

Depression and Suicidal Behaviors in Medicare Primary Care Patients Under Age 65

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OBJECTIVE: To examine suicidal behavior and depression prevalence among a group of Medicare patients under age 65 with functional impairment and recent significant health care services use.

DESIGN: An observational study of baseline characteristics of participants in a randomized controlled trial.

SETTING: A Medicare demonstration ($N=1,605$) that enrolled primary care patients in 8 counties in New York, 6 counties in West Virginia, and 5 counties in Ohio.

PATIENTS/PARTICIPANTS: All demonstration participants under age 65 ($n=164$). Participants were required to have impairment in at least 2 activities of daily living or 3 instrumental activities of daily living, and to have had recent significant health care use.

INTERVENTIONS: None.

MEASUREMENTS AND MAIN RESULTS: The Paykel questionnaire for suicidal ideation and attempts, the Mini-international Neuropsychiatric Interview Major Depressive Episode module, and the 15-item Geriatric Depression Scale were administered at baseline; 14.8% of the patients indicated suicidal ideation during the past year, 4.9% reported a suicide attempt during that time, 25.9% indicated at least 1 lifetime suicide attempt, 34.6% had a major depressive episode in the last month, and 58.3% had clinically significant depressive symptoms during the previous week.

CONCLUSIONS: These levels of suicidal ideation and behaviors and of depression are far higher than those found in studies of nonelderly American adults, and may indicate the need for routine screening in this population.

KEY WORDS: depression; suicidal ideation; suicide attempts; Medicare; disabled.

DOI: 10.1111/j.1525-1497.2005.40244.x

J GEN INTERN MED 2005; 20:397-403.

Medicare patients under age 65 comprise a "population at risk."¹ This group is defined by the combination of health insurance status (enrollment in Medicare) and disability. The vast majority of nonelderly Medicare beneficiaries are eligible for Medicare because they qualified for Social Security Disability Insurance (SSDI) for at least 2 years and are expected to be disabled for the remainder of their lives.² Disability is associated with greater morbidity, both physical^{3,4} and mental,^{5,6} and with greater mortality.^{7,8} Furthermore, morbidity,⁹ disability,¹⁰ and mortality¹¹ are each associated with higher utilization of health care services, especially hospital and nursing home use, and elevated health care expenditures.

Another important way that Medicare patients under age 65 can be considered to be a population at risk is that a substantial proportion has significant psychopathology. Many beneficiaries under age 65 qualified for SSDI through having a mental disability,¹² and one third have mental illnesses.¹³ Their disorders include mental retardation and dementia, but also other diagnoses associated with severe functional impairment.¹⁴ Depression has been found to be especially prevalent,¹⁵ which is important because it has been found to be associated with greater health care utilization, including hospitalization,¹⁶⁻¹⁸ and higher health care costs.^{16,18-20}

Almost 5.5 million Americans under the age of 65 are enrolled in Medicare. This group increased by almost 2 million persons between 1993 and 2003.²¹

We are unaware of any studies that have examined how Medicare patients under age 65 are a population at risk in terms of suicidal ideation and other suicidal behaviors. Depression and suicidal behaviors are associated with human suffering, poorer functioning,²²⁻²⁵ and higher mortality.^{26,27} Suicidal behaviors are also associated with high costs due to hospital services and other related expenses.²⁸

A substantial proportion of the Medicare under-65 population has impairments in activities of daily living (ADL) or in instrumental ADLs (IADL).²⁹ ADL impairment has been found to be associated with suicidal ideation^{30,31} and other suicidal behaviors,³² as well as with depression.^{33,34}

The Medicare Primary and Consumer-directed Care demonstration offered us the opportunity to study suicidal ideation and behaviors. Our aim was to examine the prevalence of suicidal ideation, reported suicide attempts, and depression in Medicare primary care patients under age 65 with ADL and/or IADL impairment and recent significant health care services use. Our study must be considered preliminary because it uses baseline data collected for a randomized controlled trial rather than from an epidemiologically defined sample of the Medicare under-age 65 population.

