

Northwestern Medicine Emergency Department Study

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Study Overview

The present study used data collected from patients at a 57-bed Emergency Department (a verified Level 1 Trauma Center) at a major urban university hospital. The present study was granted approval by the [blinded] Institutional Review Board (Protocol # STU00094889; Behavior Profiling in ED), and data were subsequently collected from August 2014 to January 2015. To recruit participants, patients who were close to being discharged from the emergency department were asked to participate (the nurses on staff provided guidance to the interviewers about which patients would be best to approach). The patients who agreed to participate were administered a brief mental awareness and cognitive impairment inventory: the Short Portable Mental Status Questionnaire (SPMSQ; Pfeiffer, 1975). Sixty-five percent of those who were approached agreed to participate and had intact intellectual functioning or only mild intellectual impairment (0-4 errors out of 10 possible errors on the SPMSQ), resulting in a final sample of 200 patients (58% female). The final sample was diverse with respect to age, race and ethnicity, and education level. Participants ranged in age from 17 to 86 years (median age = 39 years). Forty-six percent identified as White, non-Hispanic/Latino, 30% identified as Black/African-American, 15% identified as Hispanic/Latino, 4% identified as Asian, and 5% identified as multiracial. In terms of education level, 6% of participants had less than a high school degree, 14% were high school graduates, 60% had some college or a college degree, and 20% had more than a college degree. The median income ranged from \$50,000 to \$100,000 per year. Data were collected electronically via tablet-based questionnaires and included participants' reports of demographic characteristics, health behaviors (e.g., smoking), Big Five personality traits, health literacy, chronic conditions, and healthcare utilization.

Approximately 1-2 weeks after being discharged from the emergency department, patients were contacted via telephone and queried on several aspects of their emergency department visit(s) including the reason for their visit(s), mode(s) of transport, and whether they made an unscheduled return to the emergency department since their initial visit. Additionally, participants reported on the extent to which they adhered to their initial post-discharge instructions (i.e., followed-up with their primary care physician, filled prescriptions), as well as their satisfaction with their emergency department experience(s). Of the 197 people included in the present analyses, 160 completed the follow-up telephone survey (81%). The majority of participants indicated that they went to the emergency department on their initial visit because of symptoms such as pain, dizziness/fainting, headaches/migraines, dehydration, high blood pressure, or kidney stones/urinary problems (44% of sample). The remaining participants went to the emergency department because of an accident (24%), an infection, virus, or allergy (12%), women's health issues related to pregnancy or miscarriage (6%), post-operative complications or doctor referrals (4%), a chronic condition (3%), psychiatric problems (3%), or something else (4%).

Data Dictionary

Variable	Label
Intro / Screening Questions	
record_id	Record ID
idcheck	Participant ID
problemid	173 response bias on B5 variables, 115 and 152 rated as poor data quality by interviewers
spmsq_int_dt	Interview Date
spmsq_int_ra	Interviewer (RA)
spmsqedu	SPMSQ YEARS OF EDUCATION:
Cognitive Screening	
spmsq1	1. What is the date today?
spmsq2	2. What day of the week is it?
spmsq3	3. What is the name of this place?
spmsq4	4. What is your telephone number?
spmsq4a	4a. What is your street address?
spmsq5	5. How old are you?
spmsq6	6. When were you born?
spmsq7	7. Who is the president of the United States now?
spmsq8	8. Who was the president just before him?
spmsq9	9. What was your mothers maiden name?
spmsq10	10. Subtract 3 from 20 and keep subtracting 3 from each new number, all the way down.
spmsq11	11. Total number of Errors:
spsmq_complete	Complete?
Baseline Assessment (T1)	
Demographics	
edp16	16. Age (in years)
edp16a	16a. If Dont Know, then age:
edpgender	Gender
edp23	23. What is your current marital status? (Choose one)
ethnicity	White, non-Hispanic/Latino Black or African-American Asian Hispanic or Latino Multiracial
edp26	26. Is English your primary language?
edp26a	26a. If no, at what age did you learn English?
edp27	27. What was the last year of school you completed? (Choose one)
edp28	28. Please choose the income category that best describes your total household annual income before taxes (include salary, social security, pension, and other income)? (Choose only one)
Health	
edp15	15. On a scale from 0 to 100, with 0 being death and 100 being perfect health, how do you rate your current health?

