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# Thoughts of Death and Suicide Reported by Cancer Patients Who Endorsed the "Suicidal Thoughts" Item of the PHQ-9 During Routine Screening for Depression

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**Background:** *Patients with serious medical illnesses, such as cancer, are at increased risk of suicide but are also often facing death. The Patient Health Questionnaire-9 (PHQ-9) is widely used to screen patients for depression. It includes an item that asks about thoughts of death and hurting yourself (Item-9).* **Objective:** *To describe the nature of thoughts of death and suicide reported in clinical interviews carried out to further assess suicidal ideation of cancer outpatients who had endorsed the "suicidal thoughts item" (Item-9) of the PHQ-9 during routine depression screening.* **Method:** *Secondary analysis of anonymized service data (with ethical approval) derived from the routine clinical administration of self-report questionnaires and telephone interviews to outpatients attending a Cancer Centre in the UK.* **Results:** *Complete data were available on 330/463 (71%) of patients who had endorsed Item-9. In a subsequent structured telephone interview, approximately one-third of these patients denied any thoughts that they would be better off dead, another third acknowledged having thoughts that they would be better off dead, but not of suicide, and the remaining third reported clear thoughts of committing suicide.* **Conclusion:** *Only one-third of cancer outpatients who endorse the "suicidal thoughts item" of the PHQ-9 report suicidal thoughts at a subsequent interview. Services planning to set up depression screening with the PHQ-9 need to carefully consider the relative benefits and burden to their service and patients of including Item-9 and interviewing all those who endorse it.*

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Patients with severe medical illnesses such as cancer are at increased risk of suicide.[1] The Patient Health Questionnaire-9 (PHQ-9) is widely used to screen medical patients for depression and includes an item (Item-9) that asks how frequently the respondent has been bothered by "thoughts that you would be better off dead, or of hurting yourself in some way" over the preceding 2 weeks, scored from 0, 'not at all' to 3, 'nearly every day'.[2]

We have previously reported that 8% of a large sample of cancer outpatients endorsed this item (scored more than 0) on routine screening with the PHQ-9.[3] However, interpreting these results is complicated by the fact that patients who have a life-threatening illness such as cancer may be preoccupied with thoughts of death rather than suicide. Two questions, therefore, arose from this initial study: First, can we use patients' scores on Item-9 to predict who actually does have suicidal thoughts, rather than simply thoughts of death and dying? Second, what do cancer outpatients really mean when they endorse Item-9;

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that is, what kinds of thoughts do they have about death and suicide? We addressed the first of these questions in a previous study of the current sample.[4] We found that patients with higher scores on Item-9 were more likely to have suicidal thoughts. However, we were unable to provide a cut-off score above which patients require further clinical assessment because nearly a quarter of patients who had a low score (score of one) reported suicidal thoughts at interview. This paper addresses the second of these questions by describing in detail the nature of thoughts of death and suicide reported at interview by cancer outpatients who had endorsed Item-9 of the PHQ-9 during routine depression screening at the cancer clinic.

## METHODS

We analyzed data collected by a routine clinical service from patients who had attended clinics at the Cancer Centre (colorectal, gynaecological, genitourinary, sarcoma, melanoma, breast, and miscellaneous cancers) between July 2003 and December 2004. Permission was granted by the Local Research Ethics Committee to report the accumulated anonymized data without individual patient consent. The data were provided by a depression screening service operating in selected outpatient clinics of the Edinburgh National Health Service Cancer Centre. This Cancer Centre serves approximately 1.5 million people in Scotland, UK. All outpatients were asked to complete depression screening questionnaires except those attending for their initial assessment and those with cognitive impairment or communication difficulties. Clinic staff helped patients to complete the questionnaires, which were administered using touch-screen computers while they waited for their consultation. During the period on which the data reported on here were collected, the questionnaires administered included the PHQ-9.

The results of each patient's questionnaire were given to their oncologist or cancer nurse before their consultation. If the clinician had immediate concerns about the patient's mental state, they were able to contact the hospital's consultation-liaison psychiatry or psychology services for further advice. A number of these patients were also routinely interviewed over the telephone by trained staff soon after their clinic visit for further assessment. One of the reasons for such an interview was endorsement of Item-9 of the PHQ-9 (thoughts that you would be better off dead, or of hurting yourself in some way). The telephone interviews were structured and intended to assess any thoughts of death or suicide the patient had experienced over the preceding four weeks: Patients were first asked whether they had been thinking about dying and, if so, were asked to describe their thoughts. Those who reported that they would be better off dead were asked about thoughts of ending their life, and any methods or plans they had considered as well as whether they had actually attempted to end their life.

Because of the large numbers of patients attending the Cancer Centre, it was not feasible for all the telephone interviews to be carried out by a psychiatrist. Instead, trained psychology graduates and nurses were employed. These staff were selected for their communication skills and received at least 1 month of intensive training in administering the telephone interviews. With patients' permission, the interviews were digitally audio-recorded to facilitate regular clinical supervision and quality control of the assessments. Training and supervision of staff were led by a senior consultation-liaison psychiatrist. All patients who reported suicidal thoughts at the telephone interview were discussed with a psychiatrist and an appropriate treatment plan made, involving the patient's primary care doctor when necessary.

We extracted all the records of patients who had endorsed Item-9 and associated recordings of the telephone interviews. In cases where there was no audio-recording (due to technical problems at the time of the interview), we used the written notes taken by the interviewer for analysis. When a patient had received more than one clinical interview in the time period of data collection (i.e., if they had attended the clinic more than once or had received more than one telephone call to clarify their symptoms), we used their first completed interview.