METHODS

Study Design

The study consisted of the examination of baseline data collected from the Medicare patients under age 65 ($n=164$) who participated in the Medicare Primary and Consumer-directed Care demonstration ($N=1,605$), a randomized controlled trial. The purpose of the demonstration was to test the acceptability and effectiveness of a Health Promotion Nurse intervention, a voucher that reimbursed for services, supplies, and equipment not covered under traditional Medicare, and the combination of the voucher and the nurse intervention. Human subjects review board approval was obtained.

Accepted for publication October 27, 2004

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Recruitment and Enrollment Criteria

With one exception, virtually all primary care physicians in 19 counties (8 in western New York, 6 in West Virginia, and 5 in Ohio) were recruited for the demonstration. The exception was in Monroe County, NY, where one of the health care systems preferred that its physicians not participate. A total of 307 primary care physicians enrolled, including 249 in New York and 58 in West Virginia and Ohio. The 164 patients under age 65 were cared for by 98 primary care physicians (68 in NY and 30 in WV and OH).

Patients who met the following criteria were then recruited from each participating physician's practice: 1) living in the community (not in a nursing home or other institution), 2) needing or receiving help with at least 2 ADLs or at least 3 IADLs, and 3) having had recent significant health care services use (i.e., having been a hospital, nursing home, or Medicare home health care patient during the past year, or having had at least 2 emergency room visits during the past 6 months). Exclusionary criteria included receiving Medicare End Stage Renal Disease Program benefits. Prior to randomization, patients were interviewed in their homes (between May 1998 and June 2000). Informed consent was obtained.

Measures

All measures were administered by trained interviewers, most of whom were nurses. The main outcome measures for the study reported here follow.

Paykel Questionnaire³⁵. The Paykel questionnaire is one of the most widely used measures of suicidal ideation. It consists of the following 5 questions: 1) Has there been a time in the last year that you felt life was not worth living? 2) Has there been a time in the last year that you wished you were dead—for instance, that you could go to sleep and not wake up? 3) Has there been a time in the last year that you thought of taking your own life, even if you would not really do it? 4) Has there been a time in the last year when you have reached the point where you seriously considered taking your life, or perhaps made plans how you would go about doing it? 5) In the last year have you made an attempt on your life? "Suicidal ideation" was rated as present with a response of "yes" to questions 3, 4, and/or 5.

Lifetime Suicide Attempt. A separate "yes/no" question was asked: Throughout your whole life, have you ever made an attempt on your life?

Mini-international Neuropsychiatric Interview (MINI)—Major Depressive Episode (MDE) Module³⁶. This measure consists of the 9 items necessary to make the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV) diagnosis of a major depressive episode. The patient-rated version of the MINI has been shown to be valid and reliable overall when measured against the psychiatric patient version of the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R) (SCID-P).³⁷ Specifically, agreement between the MINI-MDE and the SCID-P was good for major depressive disorder, with a κ of 0.55 and a sensitivity and specificity of .77 and .79, respectively.³⁸ Several of the individual questions were modified

from the original, and the time period was extended to the past month rather than the previous 2 weeks.

Fifteen-item Geriatric Depression Scale (GDS)³⁹. The 15-item GDS is a self-report measure of depressive symptoms during the prior week. A validated and reliable scale,⁴⁰ it is recommended as a screening tool for depression in primary care patients.⁴¹ We used the GDS for the demonstration evaluation because we wanted a depression measure that would include few somatic symptoms, as for many elderly patients (the vast majority of the Medicare demonstration participants were elderly) these symptoms may be due to their chronic physical illnesses. As well, we included the GDS as a continuous measure of depression symptom severity, a parameter for which the MINI is less well suited. Although the GDS was developed for the elderly, it has been employed in studies including nongeriatric populations⁴² and has been found to be valid and reliable even for college undergraduates ages 17 to 30 years.⁴³ When we analyzed the GDS as a categorical rather than as a continuous variable, we utilized the following customary categories: no depression, 0 to 5 symptoms; mild to moderate depression, 6 to 10; and severe depression, 11 to 15.

