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Technology as a Tool to Encourage Young Adults to Sleep and Eat Healthy

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Adequate sleep and proper nutrition are essential to maintaining proper physical, mental, emotional, social, occupational, and academic health and wellness. In fact, Healthy People 2020 has identified both nutrition and sleep health as primary health indicators. The goal of the nutrition indicator is to promote health and wellness, as well as reduce chronic disease risk, through the consumption of healthful diets. The sleep health indicator includes improving public knowledge of the effects of inadequate sleep on multiple indicators of wellness, including productivity, quality of life and safety.

SLEEP NEEDS IN YOUNG ADULTS

Young adults, 18-25 years of age, typically require approximately 8 hours of sleep per night to feel well rested and to function optimally throughout the day. Much of what is known about young adult sleep needs are based on research in college students, who often report only getting between 6-7 hours of sleep per night [1]. These same students face specific and numerous challenges to getting sufficient sleep, including academic demands, social pressures, technology overload, irregular schedules, and noisy residence halls [2]. As college graduates segue into the workforce, many of these challenges still exist. One of particular note is related to shift work, which creates sleep deprivation and workday drowsiness, resulting in higher rates of vehicular and workplace accidents [3]. Regardless of the context in which young adults spend their days, many of them naturally go to sleep later at night and get up later in the morning [4]. Combining this natural inclination for getting to sleep later with the demands of early wake times required for

school and or work, may also contribute to inadequate sleep and increased risk of negative physical and mental health outcomes. The most common negative outcomes include increased risk of mood disorders, decreased ability to fight infection, and increased risk of chronic conditions such as obesity and diabetes [5].

DIET IN YOUNG ADULTS

Poor dietary quality is also a risk factor for future chronic diseases, including obesity, diabetes, and coronary heart disease [6]. Living away from home as a young adult is an important transitional period during which formerly simple decisions and responsibilities like budgeting, meal planning, and dietary choices become more daunting. As it is, less than 1% of adolescents aged 11-19 years, most of whom are living at home, met the five components of a healthy diet score (higher intakes of fruits, vegetables, fish and fiber-rich whole grains and lower intakes of sodium and sugar-sweetened beverages) and 90% were classified with having a poor diet [7]. And looking at the next stage of life, a meta-analysis of five large-scale cohort studies with over 5700 participants aged 18-39 years, reported that only 7% met at least four of the five healthy eating components as set by the American Heart Association [8]. Looking specifically at college students, there is a strong tendency to have diets high in solid fats, sodium, and added sugars, while also low in fiber [9]. Complicating all of this poor nutrition is that some research has found that poor sleep can decrease the ability to make healthy food choices [10].

USING TECHNOLOGY TO IMPROVE SLEEP AND NUTRITION

Approximately 75% of teens have smart phones [11] and the number of mobile phone apps increases every day. Out of the 40,000⁺ health-based apps available on the US Apple iTunes store, more than 50% get downloaded less than 500 times and only five

apps make up 15% of all the health-based apps downloaded [12]. The willingness of young adults to use their mobile phones makes mobile apps an ideal way to engage them in general, with the promotion of healthy behaviors a prime area to target [13]. Although still an emerging area of research, there is some promise [13] related to how technology can enhance traditional behavior change methods.

One of the challenges for practitioners in helping clients change behavior is obtaining accurate information about individual levels of sleep and daily diet composition. Without this critical baseline information, it is difficult to have a conversation about practical changes and or to show progress. Although there is the ironic twist in that using technology tends to negatively impact sleep and diet, there are also numerous advantages to positively influence both. Below are descriptions of a few powerful and highly rated apps and devices that may be useful in tracking sleep and diet:

- 1) Sleepbot: Sleepbot integrates a smart alarm and sleep cycle tracker. After turning on the app, you place your phone on your mattress and it collects information about your sleep cycles, movements, and noises throughout the night. These data are downloaded and converted into easy to understand graphs, which can also be emailed or texted to anyone designated by the original user. Sleepbot also tracks your sleep cycle and helps you to wake up gently and efficiently each morning during your lightest cycle of sleep. No more groggy mornings!
- 2) MyFitnessPal: This free exercise and fitness app helps to keep track of daily food and beverage intake and calculates all of your daily nutrients, calories and

vitamins. The app analyzes patterns and identifies the foods that you need to eat more or less of in a given day.

