Establishing Nightly Routines of Young Adults with Intellectual and/or Developmental Disabilities (IDD) in a Transition Program

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Introduction

- Rest and sleep are vital occupations to bolster performance in other occupations (AOTA, 2020); furthermore, an individual's sleep habits may impact the quality and duration of sleep (Irish et al., 2015).
- Evidence shows that populations with intellectual and/or developmental disabilities (IDD) are more affected than neurotypical (NT) populations by poorer sleep outcomes (Surtees et al., 2018; Baker & Richdale, 2015).
- Horizons School is a transitional post-secondary organization for young adults with disabilities. This community-based school targets employment and independent living outcomes.
- Sleep hygiene, the development of healthy habits to improve sleep, is a potentially effective strategy (Irish et al., 2015); however, there are no sleep hygiene programs developed for young adults with IDD.

Methods

A theory-driven sleep hygiene program was developed using the Transtheoretical Model of Change (TTM). Horizons School student participants engaged in a six-week program. Each week, one hourly group session was delivered focusing on a different sleep hygiene topic.

Purpose: To promote healthy lifestyle choices to improve sleep performance of participants.

Participant Criteria:
a) A Student at The Horizons School
b) Between the ages of 18 and 26
c) Diagnosed with IDD
d) English language speaker

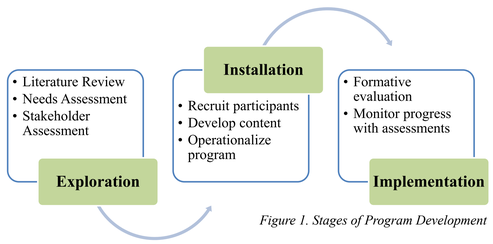

Figure 1. Stages of Program Development

Nine students participated and were assessed using a pre-test post-test design with the following assessments:

- Pittsburgh Sleep Quality Index (PSQI)
- Readiness to Change Questionnaire adapted for sleep (RTCQ)
- Self-Efficacy for Sleep (SSES)
- wrist accelerometry (Fitbit Inspire 3)

Table 1. Educational Modules

Session Theme	Week	Topics Covered
The Importance of Sleep	**1**	Sleep education; the sleep cycle; behavioral accountability
Building a Healthy Nightly Routine	**2**	Habits vs. routines; The impact of habits/routines on health; developing an individualized night routine
Management of Electronic Media Before Bed	**3**	Types of electronic media; screentime exposure before bed; using online applications to build healthy sleep habits
The Sleep Environment	**4**	Bedroom configuration; light and noise pollution; regulating temperature
Relax the Mind and Body Before Bed	**5**	Progressive muscle relaxation (PMR); breathing exercises; challenging dysfunctional thought processes
Nutrition and Exercise—Their Impact on Sleep	**6**	Scheduling food intake & physical activity; how to talk to my clinician
Goal Setting	**Weekly**	Discussion of goals from previous sessions

Results

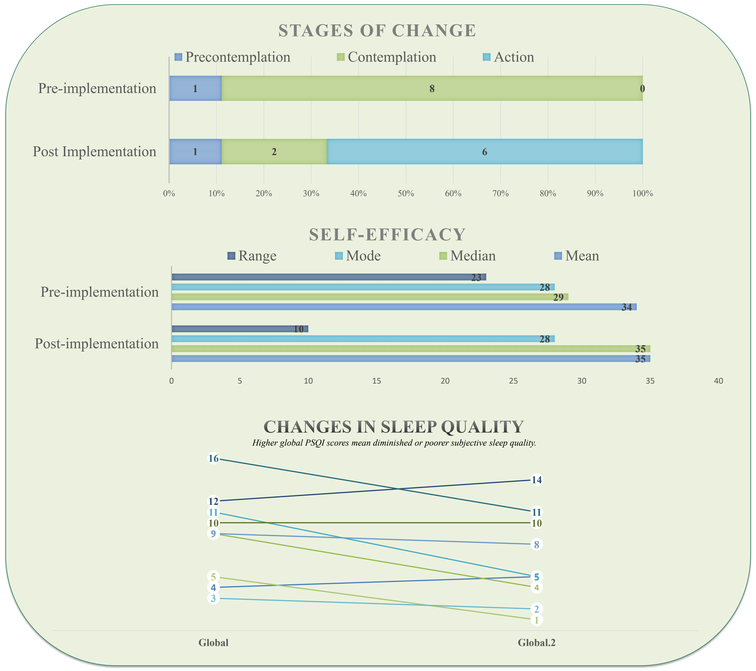

Table 2. Accelerometry Results (n= 8)