It is important to be aware that the time periods covered by the Paykel questionnaire, the MINI-MDE, and the GDS are different. The Paykel questionnaire asks about the last year, the MINI-MDE the past month, and the GDS the prior week. It is also important to note that no interviewer judgment is required for the administration of the Paykel, MINI-MDE, or GDS questionnaires. All of the items are simple "yes" or "no" questions answered by the respondent. Finally, the GDS was not administered to 13 significantly cognitively impaired patients.

Other important variables included the following.

Activities of Daily Living⁴⁴

Dependence. Six questions were asked concerning ADL dependence: transferring from bed to chair, toileting, dressing, bathing, eating/feeding, and walking.

Instrumental Activities of Daily Living⁴⁴

Dependence. Six questions were asked concerning IADL dependence: meal preparation, ordinary housework, managing finances, managing medications, telephone use, and shopping.

Statistical Analysis

Univariate analyses (mean, standard deviation, median, range, skewness, and kurtosis) and internal consistency reliability (Cronbach's α) were calculated for the GDS. A Spearman correlation was calculated between the MINI-MDE and the GDS. Basic descriptive analyses were performed to describe the prevalence of suicidal behaviors and depression as well as baseline characteristics. SAS version 8.0 was employed (SAS Institute, Cary, NC).

RESULTS

Table 1 presents sociodemographic, social support, and health status information.

Table 1. Baseline Characteristics of Under Age-65 Medicare Beneficiaries in the Medicare Primary and Consumer-directed Care Demonstration Stratified by Reason Qualified for Supplemental Security Disability Insurance

	Physical Only		Mental Only		Physical and Mental		All	
	N	%	N	%	N	%	N	%
All	124	100.00	13	100.00	24	100.00	164	100.00
Sociodemographic characteristics								
Age, y								
<50	33	26.61	4	30.77	9	37.50	48	29.27
50-64	91	73.39	9	69.23	15	62.50	116	70.73
Gender								
Female	69	55.65	11	84.62	17	70.83	99	60.37
Male	55	44.35	2	15.38	7	29.17	65	39.63
Race								
White	109	87.90	11	84.62	23	95.83	146	89.02
African-American	10	8.06	1	7.69	1	4.17	12	7.32
Other	5	4.03	1	7.69	0	0.00	6	3.66
Hispanic	0	0.00	0	0.00	0	0.00	0	0.00
Marital status								
Married	56	45.16	6	46.15	12	50.00	75	45.73
Single	68	54.84	7	53.85	12	50.00	89	54.27
Education								
Less than high school graduate	31	25.00	1	7.69	8	33.33	40	24.39
High school graduate	45	36.29	3	23.08	6	25.00	55	33.54
Some college	34	27.42	7	53.85	5	20.83	48	29.27
College graduate	14	11.29	2	15.38	5	20.83	21	12.80
Household income								
<\$10,000	53	42.74	9	69.23	13	54.17	76	46.34
\$10,000-\$19,999	42	33.87	2	15.38	8	33.33	52	31.71
\$20,000-\$29,999	14	11.29	1	7.69	3	12.50	19	11.59
\$30,000+	15	12.10	1	7.69	0	0.00	17	10.37
Social support								
Lives alone	36	29.03	6	46.15	8	33.33	50	30.49
Number of close friends (n=162)								
0-1	38	31.15	6	46.15	9	37.50	53	32.72
2-5	57	46.72	4	30.77	14	58.33	77	47.53
6+	27	22.13	3	23.08	1	4.17	32	19.75
Number of close relatives (n=162)								
0-1	38	31.15	7	53.85	10	41.67	55	33.95
2-5	57	46.72	5	38.46	9	37.50	73	45.06
6+	27	22.13	1	7.69	5	20.83	34	20.99
Health insurance								
Medicaid	43	34.68	7	53.85	9	37.50	59	35.98
Medicare HMO (n=163)	10	8.13	1	7.69	3	12.50	15	9.20
Medigap	45	36.29	4	30.77	6	25.00	56	34.15
Any Medicare supplemental (Medicaid, Medicare HMO, or Medigap)	86	69.35	10	76.92	15	62.50	113	68.90
Health status								
Chronic conditions								
Heart condition	76	61.29	5	38.46	11	45.83	93	56.71
Arthritis	70	56.45	6	46.15	14	58.33	92	56.10
Hypertension	73	58.87	6	46.15	11	45.83	92	56.10
Chronic lung disease	43	34.68	5	38.46	8	33.33	58	35.37
Diabetes	43	34.68	3	23.08	9	37.50	55	33.54
Cancer	18	14.52	1	7.69	3	12.50	22	13.41
Stroke	16	12.90	2	15.38	1	4.17	19	11.59
Cognitively impaired	22	17.74	1	7.69	5	20.83	30	18.29
Dependence in activities of daily living								
0	37	29.84	7	53.85	12	50.00	58	35.37
1-2	42	33.87	4	30.77	6	25.00	53	32.32
3-6	45	36.29	2	15.38	6	25.00	53	32.32
Dependence in instrumental activities of daily living								
0	14	11.29	2	15.38	2	8.33	18	10.98
1-2	37	29.84	4	30.77	7	29.17	49	29.88
3+	73	58.87	7	53.85	15	62.50	97	59.15
Bodily pain (n=163)								
None	12	9.76	1	7.69	2	8.33	16	9.82
Very mild or mild	21	17.07	1	7.69	2	8.33	24	14.72
Moderate	34	27.64	6	46.15	8	33.33	48	29.45
Severe or very severe	56	45.53	5	38.46	12	50.00	75	46.01
Suicidal behavior and depression								
Suicidal ideation in past year (Paykel Questionnaire; n=162)	11	9.02	6	46.15	7	29.17	24	14.81
Suicide attempt in past year (n=162)	2	1.64	2	15.38	4	16.67	8	4.94

