



Sleep as a Public Health Priority

Population Health Assessment
Southwestern Public Health
July 2018

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How to cite this document:

MacLeod M, Duench S. Sleep as a public health priority. Woodstock, ON: Southwestern Public Health; 2018.

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Summary

Sleep is integral to health as it increases an individual's physical and mental well-being.^{1,2} Although the optimal sleep duration differs throughout an individual's lifespan, it is generally recommended that adults receive from 7 hours to less than 10 hours of sleep per night.³ It is important to note that sleep should also be characterized by minimal difficulty falling and staying asleep, feeling refreshed after sleep and sustained alertness during waking hours.² Some key findings from this population health assessment focusing on sleep are:

- More residents in the Southwestern Public Health region had trouble going to sleep or staying asleep most or all of the time compared to Ontario (20.3% versus 16.2%).
- Females in the Southwestern Public Health region were more likely than males in this region to report having trouble going to sleep or staying asleep sometimes (35.9% versus 23.9%) and most or all of the time (25.1% versus 15.3%).
- Residents in the Southwestern Public Health region within the lowest household income category (less than \$40,000 before taxes) were more likely to have trouble going to sleep or staying asleep most or all of the time (33.2%) compared to all other income groups in this region.
- Residents in the Southwestern Public Health region aged 12 to 17 years and 65 years and older were more likely to report having refreshing sleep most or all of the time (73.1% and 68.1%, respectively) compared to those aged 18 to 34 years (42.6%) and those aged 35 to 64 years (54.6%) in this region.
- Three quarters (75.6%) of children and teenagers in the Southwestern Public Health region generally obtained the recommended hours of sleep per night. However, approximately half of adults received less than the recommended hours of sleep per night.

These differences between subgroups of people could be related to differences in biology, behaviour, environment and stressors such as work-life balance or financial stress.^{4,5} It is important to consider these differences when developing effective public health interventions aimed to improve healthy sleep. Consideration should also be given to assessing epidemiological trends in sleep behaviours over time as more information becomes available. Assessing trends can provide valuable insight about impacts of interventions and may inform future Public Health programs, services and strategies.

Sleep as a Public Health Priority

Background

Sleep, a necessary biological process, is important from a public health lens because it increases an individual's physical and mental well-being.^{1,2} Sleep health is characterized by minimal difficulty falling and staying asleep, feeling refreshed after sleep, sustained alertness during waking hours and adequate sleep duration.² Sleep deficiency on the other hand, results when the quantity or quality of sleep needed for optimal health, performance and well-being is not being met.⁴

Sleep deficiency has been linked to impaired memory and attention, motor vehicle crashes, workplace incidents, hypertension, diabetes, depression, obesity, cancer, increased mortality and reduced productivity and quality of life.^{1,6-10} The consequences of sleep deficiency present a significant health burden to individuals and the community. In today's busy society, sleep deficiency is common.¹¹ Technological advances, including the internet, smart phones and screen-based devices have been shown to hinder sleep quantity and quality.¹¹ Sleep behaviours are often altered to accommodate for increased demands such as managing present day expectations. For example, employment, particularly shift work where employees are required to work at different times of the day, can easily disrupt sleep schedules.¹²

The Ontario Public Health Standards (OPHS) define the roles of public health and inform action on important public health topics.¹³ Sleep has recently been adopted as an important protective factor for the prevention of chronic diseases and well-being.¹² Although sleep is receiving increased attention based on the OPHS, historically there has been relatively little information on sleep patterns at the local population level. Southwestern Public Health has proactively met the call-to-action to make sleep a public health priority. As a first step to improve sleeping behaviours, it is essential to understand the current situation. Considering this, Southwestern Public Health conducted a population health assessment exploring local sleep behaviours. The findings presented within this report will be used to help shape health unit programs and services to meet the needs of people living in the Southwestern Public Health region.

Findings

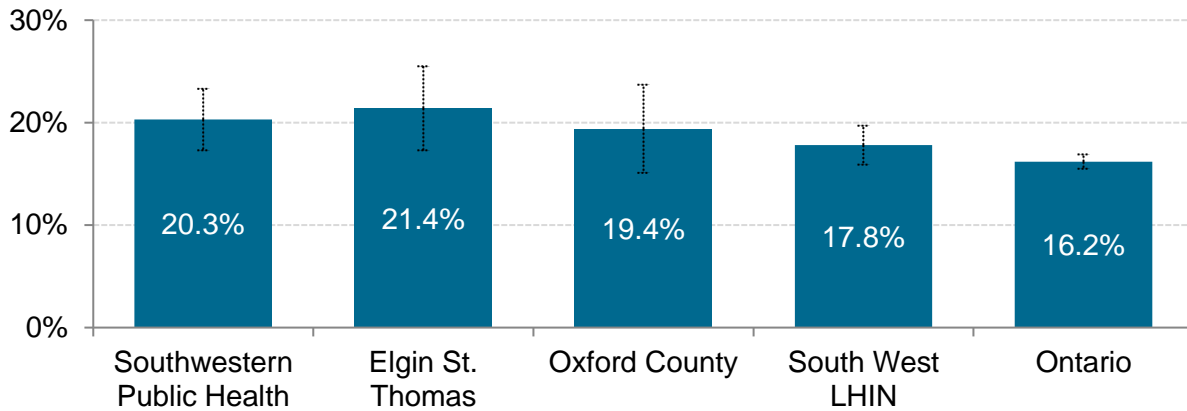
The 2015-2016 Canadian Community Health Survey (CCHS) asked participants about four sleep behaviours: trouble going to sleep or staying asleep, refreshing sleep, difficulty staying awake when wanting to and sleep duration. This was the first time that participants were asked about their sleep behaviours in this survey. These behaviours were analyzed by sociodemographic factors including geography, age, sex, household income, marital status and education level to understand how sleep behaviours differed within subgroups of the population. Additional analyses were done to compare sleep between adults living with children and adults living without children; however, no differences were found.^a The overall findings for people living in the Southwestern Public Health region and differences across sociodemographic factors are presented below. Please see Appendix A for more information about the data source and how the numbers are calculated and displayed.

Trouble going to sleep or staying asleep

Half (49.6%) of people living in the Southwestern Public Health region never or rarely had trouble going to sleep or staying asleep. This was similar to residents in the South West Local Health Integration Network (LHIN) (53.4%) and Ontario (54.3%) (Appendix B, Table 1). However, at the other end of the spectrum, more people living in the Southwestern Public Health region had trouble going to sleep or staying asleep most or all of the time compared to Ontario (20.3% versus 16.2%). This difference was largely driven by Elgin St. Thomas residents, where 21.4% of residents had trouble going to sleep or staying asleep most or all of the time (Figure 1; Appendix B, Table 1).