	Sleep Duration (Mean)	Average Bedtime Range	Number of Significant Nighttime Awakenings (Mean)	Time Spent Awake During Night (Mean)	Total Number of Daytime Sleeping Events	Sleep Efficiency (Mean)
Pre-test	6 hrs. 42 min.	10:17 PM–1: 20 AM	3.75 per night	60.5 min.	6	87.1%
Post-test	6 hrs. 53 min.	10:15 PM–12:27 AM	2.80 per night	53.9 min.	4	88%

Table 3. Student Perceptions of Program Delivery

Strengths of Program	Students highly valued: • the session focusing on relaxation techniques • sessions that promoted interactive activities such as creating a detailed nightly routine and auditing their sleep environment • helpful sleep hygiene techniques to use within their routine.
Areas of Improvement for Program	• Some students did not like the timing of class sessions in the morning. • Some students would have liked to have seen an increase in interactive activities in some sessions. • Other recommendations include increasing focus on environmental adaptations and personal hygiene.
Contextual Barriers of Program Participants	Students voiced that certain aspects of their personal context influence their ability to make healthy sleep choices. Some of these include: • a lack of previous sleep knowledge • the introduction of competing vocational activities for 2nd year students • concerns about medication dependency for sleep • inflexibilities within their current sleep environment • mental health concerns • Students describe use and availability of electronic devices as an inhibitor of sleep health.

Discussion

- Most participants (66%) progressed through their initial stage of change into the action phase. Other sleep hygiene programs using the TTM reported an increase in healthy behaviors (Cassoff et al., 2015). Participants who were identified in the "action stage" saw more significant improvements in objective sleep measures than those in other stages of change.
- Changes in self-efficacy varied among participants post program delivery. Students with learning disabilities often face difficulties with estimating self-efficacy in nonacademic tasks and may report high self-efficacy despite poorer outcomes (Schunk & DiBenedetto, 2022). The consciousness raising technique was used in all sessions to improve skill estimation with sleep-related behaviors.
- Students perceived several barriers that hinder sleep behavior consistency. The primary inhibitor identified by students was electronic media usage. Some participants expressed reluctance when asked to modify electronic use before bed. Increased screentime has been associated with lower sleep duration in disability populations (Aishworiya et al., 2018).
- On average, the sleep hygiene educational program saw an increase in objective and/or subjective sleep measures for most participants. It should be noted that subjective and objective measures did not always concur for each participant. This may be attributed to misperceptions of sleep performance.
- Of the sleep parameters analyzed within the program, bedtime consistency and sleep disturbances had the most significant improvements for participants. This may be due to the program's focus on individual nighttime scheduling and modification of the sleep environment.

Lessons Learned

- The use of interactive games and activities throughout educational sessions increased engagement and participation.
- Students could benefit from increased contextual supports in future programming, such as collaboration with residential assistants and family members to increase participation in daily sleep hygiene practices.
- Students might benefit from wearing the sleep tracker continuously throughout program to increase accountability and monitor progress.
- Provide in-depth focus on fewer sleep hygiene topics. Mastery of a few new habits may lead to behavioral maintenance. Compliance is more likely when specific sleep hygiene practices are positively reinforced.

References

Acknowledgement & Contact information

A special thank you to Dr. Wingo and Dr. Geiger for their mentorship and guidance with this project. I'd also like to thank the UAB OT Department for their continued dedication to the success of their students. Lastly, I'd like to thank The Horizons School faculty, staff, and students for their participation in this program.

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