driving if you become sleepy.

# Avoid Drowsy Driving Cont.

- Do not plan to work all day and then drive all night.
- · Avoid driving during sleepy times of day.
- Travel with an awake passenger.
- Refrain from drinking alcohol or taking sedating medications before driving.

#### Resources

- · National Sleep Foundation
- · AAA Foundation for Traffic Safety
- · Centers for Disease Control and Prevention
- National Highway Traffic Safety Administration

# Appendix D (Pre and Post Survey Results)