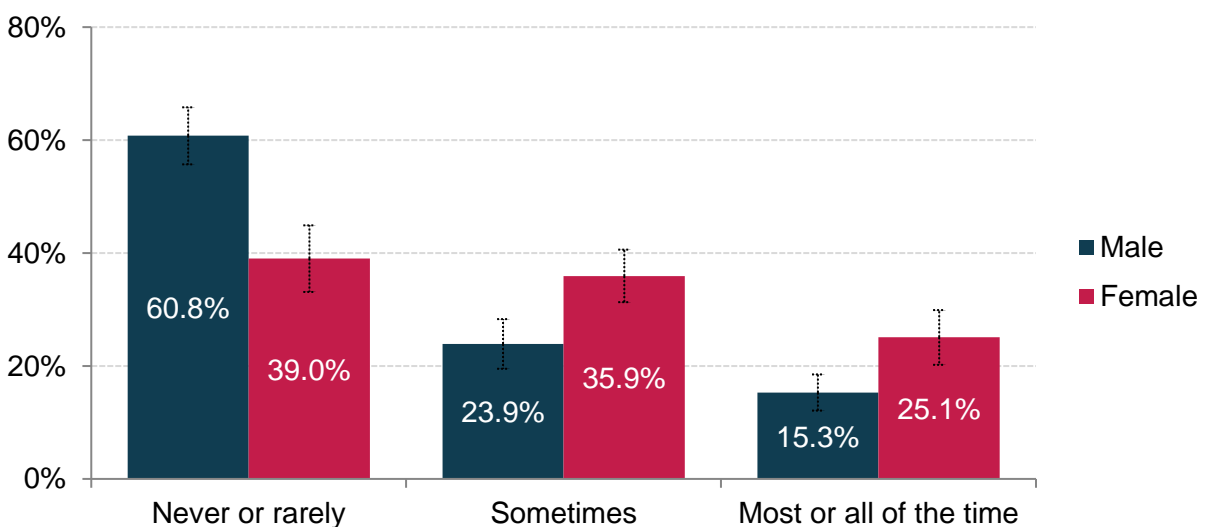
^a This may be due to a lack of statistical power needed to detect differences, which is related to sample size. In the 2015-2016 CCHS, among people living in the Southwestern Public Health region, there were 129 participants that reported living with at least one child less than six years old and there were 242 participants that reported living with at least one child less than twelve years old.

Figure 1. Trouble going to sleep or staying asleep most or all of the time by geography, 2015-2016



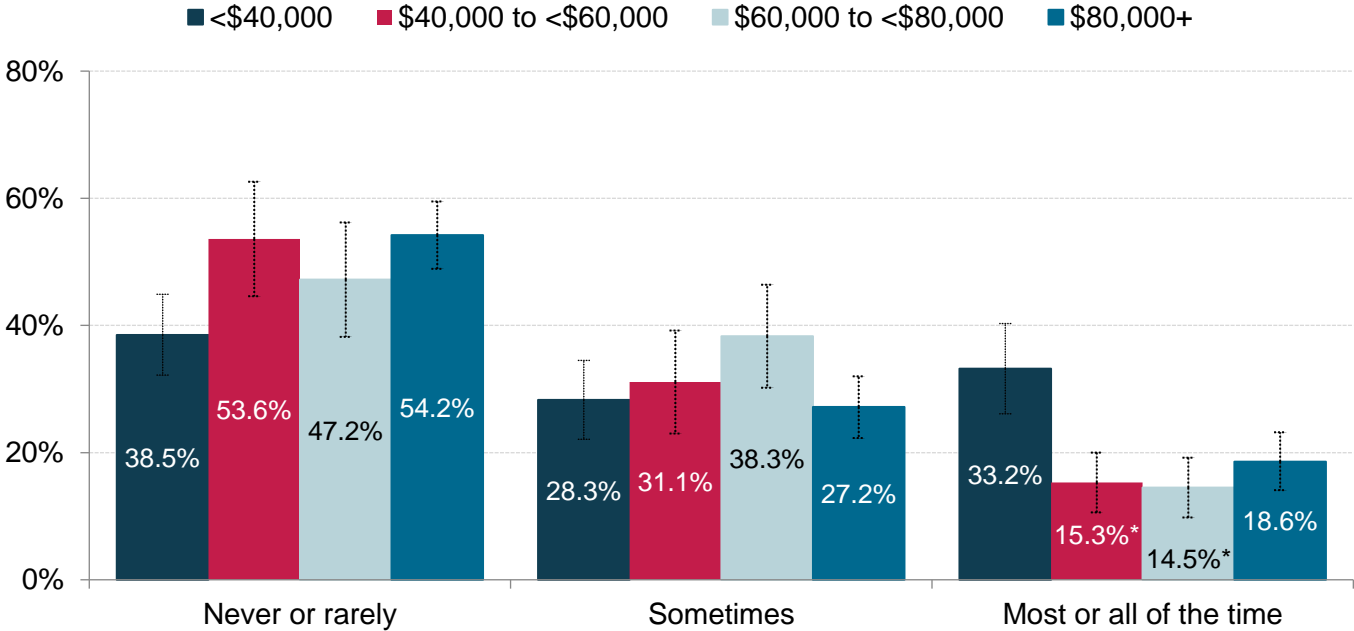
Among people living in the Southwestern Public Health region, there were differences in trouble going to sleep or staying asleep by sex. In general, females had greater difficulty falling asleep and staying asleep compared to males (Figure 2; Appendix B, Table 2). Males were more likely to never or rarely have trouble going to sleep or staying asleep in comparison to females (60.8% versus 39.0%). Consequently, females were more likely to report having trouble going to sleep or staying asleep ‘sometimes’ and ‘most or all of the time’ in comparison to males. These findings are consistent with scientific literature linking sex and sleep. Studies found that overall, women had greater difficulty going to sleep and staying asleep in comparison to men.⁴ These differences may be biological, environmental or behaviour based.⁵

Figure 2. Trouble going to sleep or staying asleep by sex, Southwestern Public Health, 2015-2016



Among people living in the Southwestern Public Health region, a correlation between income disparity and sleep was evident. Residents within the lowest household income category (less than \$40,000 before taxes) were more likely to have trouble going to sleep or staying asleep most or all of the time (33.2%) compared to all other income groups (Figure 3; Appendix B, Table 3). Conversely, residents with the highest household income (\$80,000 or more before taxes) were more likely to never or rarely have trouble going to sleep or staying asleep compared to the lowest household income group (54.2% versus 38.5%) (Figure 3; Appendix B, Table 3). This is consistent with research showing an inverse linear relationship between trouble sleeping and income (i.e., as income increases, trouble sleeping decreases).^{14,15}