edp17	17. In general, how would you say your health was one month ago?
edp22a	Anemia (low blood) - including Sickle Cell Anemia
edp22b	Asthma, emphysema or chronic bronchitis
edp22c	Arthritis or rheumatism
edp22d	Back problems (including spine or disk)
edp22e	Cancer, diagnosed in the past 3 years
edp22f	Depression
edp22g	Diabetes
edp22h	Digestive problems (such as ulcer, colitis and gallbladder disease)
edp22i	Heart trouble (such as angina, congestive heart failure and coronary artery disease)
edp22j	High blood pressure
edp22k	HIV illness or AIDS
edp22l	Kidney disease
edp22m	Liver problems (such as cirrhosis)
edp22n	Stroke
Smoking	
edpsmokercheck	Are you, or have you ever been, a smoker?
edp29	29. Have you smoked at least 100 cigarettes in your entire life?
edp30	30. Do you NOW smoke cigarettes every day, some days, or not at all?
edp31	31. How long has it been since you quit smoking cigarettes?
edp32	32. Have you smoked in the last 30 days?
Healthcare Utilization	
edp18	18. Do you have a regular health care provider who takes care of most of your health problems? [a doctor or a nurse?]
edp19	19. What kind of doctor [or nurse] is that? (Choose only one)
edp19a	19a. Specify Other / Specify Alternative practitioner
edp20	20. On average, over the past few (3-4) years, how often do you see him/her?
edp21	21. Besides this ED visit, have you been to the ED in the last 12 months?
Health Literacy	
edp33	33. How often do you have problems learning about your medical condition because of difficulty understanding written information? (Choose one)
edp34	34. How confident are you filling out medical forms by yourself? (Choose one)
edp35	35. How often do you have someone help you read hospital material? (Choose one)
Personality and Individual Differences	
edp12	12. How much of the time... Do you feel calm and peaceful?

edp13	13. How much of the time... Do you have a lot of energy?
edp14	14. How much of the time... Do you feel downhearted and blue?
edp36a	Outgoing
edp36b	Helpful
edp36c	Moody
edp36d	Organized
edp36e	Nervous
edp36f	Industrious
edp36g	Traditional
edp36h	Worrying
edp36i	Responsible
edp36j	Forceful
edp36k	Self-controlled
edp36l	Caring
edp36m	Persistent
edp36n	Creative
edp36o	Assertive
edp36p	Warm
edp36q	Imaginative
edp36r	Softhearted
edp36s	Orderly
edp36t	Outspoken
edp36u	Intelligent
edp36v	Curious
edp36w	Active
edp36x	Reliable
edp36y	Broad-minded
edp36z	Sympathetic
edp36aa	Talkative
edp36bb	Sophisticated
edp36cc	Adventurous
edp36dd	Dominant
edp36ee	Thorough
edp36ff	Careless
edp36gg	Calm
edp36hh	Impulsive
edp36ii	Friendly
edp36jj	Lively
edp36kk	Hardworking
edp36ll	Self-confident
Word Recall and Recognition Tasks	
edp37__1	37. Now, please tell me the words you can recall. (choice=HOTEL)
edp37__2	37. Now, please tell me the words you can recall. (choice=RIVER)
edp37__3	37. Now, please tell me the words you can recall. (choice=TREE)