(Continued)

Table 1 (continued)

	Physical Only		Mental Only		Physical and Mental		All	
	N	%	N	%	N	%	N	%
Lifetime suicide attempt (n=162)	21	17.21	8	61.54	12	50.00	42	25.93
Major depressive episode in past month (MINI-MDE; n=162)	29	23.77	10	76.92	16	66.67	56	34.57
Clinically significant depressive symptomatology in past week (15-item Geriatric Depression Scale; n=151)								
Severely depressed	12	10.62	7	53.85	11	50.00	31	20.53
Mildly or moderately depressed	45	39.82	4	30.77	7	31.82	57	37.75

MINI-MDE, Mini-international Neuropsychiatric Interview–Major Depressive Episode module.

Sociodemographic Characteristics

The subjects in this study were the 164 Medicare patients under age 65 in the Medicare Primary and Consumer-directed Care Demonstration. Their mean age was 52.9 years (standard deviation [SD], 8.6; range, 23 to 64), about 60% were female, and approximately 11% were nonwhite. Their household income was very low.

Social Support

About 45% of the patients were married. Nearly one third lived alone. One third reported having 0 to 1 close friends, with 19.8% reporting no friends at all. Similarly, one third of the patients reported having 0 to 1 close relatives. Six patients reported having no close friends or relatives.

Health Status

Over half of the patients indicated that they had been told by a physician that they had a heart condition, arthritis, or hypertension, with one third reporting chronic lung disease or diabetes. Nearly one fifth of the patients were identified as being cognitively impaired. The mean number of activities of daily living in which the patients were dependent was 1.73 (SD, 1.84), with one third being dependent in 3 to 6 ADLs.

A physical rather than a mental health reason for qualification for SSDI was given for three quarters of the patients. Both a physical and a mental reason were given for 15% and a mental health reason only for 8%.

Suicidal Behavior and Depression Statistics and Psychometrics

The MINI-MDE and the GDS were highly correlated (Spearman's correlation = 0.705; $P < .001$).

The GDS had a mean score of 6.60 (SD, 3.91), a median of 6.4, and a range of 0 to 15. Its distribution was only very slightly skewed (skewness, 0.08) but was somewhat kurtotic (kurtosis, 2.00). Internal consistency reliability (Cronbach's α) of the GDS was high, 0.836.

Suicidal Behavior and Depression Prevalence

Suicidal ideation was reported by 14.8% of the patients during the past year. A total of 4.9% indicated that they had attempted suicide during the prior year, while 25.9% indicated at least 1 attempt during their lifetime. Using the MINI-MDE module, 34.6% of patients reported symptoms consistent with a Major Depressive Episode during the past month. According to conventional cut points employed for the GDS, 58.3% of the pa-

tients were classified as having clinically significant depressive symptoms during the past week—20.5% were severely depressed and another 37.8% were mildly or moderately depressed.