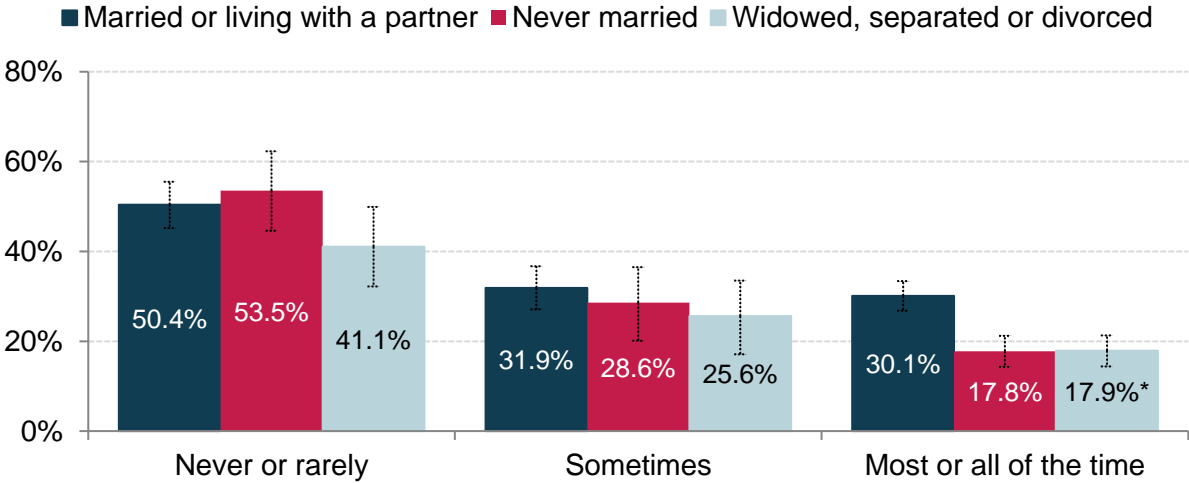
Figure 3. Trouble going to sleep or staying asleep by household income before taxes, Southwestern Public Health, 2015-2016



* These per cents should be used with caution due to their variability.

There were also some differences by marital status. People living in the Southwestern Public Health region who were single (never married) and widowed, divorced or separated were less likely to have trouble going to sleep or staying asleep most or all of the time compared to residents who were married or living with a partner (Figure 4; Appendix B, Table 4).

Figure 4. Trouble going to sleep or staying asleep by marital status, Southwestern Public Health, 2015-2016



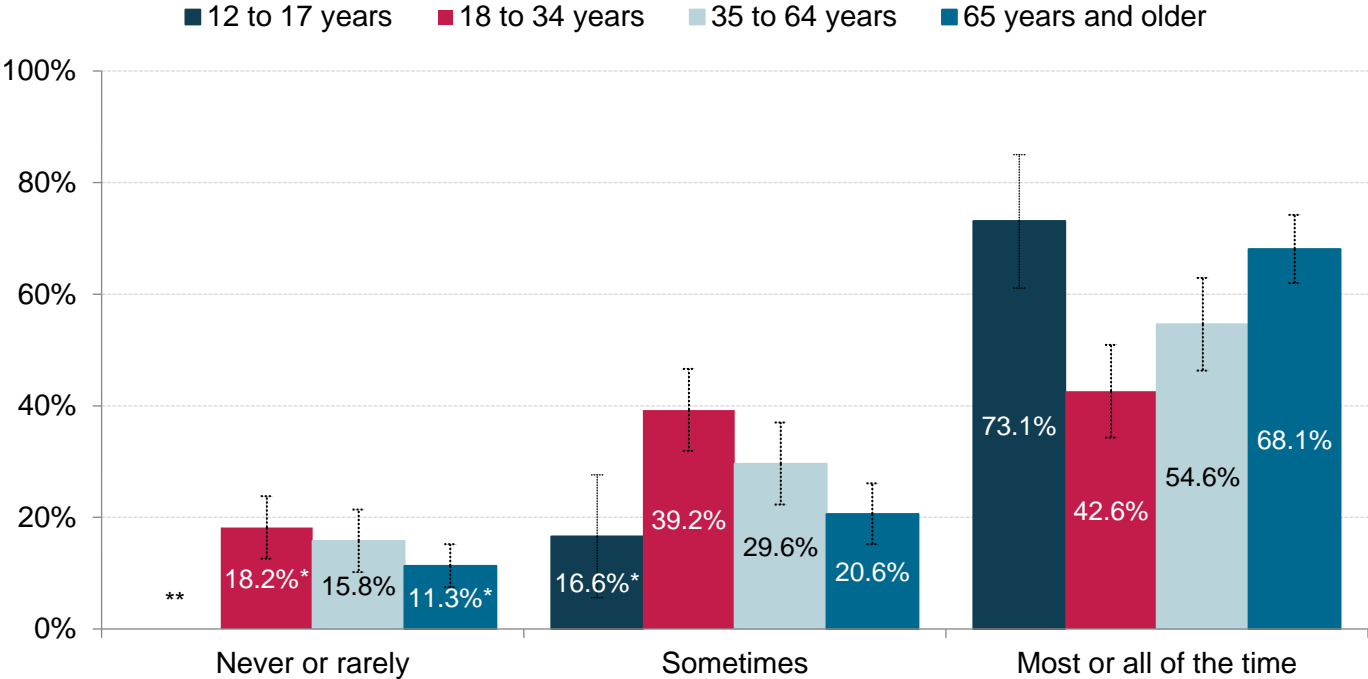
* This per cent should be used with caution due to its variability.

Refreshing sleep

More than half (55.8%) of people living in the Southwestern Public Health region reported refreshing sleep most or all of the time. This was similar to residents in the South West LHIN (59.6%) and Ontario (58.9%) (Appendix B, Tables 1 & 2). In contrast, nearly one-third (29.1%) of people living in the Southwestern Public Health region sometimes had refreshing sleep and 15.1% never or rarely had refreshing sleep, which was also similar to residents in the South West LHIN and Ontario (Appendix B, Table 2).