Two psychiatrists (MS, JW) agreed on six clinically meaningful categories of suicidality before the interviews were analyzed (see Table 1). Three raters experienced in conducting suicide risk assessments placed each patient into one of these categories. Allocation was made by consensus. We then calculated the number and proportion of patients in each of the categories.

## RESULTS

During the time period covered by the dataset, 11,444 PHQ-9 questionnaires had been completed by 4639 patients (many of the patients had attended the clinic more than once during the time period).

Three hundred sixty of the 463 patients who had endorsed Item-9 had been interviewed. The majority of patients who did not receive an interview had been

**TABLE 1. Categories of Reported Thoughts of Death and Suicide Over the Preceding 4 Weeks as Elicited at Interview and the Number (%) of Patients Reporting Each**

| Category | Description of Category | Example Responses at Interview | Number (%) Patients ($n$ = 330) |
|---|---|---|---|
| A | Denied thoughts of death or suicide | "I've been delighted with everything that's been going on. I did the questionnaire in a terrific hurry." | 82 (24.8) |
| B | Reported recurrent thoughts or worries about dying | "Naturally when you get the word about cancer you think, 'Oh my God, that's me.' I'm going to live life to the full." | 22 (6.7) |
| C | Reported thoughts of being better off dead or of hurting themselves, but no thoughts of suicide | "I'd rather die in 6 weeks than live like this for another 20 years. When the pain was really bad, I've prayed I'd go to sleep and not wake up again." | 129 (39.1) |
| D | Reported thoughts of suicide but had not seriously considered a method or made a plan | "I would never like to try and fail. . .I'd only do that if I were guaranteed success." | 58 (17.6) |
| E | Reported having seriously considered methods of suicide or had made a plan to end their life | "I thought I might gas myself . . . if you cut your wrists it takes a long time . . . If it gets worse I probably will try and do it." | 38 (11.5) |
| F | Reported a suicide attempt | "I took an overdose." | 1 (0.3) |

deemed too ill by their oncologist or had recently had a similar interview. A small number refused the telephone call or had died of their cancer soon after their clinic appointment.

Complete data were available on 330 of these interviews (330/463; 71%); the remaining 30 patients had been contacted for interview but categorization was not possible, for example, when patients had been unable to answer the questions fully due to physical or mental impairment. The median age of patients with complete interview data was 60 years (range 22 years to 88 years) and the majority (65.5%; 216/330) was female. A digital audio-recording was available for 88% (291/330) of the interviews and written notes for the remainder.

Table 1 shows the number and percentage of patients placed in each category of suicidality.

Telephone interviews were carried out a mean of 10 days after the patient's clinic appointment. The mean time between clinic appointment and telephone interview did not differ between categories of suicidality.

## DISCUSSION

To our knowledge, this is the first study to describe the nature of thoughts of death and suicide reported in clinical interviews by cancer outpatients who had recently endorsed Item-9 of the PHQ-9 during routine depression screening. We found that approximately one-third of patients denied any thoughts that they would be better off dead (categories A–B), another third acknowledged thoughts that they would be better off dead, but not of committing suicide (category C), and the remaining third reported clear thoughts of committing suicide (categories D–F). The large number of patients in category A may reflect mistaken endorsement of the item, transient distress when waiting to see their oncologist, fluctuating suicidal thoughts, or lack of willingness to report suicidal thoughts endorsed on a computer delivered questionnaire to a human interviewer. Only a small proportion (category B) reported that they had been simply thinking about dying from their illness; this was surprising and may reflect the relatively early stage of most patients' illnesses.

There have been a number of studies of the prevalence of suicidal thoughts and desire for hastened death in patients with cancer, but we are not aware of any directly comparable to this one.[5–10] However, a study of 1211 Veterans Administration primary care patients using the PHQ-9 reported that 7% endorsed Item-9, and when asked only two additional questions, approximately a third of these reported thoughts of harming themselves, a percentage similar to that reported here.[11]

This study had a number of limitations: First, patients all attended a single specialist Cancer Centre in the United Kingdom and may not be typical of patients attending other cancer services. Second, our data were incomplete because they were collected by a routine clinical service: Some patients were too unwell to complete the questionnaires or to have a telephone interview, and data on patients' specific cancer type and severity were not available for this study. We were also unable to determine whether any patients who died shortly after the clinic appointment did so by suicide. However, we did have complete data on over 70% of the patients who had endorsed Item-9, and it would be very unlikely that the clinical service would not

be made aware of a suicide of a current patient. Third, we have assumed that our in-depth structured telephone interview was a better measure of the patient's suicidality than the questionnaire self-report. However, some patients who had actually had such thoughts may have been willing to report these to a computer but not to a human interviewer, even over the telephone, leading to 'false negatives' in our categorization. It may also be the case that an interview with an experienced psychiatrist may have elicited more information. Fourth, the screening service did not routinely call patients who had an Item-9 score of 0, so we are not able to address this item's sensitivity as a screen for suicidality. Finally, the screening service contacted patients for further assessment a mean of 10 days after their clinic appointment, and their thoughts may have changed by this time (although this is arguably not a disadvantage for a service seeking to detect recurrent or persistent thoughts).

The PHQ-9 is now widely used as a screening tool for depression in the medically ill, and our findings from this and two previous studies of a large screening service have important implications for clinical practice.[3,4] Approximately 8% of patients endorse Item-9, and the score on this item does not help us to determine which of these patients have suicidal thoughts. This finding implies that we need to interview all those who endorse the Item to find the third who have suicidal thoughts, placing a large burden on depression screening services. One could argue, however, that the additional third who report thoughts of being 'better off dead' also merit further assessment. Services planning to implement depression screening with the PHQ-9 need to carefully consider the relative benefits and burden to their service and patients of including Item-9 and interviewing all those who endorse it.[12]

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