About 3 to 10 times as many patients who qualified for SSDI through having a mental disability (either alone or in combination with a physical reason) reported suicidal ideation in the past year, a suicide attempt in the past year, or a lifetime suicide attempt than did patients who qualified for SSDI by way of a physical disability only. The percentage of patients who the MINI indicated had a major depressive episode in the past month or who the GDS indicated were severely depressed in the past week was 2.8 to 5.1 times as high for patients who had a mental qualification for SSDI than for those who qualified through having a physical disability only. On the other hand, the prevalence of patients with mild or moderate depression was about the same among patients irrespective of whether they qualified for SSDI with a mental or physical reason (see Table 1).

DISCUSSION

We found high levels of suicidal ideation, self-reported suicide attempts, major depressive episode, and clinically significant depressive symptoms in a group of functionally impaired Medicare patients under age 65 who were cared for by primary care physicians and had recent significant health services use. Recognizing that comparisons between studies are limited by their methodological differences, we contrast the prevalence figures found here with previous studies as a means of helping to place them in a broader clinical perspective.

Suicidal Ideation and Attempts

About 15% of the patients in our study indicated having suicidal ideation in the past year. In their New Haven, Connecticut study, Paykel et al.³⁵ defined suicidal ideation more broadly than we did. Nevertheless, the prevalence rate of 8.1% they found for adults ages 40 to 59 was less than one quarter of the 35.2% rate we observed in the 108 demonstration patients in this age group. The definition Cooper-Patrick et al.⁴⁵ used in their examination of data from the Epidemiologic Catchment Area (ECA) study was similar to ours. However, the prevalence rate of 1.4% for suicidal ideation among people ages 51 to 65 in the ECA study who received care in general medical settings was about one seventh the 9.7% prevalence for the 124 people in this same age group in the demonstration.

One quarter of the patients in our study reported at least 1 suicide attempt during their lifetime. Among persons ages 45

to 64, this prevalence was over 11 times greater than that reported for the ECA study,⁴⁶ 23.4% ($n=137$) as compared with 2.1%. For people ages 45 to 54, the prevalence was over 8 times as high for the demonstration (32.1%; $n=56$) than for the National Comorbidity Survey (NCS; 3.9%).⁴⁷

Depressive Symptoms and Syndromes

One third (34.6%) of the 137 demonstration patients ages 45 to 64 were identified as having a major depressive episode during the month prior to study entry. This is nearly 16 times as high as the 2.2% 1-month prevalence reported for that age group in the ECA study.⁴⁸ The prevalence for major depression among the 56 demonstration patients ages 45 to 54 was 41.1%, a figure over 11 times as high as the prevalence of 3.6% reported for that age group for the NCS.⁴⁹

Almost 60% of the Medicare patients under age 65 in our study exhibited clinically significant depressive symptoms during the previous week as identified by the GDS. This point prevalence (range, 12.0% to 52.0%) was higher than that found in 16 primary care studies^{50–65} that used one or more of the most commonly employed depression self-report screening instruments.^{66–68}

SSDI Qualification

The prevalence of suicidal ideation, reported suicide attempts, major depressive episode, and severe depressive symptomatology was much higher for patients in our study who qualified for SSDI because of a mental reason (alone or in combination with a physical reason) than for those who qualified because of a physical reason alone. Importantly, however, the prevalence of suicidal behaviors and depression was at least as high and often considerably higher for patients who qualified because of a physical reason alone than it was for patients of similar ages in the New Haven, ECA, and NCS studies.^{35,45–49}

Limitations

Limitations of the study include its relatively small sample size ($n=164$) and the fact that subjects were recruited to a randomized controlled trial rather than from a large, representative survey. Further, there are few (10%) nonwhites. Next, we acknowledge that some patients could interpret the question of whether they have made an attempt on their life differently than other patients. For example, some patients could interpret self-cutting as a call for help while other might consider it to be a suicide attempt. Finally, we relied primarily on self-report measures and data collected from the subject only, rather than more extensive diagnostic interviews and inclusion of collateral data sources. Thus, our findings should be considered a preliminary indicator of the need for more detailed study of mental health status in this high-risk group.