Among people living in the Southwestern Public Health region, those aged 12 to 17 years and 65 years and older were more likely to report having refreshing sleep most or all of the time (73.1% and 68.1%, respectively) compared to those aged 18 to 34 years (42.6%) and those aged 35 to 64 years (54.6%) (Figure 5; Appendix B, Table 5). This finding is interesting considering that previous studies have demonstrated that individuals 65 years and older generally report feeling less satisfied with their sleep compared to their younger counterparts.¹⁶

Figure 5. Refreshing sleep by age group, Southwestern Public Health, 2015-2016

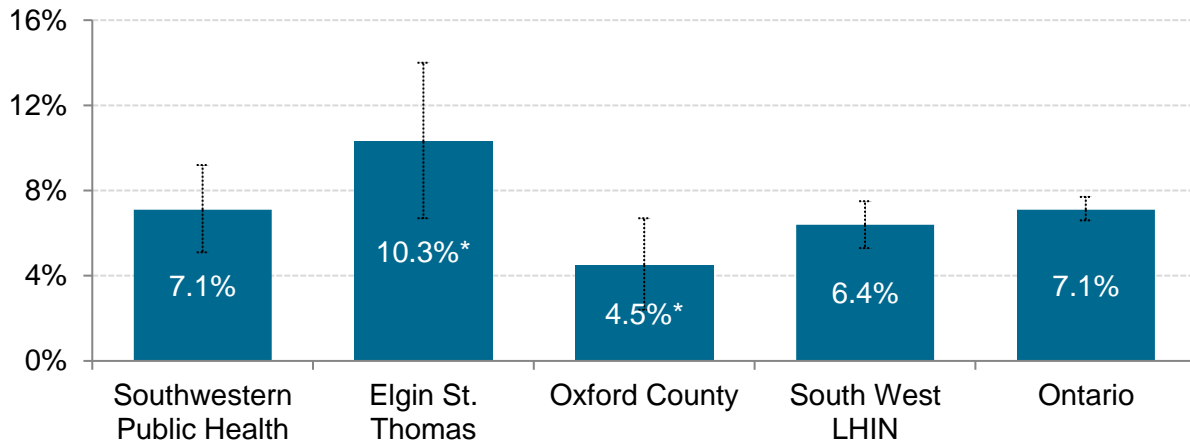


* These per cents should be used with caution due to their variability.
 ** This per cent was suppressed due to its extremely high variability.

Difficulty staying awake when wanting to

Nearly three-quarters (70.2%) of people living in the Southwestern Public Health region never or rarely had difficulty staying awake when wanting to, whereas 22.6% sometimes had difficulty and 7.1% had difficulty most or all of the time. This was similar to residents in the South West LHIN and Ontario. However, within Southwestern Public Health, Elgin St. Thomas residents were more likely to have difficulty staying awake most or all of the time compared to Oxford County residents (10.3% versus 4.5%) (Figure 6; Appendix B, Table 1).

Figure 6. Difficulty staying awake when wanting to most or all of the time by geography, 2015-2016



* These per cents should be used with caution due to their variability.

Sleep duration

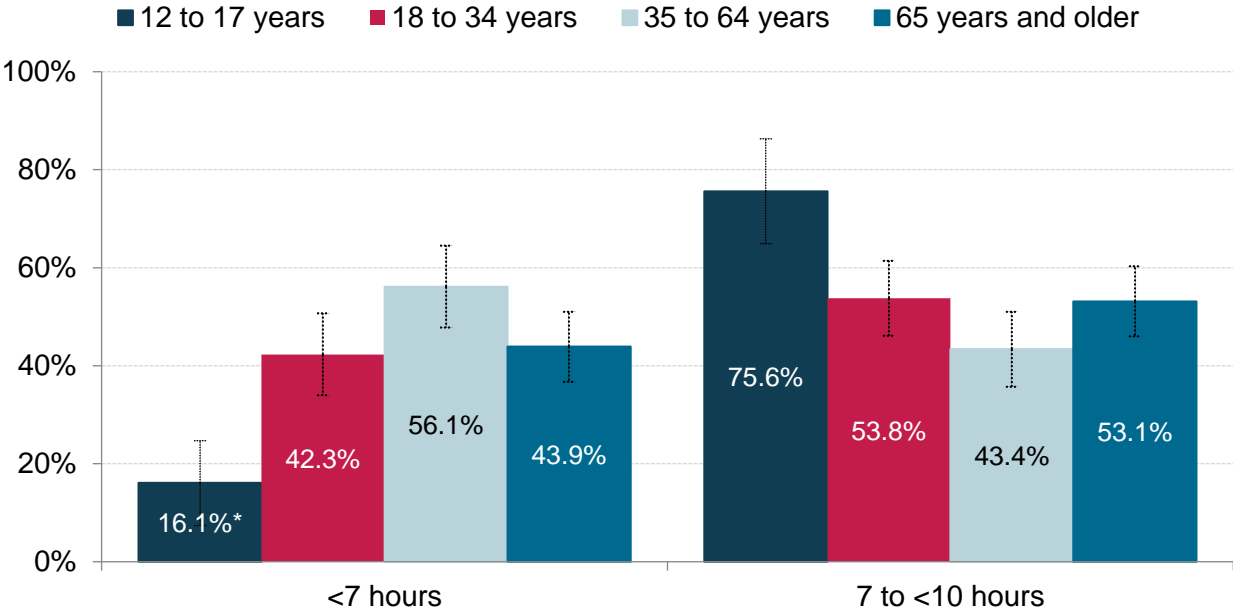
Half (50.4%) of people living in the Southwestern Public Health region reported that they usually sleep between 7 to less than 10 hours per night whereas just under half (47.2%) usually sleep less than 7 hours per night. Very few (2.4%) residents reported that they usually sleep 10 or more hours per night. This was similar to residents in the South West LHIN and Ontario (Appendix B, Table 1). The National Sleep Foundation recommends that adults sleep between 7 to less than 10 hours per night and that children and youth sleep slightly longer (Table 1).³

Table 1. National Sleep Foundation recommendations by age group³

Age group	Recommended hours of sleep per night
12 to 13 years	9 to <12 hours
14 to 17 years	8 to <11 hours
18 to 64 years	7 to <10 hours
65+ years	7 to <9 hours

Among people living in the Southwestern Public Health region, there was a clear relationship between sleep duration and age. Residents aged 12 to 17 years were more likely to report sleeping 7 to less than 10 hours per night compared to all other age groups (Figure 7; Appendix B, Table 5). Conversely, residents from the older age groups were all more likely to report less than 7 hours of sleep per night. This suggests that three quarters (75.6%) of children and teenagers generally obtain the recommended hours of sleep per night. However, approximately half of adults receive less than the recommended hours of sleep per night (i.e., less than 7 hours).