- 3) Fitbit: This wearable device tracks food intake, sleep, activity, exercise and weight. It can sync with a smartphone and monitors long-term progress towards goals for all aspects that it tracks. Progress reports to identify trends, motivational messages to help improve compliance with goals and connecting with other friends using Fitbit are additional features that round out this particular device.

PUTTING IT ALL TOGETHER

Today, most young adults highly value their access to daily technology; however, the same priority is not always given to healthy eating and sufficient sleep. The question then becomes “As a practitioner working with young adults, what can I do with this information to help promote better sleep and healthy eating?” First, practitioners can focus an eye toward using behavior therapy and health promotion strategies to help clients change their behaviors. Information from the mobile apps can be used to identify patterns that compromise health, and practitioners can work together with the client to problem solve strategies that will fit into their lifestyles. For example, helping clients to focus on food preparation, scheduled meals, and healthy options when eating at restaurants can guide better nutrition. Likewise, using sleep hygiene strategies such as avoiding technology and blue light an hour before bed, engaging in relaxing activities, and finding ways to manage worry often result in better sleep. Finally, when working with a population of young adults who often view themselves as invincible, discussing the importance of healthy eating and adequate sleep as a way of enhancing their health today and in the future can help motivate change. This may be even more likely when

technology is incorporated into the plan, as this is a method of communication they are inherently comfortable with. Ultimately, helping a person change their behavior begins with knowledge of what they are currently doing, followed by helping to motivate them to make small changes in their everyday life.

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References

1. Adams SK, Kisler TS: Sleep quality as a mediator between technology-related sleep quality, depression, and anxiety. *Cyberpsychology, Behavior and Social Networking* 2013, 16:25-30.
2. Lund HG, Reider BD, Whiting AB, Prichard JR: Sleep patterns and predictors of disturbed sleep in a large population of college students. *The Journal of Adolescent Health* 2010, 46:124-132.
3. NCSDR/NHTSA Expert Panel on Driver Fatigue and Sleepiness: Drowsy Driving and Automobile Crashes [<https://www.healthypeople.gov/2020/tools-resources/evidence-based-resource/drowsy-driving-and-automobile-crashes>] Accessed on January 16, 2017.

4. Hagenauer MH, Perryman JI, Lee TM, Carskadon MA: Adolescent changes in the homeostatic and circadian regulation of sleep. *Developmental Neuroscience* 2009, 31:276-284.
5. Committee on Sleep Medicine and Research: Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem. (Colten HR, Altevogy BM eds.). Washington DC: Institute of Medicine; 2006.
6. Camhi SM, Katzmarzyk PT: Tracking of cardiometabolic risk factor clustering from childhood to adulthood. *International Journal of Pediatric Obesity* 2010, 5:122-129.
7. Shay CM, Ning H, Daniels SR, Rooks CR, Gidding SS, Lloyd-Jones DM: Status of cardiovascular health in US adolescents: prevalence estimates from the National Health and Nutrition Examination Surveys (NHANES) 2005-2010. *Circulation* 2013, 127:1369-1376.
8. Lloyd-Jones DM, Hong Y, Labarthe D, Mozaffarian D, Appel LJ, Van Horn L, Greenlund K, Daniels S, Nichol G, Tomaselli GF, et al: Defining and setting national goals for cardiovascular health promotion and disease reduction: the American Heart Association's strategic Impact Goal through 2020 and beyond. *Circulation* 2010, 121:586-613.
9. Hirshberg SM, Fernandez PM, Melanson KJ, Dwiggins JL, Dimond ES, Lofgren IE: Dietary Sugars Predict Chronic Disease Risk Factors in College Students. *Topics in Clinical Nutrition* 2011, 26:324-334.
10. Kruger AK, Reither EN, Peppard PE, Krueger PM, Hale L: Do sleep-deprived adolescents make less-healthy food choices? *The British Journal of Nutrition* 2014, 111:1898-1904.
11. Lenhart A, Page D: Teens, Social Media & Technology Overview 2015: Smartphones facilitate shifts in communication landscape for teens. Pew Research Center; April 2015.
12. IMS Institute for Healthcare Infomatics: October 2013 Patient Apps for Improved Healthcare From Novelty to Mainstream. Parsippany, NJ; 2013.
13. Zhao J, Freeman B: Can Mobile Phone Apps Influence People's Health Behavior Change? An Evidence Review. *Journal of Medical INternet Research* 2016, 18:e287.