Why Such High Levels?

There are a number of plausible reasons for the high levels of suicidal behaviors and depression that we found. This group experiences many of the risk factors for both suicide and depression in people under age 65 (e.g., financial problems and lack of social support) as well as those found among elderly people—most importantly, medical comorbidity and functional impairment.^{32,69} This is in part because chronic illness and

disability were inclusion criteria for the Medicare patients in our study. Greater medical comorbidity is associated with more suicidal behaviors⁶⁹ and depression,²⁰ and many chronic illnesses are associated with high levels of depression.^{70–76} About 82% of our subjects had more than 1 chronic medical condition and all had significant functional impairment. Several recent studies have found poor physical functioning to be related to completed suicide,^{69,77,78} and disability to be associated with depression.^{33,34} Further, physical illness and functional decline may carry extra weight as stressors ordinarily associated with later developmental periods that carry even greater significance when they occur earlier in life.⁷⁹ Finally, our population is predominantly female and of lower socioeconomic status. Female gender has been found to be associated with more depression,⁸⁰ suicidal ideation,^{35,81} and suicide attempts,^{45,81} while, similarly, lower socioeconomic status has been found to be related to depression⁸⁰ and lifetime suicide attempts.⁸²

Generalizability

The Medicare demonstration was not intended to be representative of all younger Medicare patients, but rather those who have significant functional impairments and health services use. Because there are higher levels of several risk factors (female gender, white race/ethnicity, medical comorbidity, and disability) in the demonstration patients than in a national sample of beneficiaries under age 65,²⁹ we would expect fewer suicidal behaviors and less depression in the national population.^{35,45,80–82} Nevertheless, at least 45% of the national Medicare under-65 population are impaired in either ADLs or IADLs or both. Thus, there is a large subgroup of patients in the national Medicare under-65 population receiving primary care services who are experiencing levels of suicidal risk and depression similar to those found in the demonstration.

Implications

There is significant psychological morbidity among this group of Medicare patients, suffering that in turn may be related to increased mortality from suicide,⁷⁸ cardiovascular disease,^{83,84} and other illnesses.⁸⁵ As well, the higher levels of suicidal behaviors and depression we observed may be associated with increased health care services use and cost.^{16,86}

In the great majority of cases, suicide is a preventable cause of death; there are opportunities for intervention, many of which are currently missed.⁸⁷ Depression is clearly responsive to a variety of pharmaceutical and psychotherapeutic interventions in primary care.^{88,89} There is some evidence that effective pharmacological treatment of affective illness reduces suicide mortality as well.^{89,90} In 2002, the U.S. Preventive Services Task Force concluded that screening for depression can improve outcomes, particularly when coupled with system changes that help ensure adequate treatment and follow-up.⁹¹ Although they found limited evidence on which to base a recommendation concerning the use of routine screening for suicidal ideation in a more recent report,⁹² the task force identified several intervention studies, including two randomized controlled trials, that achieved statistically significant reductions in suicidal ideation.⁹³ Recently, depression treatment guidelines applied by nurse care manager practices were found to be more effective than care as usual in reducing

depression and suicidal ideation among older adults in primary care practices.⁹⁴ Our findings reinforce the need for additional study of targeted, primary care-based screening interventions for suicidal ideation and depression among Medicare beneficiaries under age 65.

Conclusions

Medicare patients under age 65 who are impaired in ADLs and/or IADLs and have had recent significant health care use are a population at risk for less than optimal health care outcomes. We are aware of no other studies that have examined suicidal ideation and reported suicide attempts among these patients. Our study is preliminary, but our findings of high levels of suicidal ideation, self-reported suicide attempts, and depression indicate the need for additional research to characterize the mental health needs and outcomes of this segment of the Medicare population. Even at this stage, however, it would be prudent to institute routine screening for suicidal ideation and depression among Medicare patients under age 65 in primary care settings who are chronically ill and functionally impaired.

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