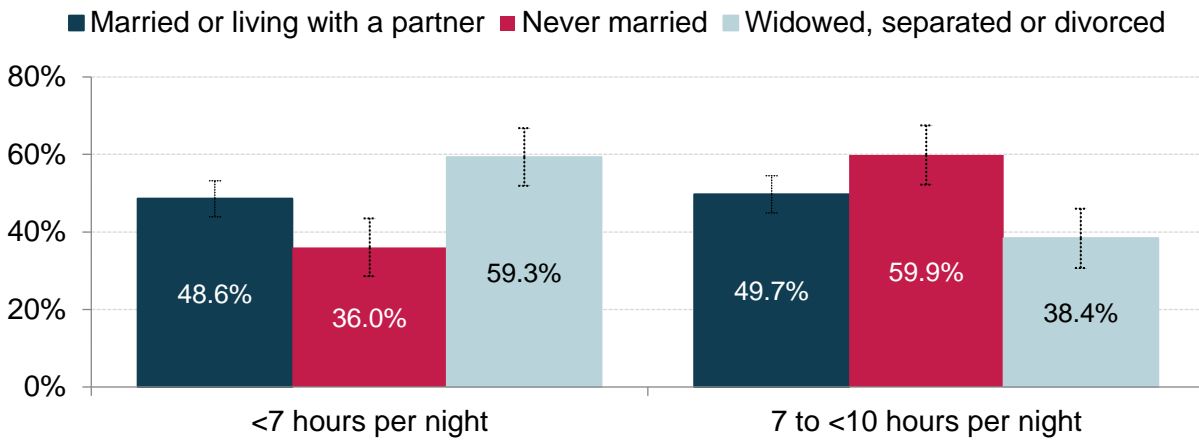
Figure 7. Sleep duration by age group, Southwestern Public Health, 2015-2016



* This per cent should be used with caution due to its variability. The per cent of residents usually sleeping 10 or more hours per night was not reportable for most age groups.

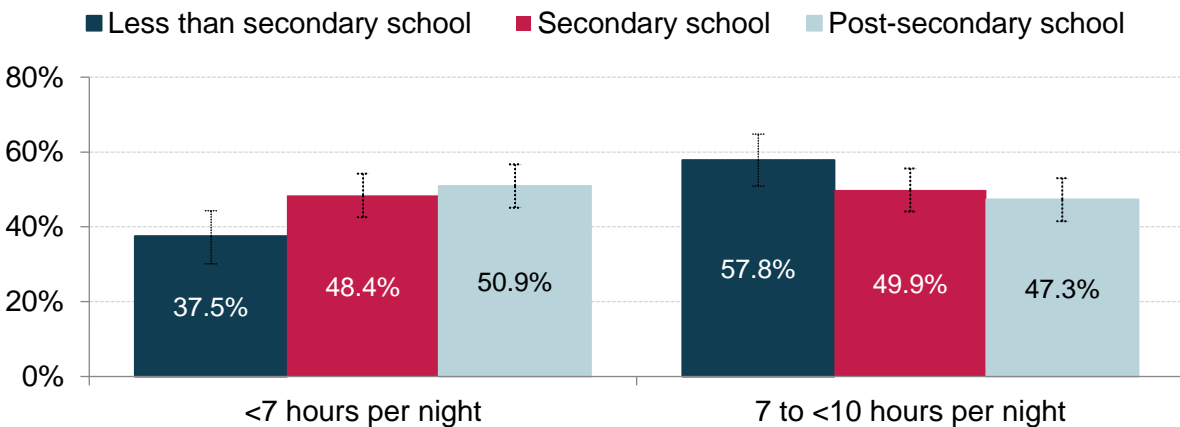
There were also differences by marital status, with those who were single (never married) more likely to report sleeping 7 to less than 10 hours compared to residents who were widowed, separated or divorced (59.9% versus 38.4%) (Figure 8; Appendix B, Table 4). Those who were married or living with a partner and those who were widowed, separated or divorced were more likely to report sleeping less than 7 hours (48.6% and 59.3%, respectively) compared to those who were never married (36.0%) (Figure 8; Appendix B, Table 4).

Figure 8. Sleep duration by marital status, Southwestern Public Health, 2015-2016



Lastly, among people living in the Southwestern Public Health region, those with a post-secondary certificate, diploma or university degree were more likely to report sleeping less than 7 hours compared to those with less than secondary school education (50.9% versus 37.5%) (Figure 9; Appendix B, Table 6). This finding may be partly related to age as older residents have more opportunities to pursue higher education.

Figure 9. Sleep duration by education level, Southwestern Public Health, 2015-2016



Considerations and Next Steps

Sleep is essential for health. Poor sleep (including difficulty going to sleep or staying asleep, sleep that is not refreshing and inadequate sleep duration) can negatively impact health in several ways.^{1,6-10} The findings suggest that a considerable proportion of people living in the Southwestern Public Health region experience poor sleep. Of most concern, only half of adults received the recommended hours of sleep per night (i.e., 7 hours to less than 10 hours) and only half reported refreshing sleep most or all of the time. Alternatively, three quarters of children and teenagers generally slept within the recommended range of hours per night and had more refreshing sleep than adults.

Although advancing knowledge about adequate sleep quantity is a key component to effective sleep health interventions, this report demonstrates that interventions should also focus on improving sleep quality. Overall, the majority of people living in the Southwestern Public Health region did not have difficulties staying awake. However, people living in the Southwestern Public Health region were more likely to report trouble going to sleep or staying asleep most or all of the time compared to Ontario (20.3% versus 16.2%).

There were some subgroups within the population that were more likely to report trouble sleeping, including females, residents with lower household income and those who were married or living with a partner. This could be because of differences in biology, behaviour, environment or stressors such as work-life balance or financial stress.^{4,5} It is important to consider these differences among sociodemographic groups when creating effective public health interventions aimed to improve healthy sleep.

Consideration should also be given to assessing epidemiological trends in sleep behaviours over time as more information becomes available. Assessing trends can provide valuable insight about impacts of interventions and may inform future health unit programs, services and strategies.

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Appendix A: Data Notes

Canadian Community Health Survey

The Canadian Community Health Survey (CCHS) is a national cross-sectional telephone survey that collects information about health status, health care utilization and determinants of health from the Canadian population aged 12 years and older. The intended use of the CCHS data is to advance health surveillance and population health research. The CCHS excludes people living on reserves and other Indigenous settlements, full-time members of the Canadian Forces and people living in institutions.

Data is self-reported and may be subject to recall bias and social desirability bias, particularly for sensitive topics such as household income. However, in 2016, income questions were only asked of participants who did not agree to have their information linked to their tax records.

The 2015-2016 survey interviewed 575 individuals from Oxford County and 623 individuals from Elgin St. Thomas. Data from 2015-2016 is not comparable to previous years due to substantial changes in sampling methodology and content.

Missing responses and variability

'Don't know', 'refused' and 'not stated' responses were removed from analysis when together they represented less than 5% of the unweighted sample. This assumes that data are missing at random, which is not always the case. Throughout the report, some numbers may be suppressed because they are unstable due to high variability, as measured by the coefficient of variation (CV). The CV indicates how precise an estimate is. Higher CVs indicate more variability, which often occurs when there is a small sample size. When the CV is greater than 15.0 and less than or equal to 35.0, the estimate should be interpreted with caution due to high variability. In tables, this is shown with an asterisk (*). Estimates with a CV of 35.1 or more are not reportable and the estimates are replaced with double asterisks (**). Estimates are also not reportable if there are less than 10 observations in the numerator and 20 in the denominator based on the unweighted sample.

