The Night Out Task: Everyday Functioning Assessment of Older and Younger Adults



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Introduction

- Although cognitive functioning varies as a result of a number of genetic and environmental factors across the lifespan, there is a positive association between increasing age and decline in specific cognitive abilities (e.g., executive functioning, speeded processing).
- A decline in cognitive abilities can negatively impact the way older adults complete tasks in their everyday life.

Results

- As seen in Table 3, the older adults required more time to complete the NOT than the younger adults.
- Differences between younger and older adults in the sequencing score and overall score did not reach a statistical level of significance.

Table 3. Older Adult and Younger Adult Performances on NOT Variables

Older Adults (65+)	Young Adults (18-40)	T-Value	Cohen's d Effect	
N = 19	N = 18		Sizo	

Conclusions

- It was found that older adults needed more time than younger adults to complete the NOT, but no significant group differences were found in sequencing total and NOT overall score.
- The results for NOT overall score are possibly suggestive of poorer performance in the OA group; participants will continue to be tested until a larger sample size is accumulated to determine whether group differences will emerge.

- This study evaluated age-related performance differences on a laboratory performance-based task, the Night Out Task (NOT), which is designed to capture skills involved in more real-world complex planning, problem-solving, and multitasking.
- A limited number of testing measures are designed to evaluate everyday functioning while taking place in a laboratory setting, which as a result may make the NOT an important addition into the neuropsychology field.
- Additionally, interdisciplinary collaboration has taken place to work on creating a tablet version of the NOT, with the goal to make the assessment more reliable and user-friendly for clinicians.

			N – 10			JIEC
	Μ	SD	Μ	SD		
Total Task Execution Time (in seconds)	729.16	262.36	566.11	160.18	.003*	.75
Correct Sequencing Total	4.63	.96	4.67	.91	.679	.04
NOT Overall Score	12.26	2.56	11.39	2.17	.272	.37

* Indicates *p* < .05

Night Out Task: Tablet Version

Methods

Participants

- 18 young adults (11 males, 7 females) with ages ranging between 18-36 years old (M = 21.0, SD = 4.12).
- 19 cognitively healthy older adults (7 males, 12 females) with ages ranging between 65-83 years old (M = 71.37, SD = 4.60).
- Up to this point, the NOT has been administered and scored using a basic paper and pencil model.
- Creating an application version (see Figure 2, 3, & 4) of this assessment will:
 - Improve standardization
 - Reduce administration complexity for clinicians
 - Allow for easier analysis of a larger number of variables

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Recipe START INGREDIENTS	ADDITIONAL NTRA PERSEVER	RATION WANDERING REQUESTS HELP	Travel Bag START
GATHERS ITEMS BEFORE READING RECIPE	Movie start	Snack START	LOOKS IN MULTIPLE LOCATIONS
RETRIEVAL INEFFICIENT (>2 TRIPS EACH CUP.)	LOOK IN MULTIPLE LOCATIONS	LOOKS IN MULTIPLE LOCATIONS	CARRIES ITEMS TO DOOR BY HAND
DOES NOT EFFICIENTLY LOCATE RECIPE (INDEX/TOC)	RECORDS LEAVING BEFORE 6:25	TAKES MORE THAN ONE SNACK	USES ALTERNATIVE CARRIER, NOT BAG
GATHERS CREAMY PB, NOT CHUNKY	RECORDS >\$7 SENIOR, >\$11 ADULT	CHOOSES CANDY, NOT MILK CHOC.	DOES NOT PUT ITEMS IN BAG (EXCEPTION: TEA, \$, PHONE BY HAND)
GATHERS TABLE SALT, NOT KOSHER	RETURNS TO SCHEDULE AFTER	CHANGES SNACK AFTER FINISHING TASK	DOES NOT FINISH TASK

RECORDS COST FOR ONLY ONE PER

RECORDS >\$3.50 SENIOR. >\$5.50 AD

RECORDS LEAVING AFTER 6:3

DOES NOT RECORD ANSWERS

OOSES NON-SNACK

CHOOSES DARK CHOC.