edp37__4	37. Now, please tell me the words you can recall. (choice=SKIN)
edp37__5	37. Now, please tell me the words you can recall. (choice=GOLD)
edp37__6	37. Now, please tell me the words you can recall. (choice=MARKET)
edp37__7	37. Now, please tell me the words you can recall. (choice=PAPER)
edp37__8	37. Now, please tell me the words you can recall. (choice=CHILD)
edp37__9	37. Now, please tell me the words you can recall. (choice=KING)
edp37__10	37. Now, please tell me the words you can recall. (choice=BOOK)
edp37a	37a. TOTAL NUMBER OF WRONG WORDS SAID:
edp37b	37b. NUMBER OF WORDS REMEMBERED CORRECTLY:
edp37c	37c. NUMBER OF FORGOTTEN WORDS:
edp37d	37d. NONE REMEMBERED
edp37e__1	37e. RA: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING PROBLEMS OCCURRED IN RELATION TO WORD RECALL (CHOOSE ALL THAT APPLY): (choice=Subject had difficulty hearing any of the words)
edp37e__2	37e. RA: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING PROBLEMS OCCURRED IN RELATION TO WORD RECALL (CHOOSE ALL THAT APPLY): (choice=Interruption occurred while you were reading the list)
edp37e__3	37e. RA: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING PROBLEMS OCCURRED IN RELATION TO WORD RECALL (CHOOSE ALL THAT APPLY): (choice=Other problem (Specify in 37f, below))
edp37e__4	37e. RA: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING PROBLEMS OCCURRED IN RELATION TO WORD RECALL (CHOOSE ALL THAT APPLY): (choice=No problems occurred)
edp37e__5	37e. RA: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING PROBLEMS OCCURRED IN RELATION TO WORD RECALL (CHOOSE ALL THAT APPLY): (choice=Dont Know)
edp37e__6	37e. RA: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING PROBLEMS OCCURRED IN RELATION TO WORD RECALL (CHOOSE ALL THAT APPLY): (choice=Refused)
edp37f	37f. Specify other problem:
edp38	38. What is the meaning of the word: REPAIR
edp38a	38a. REPAIR
edp39	39. What is the meaning of the word: ENORMOUS

edp39a	39a. ENORMOUS
edp40	40. What is the meaning of the word: DOMESTIC
edp40a	40a. DOMESTIC
edp41	41. What is the meaning of the word: COMPASSION
edp41a	41a. COMPASSION
edp42	42. What is the meaning of the word: AUDACIOUS
edp42a	42a. AUDACIOUS
edp43__1	43. Please tell me any of the words you remember now. (choice=HOTEL)
edp43__2	43. Please tell me any of the words you remember now. (choice=RIVER)
edp43__3	43. Please tell me any of the words you remember now. (choice=TREE)
edp43__4	43. Please tell me any of the words you remember now. (choice=SKIN)
edp43__5	43. Please tell me any of the words you remember now. (choice=GOLD)
edp43__6	43. Please tell me any of the words you remember now. (choice=MARKET)
edp43__7	43. Please tell me any of the words you remember now. (choice=PAPER)
edp43__8	43. Please tell me any of the words you remember now. (choice=CHILD)
edp43__9	43. Please tell me any of the words you remember now. (choice=KING)
edp43__10	43. Please tell me any of the words you remember now. (choice=BOOK)
edp43a	43a. TOTAL NUMBER OF WRONG WORDS SAID:
edp43b	43b. NUMBER OF WORDS REMEMBERED CORRECTLY:
edp43c	43c. NUMBER OF FORGOTTEN WORDS:
edp43d	43d. NONE REMEMBERED
edp43e	43e. RA: PLEASE INDICATE WHETHER THE SUBJECT WROTE DOWN ANY OF THE WORDS OR USED SOME KIND OF AID TO RECALL THE WORDS IN THE LIST SINCE THE FIRST (IMMEDIATE RECALL) PORTION OF THE TEST.
edp44	Record Questions
word_recall_taskquestions_complete	Complete?
Interviewer Questions	
edp45	INTERVIEWER: 1 Source of Data
edp46	2. Rate the Quality of the data
edp47	3. Please comment on serious problems with the interview, such as Subjects difficulty hearing or understanding the questions, etc., which affected the quality of the interview, or quality of data due to patients understanding of questions or mental status:
edp48	Participants care plan:
Follow-Up Assessment (T2)	