Confidence intervals

The per cents in brackets that follow each per cent estimate in the tables are the confidence intervals (CIs). In the graphs, the CI is shown by an error bar. Each estimate is based on the survey sample, and a CI is a range of values that describes the uncertainty surrounding an estimate. The 95% CI shows a range of values that have a 95% chance of including the true estimate in the population if the survey was repeated. The wider a 95% CI, the more caution should be used when using the estimate. CIs that do not overlap show statistically significant differences between groups. Statistically significant results indicate the finding is unlikely to be due to chance alone.

Appendix B: Data Tables

Table 1. Sleep behaviours, by geography, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)			
		Southwestern Public Health		South West LHIN	Ontario
		Oxford County	Elgin St. Thomas		
Trouble going to sleep or staying asleep	Never or rarely	48.9% (43.5%-54.3%)	50.6% (44.7%-56.4%)	53.4% (51.1%-55.7%)	54.3% (53.4%-55.3%)
	Sometimes	31.7% (27.1%-36.3%)	28.0% (23.4%-32.7%)	28.8% (26.8%-30.8%)	29.5% (28.6%-30.3%)
	Most or all of the time	19.4% (15.1%-23.7%)	21.4% [‡] (17.3%-25.5%)	17.8% (15.9%-19.7%)	16.2% [‡] (15.5%-16.9%)
Refreshing sleep	Never or rarely	15.4% (12.0%-18.7%)	14.7% (11.8%-17.6%)	16.8% (14.6%-18.9%)	15.5% (14.8%-16.2%)
	Sometimes	29.6% (24.2%-35.0%)	28.5% (23.9%-33.1%)	23.7% (21.5%-25.8%)	25.6% (24.7%-26.4%)
	Most or all of the time	55.0% (48.9%-61.2%)	56.8% (51.6%-62.0%)	59.6% (56.9%-62.3%)	58.9% (57.9%-59.9%)
Difficulty staying awake	Never or rarely	72.7% (67.8%-77.5%)	67.3% (61.8%-72.7%)	70.5% (68.2%-72.9%)	69.1% (68.2%-70.0%)
	Sometimes	22.8% (18.2%-27.4%)	22.4% (18.4%-26.4%)	23.1% (20.9%-25.3%)	23.8% (22.9%-24.6%)
	Most or all of the time	4.5% ^{*‡} (2.4%-6.7%)	10.3% ^{*‡} (6.7%-14.0%)	6.4% (5.3%-7.5%)	7.1% (6.6%-7.7%)
Sleep duration	<7 hours	46.3% (41.7%-50.9%)	48.4% (43.0%-53.9%)	42.6% [‡] (40.1%-45.1%)	46.4% [‡] (45.4%-47.4%)
	7 to <10 hours	52.3% (47.7%-56.9%)	48.0% (42.5%-53.5%)	54.9% (52.4%-57.5%)	51.8% (50.7%-52.8%)
	10+ hours	1.5% [*] (0.6%-2.3%)	3.6% [*] (1.3%-5.9%)	2.5% [*] (1.4%-3.5%)	1.9% (1.6%-2.1%)

LHIN = Local Health Integration Network.

* High variability results, interpret with caution.

‡ Statistically significant difference between groups based on a 95% confidence interval.

Table 2. Sleep behaviours, by sex, Southwestern Public Health, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)		
		Overall	Male	Female
Trouble going to sleep or staying asleep	Never or rarely	49.6% (45.6%-53.7%)	60.8%‡ (55.7%-65.8%)	39.0%‡ (33.1%-44.9%)
	Sometimes	30.1% (26.8%-33.4%)	23.9%‡ (19.5%-28.3%)	35.9%‡ (31.3%-40.6%)
	Most or all of the time	20.3% (17.3%-23.3%)	15.3%‡ (12.1%-18.5%)	25.1%‡ (20.2%-29.9%)
Refreshing sleep	Never or rarely	15.1% (12.7%-17.4%)	13.7% (10.1%-17.3%)	16.4% (12.6%-20.1%)
	Sometimes	29.1% (25.5%-32.8%)	25.9% (20.3%-31.5%)	32.1% (27.1%-37.2%)
	Most or all of the time	55.8% (51.6%-60.0%)	60.4% (54.6%-66.2%)	51.5% (45.4%-57.6%)
Difficulty staying awake	Never or rarely	70.2% (66.5%-73.9%)	72.3% (67.4%-77.1%)	68.3% (63.5%-73.1%)
	Sometimes	22.6% (19.4%-25.8%)	19.8% (15.8%-23.9%)	25.3% (20.8%-29.8%)
	Most or all of the time	7.1% (5.1%-9.2%)	7.9%* (4.6%-11.2%)	6.4%* (4.3%-8.5%)
Sleep duration	<7 hours	47.2% (43.7%-50.8%)	43.6% (38.2%-49.0%)	50.7% (44.6%-56.7%)
	7 to <10 hours	50.4% (46.8%-54.0%)	54.9% (49.4%-60.5%)	46.0% (40.2%-51.9%)
	10+ hours	2.4%* (1.3%-3.5%)	**	3.3%* (1.3%-5.3%)

* High variability results, interpret with caution.

** Extremely high variability results, data suppressed.

‡ Statistically significant difference between groups based on a 95% confidence interval.

Table 3. Sleep behaviours, by household income before taxes, Southwestern Public Health, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)				
		Overall	<\$40K	\$40K to <\$60K	\$60K to <\$80K	\$80K+
Trouble going to sleep or staying asleep	Never or rarely	49.6% (45.6%-53.7%)	38.5%‡ (32.2%-44.9%)	53.6% (44.6%-62.6%)	47.2% (37.4%-57.0%)	54.2%‡ (48.9%-59.5%)
	Sometimes	30.1% (26.8%-33.4%)	28.3% (22.1%-34.5%)	31.1% (23.0%-39.2%)	38.3% (27.9%-48.7%)	27.2% (22.3%-32.0%)
	Most or all of the time	20.3% (17.3%-23.3%)	33.2%††§ (26.1%-40.3%)	15.3%*‡ (10.6%-20.0%)	14.5%*† (8.2%-20.8%)	18.6%§ (14.1%-23.2%)
Refreshing sleep	Never or rarely	15.1% (12.7%-17.4%)	21.6% (15.6%-27.7%)	13.0%* (7.8%-18.1%)	15.7%* (9.2%-22.2%)	12.6%* (8.5%-16.8%)
	Sometimes	29.1% (25.5%-32.8%)	31.2% (24.0%-38.3%)	27.8% (18.9%-36.7%)	24.6%* (16.8%-32.3%)	30.5% (25.3%-35.7%)
	Most or all of the time	55.8% (51.6%-60.0%)	47.2% (39.6%-54.9%)	59.2% (51.1%-67.3%)	59.7% (51.4%-68.1%)	56.9% (51.2%-62.6%)
Difficulty staying awake	Never or rarely	70.2% (66.5%-73.9%)	62.5% (53.9%-71.0%)	71.5% (64.3%-78.8%)	72.3% (64.5%-80.2%)	72.3% (66.6%-78.1%)
	Sometimes	22.6% (19.4%-25.8%)	29.8% (22.8%-36.8%)	21.4%* (15.0%-27.9%)	18.8%* (12.1%-25.5%)	21.5% (16.3%-26.6%)
	Most or all of the time	7.1% (5.1%-9.2%)	7.7%* (3.9%-11.6%)	7.1%* (3.6%-10.5%)	8.9%* (2.9%-14.8%)	6.2%* (3.1%-9.3%)
Sleep duration	<7 hours	47.2% (43.7%-50.8%)	50.6% (43.1%-58.2%)	41.8% (34.5%-49.1%)	47.3% (39.4%-55.3%)	47.5% (41.1%-53.8%)
	7 to <10 hours	50.4% (46.8%-54.0%)	43.6% (36.0%-51.1%)	57.3% (50.2%-64.5%)	51.4% (43.8%-59.0%)	50.7% (44.3%-57.1%)
	10+ hours	2.4%* (1.3%-3.5%)	5.8%* (1.9%-9.7%)	**	**	**