DOES NOT BRING SNACK TO DOOI

DOES NOT FINISH TASK

Tea START

LOOKS IN MULTIPLE LOCATIONS

WAITS FOR TEA, NOT MULTITASKING

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SETS TEA, NOT DIRECTLY PUT IN TH

- The newly developed NOT application will:
 - Increase the speed of coding and the number of variables that can be coded, allowing for the data to be retrieved quicker.
 - Decrease the amount of time it will take to fully process a participant's data, increasing the capacity for testing more participants and improving the ease of use and efficiency of the assessment.

Future Implications

- Future work will be needed to determine whether older individuals with cognitive impairment perform poorly on the NOT; preliminary data indicates that individuals with mild cognitive impairment perform more poorly than healthy older adults on the NOT.
- The NOT is designed to be a proxy measure of

Exclusion criteria for older adults: Meets criteria for mild cognitive impairment.

Procedure

- Participants completed the NOT, which requires the execution of eight different tasks to prepare for a night out while in a laboratory setting (see Table 1 & Figure 1).
- Experimenters observed and coded the participant's performance. For each task, participants could receive one of four possible completion scores dependent on their performance on each specific task (see Table 2).
- The total time to complete each task, as well as total task execution time, was recorded in seconds.

 Table 2. NOT Completion Scores
 Completion Scores 1 = Complete – Efficient Table 1. NOT Tasks 2 = Complete – Inefficient **Eight Tasks** 3 = Incomplete orMovie Schedule Inaccurate Tea 4 = Not Attempted Snacks Change Figure 1. NOT Laboratory Testing Room Phone Call to Friend Recipe

I Night Out Task Records Leaving House at: 10:20 Change recorded Change gathered: Cost of movie determined prior to first attempt at retrieving change Recipe read prior to retrieving first food item: Phone call placed near end (no new task aside exit initiated): Comments _ **Figure 3. Additional Information Page**

• Code results quickly while reducing error



SATHERS COFFEE. NOT ESPRESS

GATHERS EXTRA ITEMS

DOES NOT GATHER 1-2 NONESSENTIAL ITEMS

ARRIES ALL ITEMS TO BAG, NOT BAG TO ITE

	Inefficient: 2 Incomp	lete: 2 Inaccurate: 2	
Movie Schedule	Теа	Snack	Change
Completion Score: 1	Completion Score: 2	Completion Score: 3	Completion Score: 3
Active Time: 52	Active Time: 120	Active Time: 37	Active Time: 22
w/multitask: 52	w/multitask: 120	w/multitask: 37	w/multitask: 22
Sequencing: 1 - 3	Sequencing: 3 - 6	Sequencing: 2 - 1	Sequencing: 4 - 2
Simultaneous: 4	Simultaneous: 7	Simultaneous: 3	Simultaneous: 2
Inefficient errors: 0	Inefficient errors: 1	Inefficient errors: 0	Inefficient errors: 0
Incomplete errors: 0	Incomplete errors: 0	Incomplete errors: 1	Incomplete errors: 1
Inaccurate errors: 0	Inaccurate errors: 0	Inaccurate errors: 1	Inaccurate errors: 1
Phone	Recipe	Travel	Exit
Completion Score: 1	Completion Score: 2	Completion Score: 1	Completion Score: 1
Active Time: 16	Active Time: 67	Active Time: 100	Active Time: 5

everyday functional abilities that can be administered in the laboratory. Future work will be needed to determine the relationship between the NOT and other measures of everyday functioning. This is challenging as there is no "gold standard" measure for assessing everyday functioning.

• With the development of the coding application, future work can begin to look at more nuanced performance characteristics of the NOT. This may help distinguish between individuals who are having or are at risk for difficulties functioning independently, so that interventions can be initiated early to keep people independent.

Acknowledgements

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w/multitask: 67 w/multitask: 100 w/multitask: 5 w/multitask: 16 Sequencing: 5 - 7 Sequencing: 8 - 8 Sequencing: 6 - 4 Simultaneous: 0 Simultaneous: 7 Simultaneous: 3 Simultaneous: Inefficient errors: 7 Inefficient errors: 0 Inefficient errors: 0 Incomplete errors: (Incomplete errors: 0 ncomplete errors: (Inaccurate errors: 0 Inaccurate errors: 0 Inaccurate errors: 0

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