idcheck5	Participant ID
followupdate	Date of Follow-up Telephone Survey
Post-Discharge Adherence and Unscheduled Returns	
edptsd	I have a few questions about how you have been doing since you were discharged from the Emergency Department on:
edpts1	1. First, did you fill the prescription(s) that you received at discharge?
edpts1a	1a. Please tell us why you did not fill the prescription you were given.
edpts2	2. Did you take, or are you currently taking, the prescription as directed?
edpts2a	2a. Please tell us why you are not taking the prescription as directed.
edpts3	3. Have you followed up with the physician(s) you were recommended to at discharge?
edpts3a	3a. Please tell us why you have not followed up with the physician you were recommended to at discharge:
edpts3ab	3ab. For some other reason please specify:
edpts4	4. How did you arrive to the Emergency Department on that visit?
edptsaa	4aa. If other, Please specify:
edptsa	4a. What would you say was the cause of that visit to the Emergency Department?
edpts5	5. Have you returned to an Emergency Department since that discharge?
edpts5a	5a. Was your return to the Emergency Department related to the initial visit?
edpts5b	5b. What would you say was the cause of that last visit to the Emergency Department?
edpts5c	5c. Were you hospitalized (admitted) at that [second] visit to the Emergency Department?
edpts5d	5d. How did you arrive to the Emergency Department on that visit?
edpts5da	5da. If other, please specify:
Emergency Department Satisfaction	
edpts6	6. Thinking about your most recent visit to the Emergency Department, how would you rate the care you received?
edpts7	7. Overall, how well do you think Emergency Medicine Services addressed your needs [that day]?
edpts8	8. What concerns were not addressed as well as you would have liked, if any?
edpts9	9. Finally, do you have any comments or experiences about your last visit to the Emergency Department that you would like to share with us?
Attrition	
followup_telephone_survey_complete	Complete?

Available Measure Write-Ups

Big Five personality traits

At Time 1, participants completed the Midlife Development Inventory (MIDI) personality scales (Lachman & Weaver, 1997), a 26-item measure of the Big Five personality traits that has been shown to be a reliable and well-validated tool to measure personality in large nationally representative studies (Brim et al., 2004; Sonnegra et al., 2014). Based on prior research (Hill & Roberts, 2011), seven additional Conscientiousness items (i.e., industrious, traditional, self-controlled, persistent, orderly, reliable, impulsive) were also administered to participants because it was hypothesized at study conception that Conscientiousness had the most theoretical relevance for predicting post-discharge outcomes. Participants responded to the 33 items on a 4-point Likert scale ranging from 1 (a lot) to 4 (not at all). Items were reverse-scored (when appropriate) so that higher values represented greater levels of the personality trait and lower values represented lower levels of the personality trait. Items were then averaged together to create the Big Five personality domains: Extraversion (4 items, e.g., “outgoing”), Agreeableness (6 items, e.g., “caring”), Conscientiousness (12 items, e.g., “self-controlled”), Neuroticism (4 items, e.g., “worrying”), and Openness to Experience (7 items, e.g., “broadminded”).

Post-discharge outcomes

At follow-up (1-2 weeks post-discharge), participants reported on three outcomes related to their discharge from the emergency department via phone interview. Specifically, participants responded to dichotomous (0=no, 1=yes) questions that asked, “Have you followed up with the physician(s) you were recommended to at discharge?” and “Did you fill the prescription(s) that you received at discharge?” Participants also reported on whether they made an unscheduled return to an emergency department by responding to the following question: “Have you returned to an Emergency Department since that discharge?” Responses were coded dichotomously as 0 (no) or 1 (yes).

List of Publications with Data

1. Atherton, O.E., Willroth, E.C., Schwaba, T., Goktan, A.J., Graham, E.K., Condon, D.M., Rao, M.B., & Mroczek, D.K. (revise and resubmit). Personality predictors of emergency department post-discharge outcomes. *Personality Science*.

OSF Page (with R code): <https://osf.io/ey5qk/>