* High variability results, interpret with caution.

** Extremely high variability results, data suppressed.

‡, †, § Statistically significant difference between groups based on a 95% confidence interval.

Table 4. Sleep behaviours, by marital status, Southwestern Public Health, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)			
		Overall	Married or living with partner	Never married	Widowed, divorced or separated
Trouble going to sleep or staying asleep	Never or rarely	49.6% (45.6%-53.7%)	50.4% (45.2%-55.5%)	53.5% (44.6%-62.3%)	41.1% (31.5%-50.6%)
	Sometimes	30.1% (26.8%-33.4%)	31.9% (27.1%-36.7%)	28.6% (20.1%-36.5%)	25.6% (17.5%-33.6%)
	Most or all of the time	20.3% (17.3%-23.3%)	30.1%†† (26.8%-33.4%)	17.8%‡ (14.3%-21.2%)	17.9%*† (12.3%-23.6%)
Refreshing sleep	Never or rarely	15.1% (12.7%-17.4%)	12.8% (10.0%-15.6%)	18.3%* (12.8%-23.8%)	18.4%* (10.0%-26.7%)
	Sometimes	29.1% (25.5%-32.8%)	29.3% (24.3%-34.3%)	28.9% (22.5%-35.2%)	28.4%* (19.7%-37.1%)
	Most or all of the time	55.8% (51.6%-60.0%)	57.9% (52.7%-63.0%)	52.8% (45.4%-60.2%)	53.2% (43.0%-63.4%)
Difficulty staying awake	Never or rarely	70.2% (66.5%-73.9%)	69.2% (65.1%-73.4%)	76.0% (69.7%-82.3%)	65.1% (55.1%-75.0%)
	Sometimes	22.6% (19.4%-25.8%)	23.0% (19.1%-26.9%)	19.3%* (13.5%-25.2%)	26.2%* (16.9%-35.5%)
	Most or all of the time	7.1% (5.1%-9.2%)	7.8%* (5.1%-10.4%)	4.7%* (1.9%-7.4%)	**
Sleep duration	<7 hours	47.2% (43.7%-50.8%)	48.6%‡ (43.9%-53.2%)	36.0%†† (28.6%-43.5%)	59.3%† (49.2%-69.4%)
	7 to <10 hours	50.4% (46.8%-54.0%)	49.7% (44.9%-54.5%)	59.9%‡ (52.2%-67.5%)	38.4%‡ (28.6%-48.2%)
	10+ hours	2.4%* (1.3%-3.5%)	**	4.1%* (1.4%-6.8%)	**

* High variability results, interpret with caution.

** Extremely high variability results, data suppressed.

‡, † Statistically significant difference between groups based on a 95% confidence interval.

Table 5. Sleep behaviours, by age group, Southwestern Public Health, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)				
		Overall	12 to 17 years	18 to 34 years	35 to 64 years	65+ years
Trouble going to sleep or staying asleep	Never or rarely	49.6% (45.6%-53.7%)	58.4% (44.9%-72.0%)	50.1% (39.6%-60.6%)	48.2% (42.0%-54.4%)	49.1% (43.1%-55.1%)
	Sometimes	30.1% (26.8%-33.4%)	22.0% (10.2%-33.8%)	35.6% (26.3%-44.9%)	29.0% (23.6%-34.4%)	29.4% (24.0%-34.8%)
	Most or all of the time	20.3% (17.3%-23.3%)	19.6%* (8.4%-30.8%)	14.3%* (8.8%-19.9%)	22.9% (18.2%-27.5%)	21.5% (15.7%-27.3%)
Refreshing sleep	Never or rarely	15.1% (12.7%-17.4%)	**	18.2%* (12.6%-23.8%)	15.8% (12.3%-19.3%)	11.3%* (7.5%-15.2%)
	Sometimes	29.1% (25.5%-32.8%)	16.6%*‡ (5.6%-27.6%)	39.2%†† (31.9%-46.6%)	29.6% (24.1%-35.1%)	20.6%† (15.2%-26.1%)
	Most or all of the time	55.8% (51.6%-60.0%)	73.1%†† (61.1%-85.0%)	42.6%†§ (34.3%-50.9%)	54.6%† (48.5%-60.8%)	68.1%§ (62.0%-74.2%)
Difficulty staying awake	Never or rarely	70.2% (66.5%-73.9%)	73.0% (62.3%-83.7%)	74.4% (66.7%-82.2%)	67.9% (62.0%-73.8%)	69.8% (63.5%-76.2%)
	Sometimes	22.6% (19.4%-25.8%)	20.8%* (10.4%-31.1%)	18.8%* (11.9%-25.7%)	24.5% (19.4%-29.6%)	23.5% (17.0%-30.1%)
	Most or all of the time	7.1% (5.1%-9.2%)	**	6.8%* (2.7%-10.9%)	7.6%* (4.8%-10.5%)	6.6%* (4.1%-9.2%)
Sleep duration	<7 hours	47.2% (43.7%-50.8%)	16.1%*††§ (7.4%-24.7%)	42.3%† (34.0%-50.7%)	56.1%† (50.5%-61.8%)	43.9%§ (36.7%-51.0%)
	7 to <10 hours	50.4% (46.8%-54.0%)	75.6%††§ (64.9%-86.3%)	53.8%† (46.1%-61.4%)	43.4%† (37.7%-49.2%)	53.1%§ (46.0%-60.3%)
	10+ hours	2.4%* (1.3%-3.5%)	**	**	**	3.1%* (1.2%-4.9%)

* High variability results, interpret with caution.

** Extremely high variability results, data suppressed.

‡, †, §, || Statistically significant difference between groups based on a 95% confidence interval.

Table 6. Sleep behaviours, by highest education level, Southwestern Public Health, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)			
		Overall	Less than secondary school	Secondary school	Post-secondary certificate, diploma or university degree
Trouble going to sleep or staying asleep	Never or rarely	49.6% (45.6%-53.7%)	50.9% (42.8%-58.9%)	53.0% (45.7%-60.2%)	47.7% (41.4%-54.1%)
	Sometimes	30.1% (26.8%-33.4%)	23.0% (16.4%-29.6%)	31.0% (25.1%-36.9%)	32.5% (27.2%-37.9%)
	Most or all of the time	20.3% (17.3%-23.3%)	26.1% (19.1%-33.2%)	16.1% (11.6%-20.5%)	19.7% (15.2%-24.3%)
Refreshing sleep	Never or rarely	15.1% (12.7%-17.4%)	19.2% (13.7%-24.8%)	14.6%* (9.9%-19.4%)	13.2%* (9.0%-17.3%)
	Sometimes	29.1% (25.5%-32.8%)	22.1% (15.7%-28.5%)	30.8% (24.2%-37.4%)	31.8% (26.5%-37.2%)
	Most or all of the time	55.8% (51.6%-60.0%)	58.7% (51.1%-66.3%)	54.6% (46.8%-62.3%)	55.0% (48.8%-61.3%)
Difficulty staying awake	Never or rarely	70.2% (66.5%-73.9%)	68.8% (62.6%-75.0%)	69.1% (62.0%-76.3%)	71.4% (65.9%-77.0%)
	Sometimes	22.6% (19.4%-25.8%)	22.7% (17.1%-28.4%)	21.3% (16.3%-26.4%)	23.5% (18.3%-28.6%)
	Most or all of the time	7.1% (5.1%-9.2%)	8.5%* (4.8%-12.3%)	9.5%* (3.6%-15.5%)	5.1%* (2.6%-7.6%)
Sleep duration	<7 hours	47.2% (43.7%-50.8%)	37.5%‡ (30.1%-44.3%)	48.4% (42.6%-54.2%)	50.9%‡ (45.4%-56.4%)
	7 to <10 hours	50.4% (46.8%-54.0%)	57.8% (50.9%-64.8%)	49.9% (44.1%-55.6%)	47.3% (41.4%-53.2%)
	10+ hours	2.4%* (1.3%-3.5%)	4.7%* (1.9%-7.5%)	**	**

* High variability results, interpret with caution.

** Extremely high variability results, data suppressed.

‡ Statistically significant difference between groups based on a 95% confidence interval.

Table 7. Sleep behaviours, by presence of children less than 6 years old in the household, Southwestern Public Health, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)		
		Overall	Children <6 years old living in the household	No children <6 years old living in the household
Trouble going to sleep or staying asleep	Never or rarely	49.6% (45.6%-53.7%)	54.9% (43.6%-66.1%)	48.9% (44.7%-53.1%)
	Sometimes	30.1% (26.8%-33.4%)	27.6%* (18.3%-36.9%)	30.4% (26.7%-34.1%)
	Most or all of the time	20.3% (17.3%-23.3%)	17.5%* (8.0%-27.1%)	20.7% (17.4%-24.0%)
Refreshing sleep	Never or rarely	15.1% (12.7%-17.4%)	17.5%* (9.9%-25.1%)	14.7% (12.2%-17.2%)
	Sometimes	29.1% (25.5%-32.8%)	36.7%* (25.1%-48.2%)	28.1% (24.1%-32.1%)
	Most or all of the time	55.8% (51.6%-60.0%)	45.8% (34.3%-57.3%)	57.2% (52.7%-61.8%)
Difficulty staying awake	Never or rarely	70.2% (66.5%-73.9%)	71.2% (60.9%-81.5%)	70.1% (65.8%-74.4%)
	Sometimes	22.6% (19.4%-25.8%)	22.6%* (13.4%-31.9%)	22.6% (19.0%-26.3%)
	Most or all of the time	7.1% (5.1%-9.2%)	**	7.3%* (5.0%-9.5%)
Sleep duration	<7 hours	47.2% (43.7%-50.8%)	48.2% (37.0%-59.4%)	47.1% (43.3%-51.0%)
	7 to <10 hours	50.4% (46.8%-54.0%)	49.4% (38.7%-60.2%)	50.5% (46.5%-54.5%)
	10+ hours	2.4%* (1.3%-3.5%)	**	2.4%* (1.3%-3.5%)

* High variability results, interpret with caution.

** Extremely high variability results, data suppressed.

Table 8. Sleep behaviours, by presence of children less than 12 years old in the household, Southwestern Public Health, 2015-2016

Indicator	Responses	Per cent of residents (95% CI)		
		Overall	Children <12 years old living in the household	No children <12 years old living in the household
Trouble going to sleep or staying asleep	Never or rarely	49.6% (45.6%-53.7%)	49.6% (40.9%-58.3%)	49.7% (45.5%-53.9%)
	Sometimes	30.1% (26.8%-33.4%)	31.0% (24.1%-37.9%)	29.8% (26.0%-33.7%)
	Most or all of the time	20.3% (17.3%-23.3%)	19.5%* (12.5%-26.4%)	20.5% (17.2%-23.9%)
Refreshing sleep	Never or rarely	15.1% (12.7%-17.4%)	15.2%* (10.0%-20.3%)	15.0% (12.5%-17.6%)
	Sometimes	29.1% (25.5%-32.8%)	33.2% (24.2%-42.1%)	27.9% (23.6%-32.3%)
	Most or all of the time	55.8% (51.6%-60.0%)	51.7% (42.7%-60.7%)	57.0% (52.3%-61.7%)
Difficulty staying awake	Never or rarely	70.2% (66.5%-73.9%)	74.1% (66.7%-81.5%)	69.1% (64.4%-73.8%)
	Sometimes	22.6% (19.4%-25.8%)	20.3%* (13.7%-26.9%)	23.3% (19.4%-27.3%)
	Most or all of the time	7.1% (5.1%-9.2%)	**	7.6%* (5.1%-10.0%)
Sleep duration	<7 hours	47.2% (43.7%-50.8%)	44.2% (36.4%-52.0%)	48.1% (44.1%-52.1%)
	7 to <10 hours	50.4% (46.8%-54.0%)	53.9% (46.3%-61.6%)	49.3% (45.2%-53.5%)
	10+ hours	2.4%* (1.3%-3.5%)	**	2.6%* (1.4%-3.8%)

* High variability results, interpret with caution.

** Extremely high variability results, data suppressed.



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