Recent GP consultation before death by suicide in middle-aged men: a national consecutive case series study

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How this fits in

Preventing suicide in middle-aged men is a global priority. In this national case series study, we found that 43% of middle-aged men who died by suicide had a final GP consultation in the preceding three months, and of these men, over half presented with a mental health problem. Men who had recent GP contact before suicide were more likely to have self-harmed in the three months prior compared to men who had no recent GP contact. Men who had a current physical illness, recent history of self-harm, attended for a mental health problem, and experienced recent work-related problems, were more likely to consult with their GP shortly before dying by suicide. GPs and primary care clinicians should be alert to these clinical factors that may be proximal to suicide, and in turn, offer personalised holistic care.

Abstract

Background

Reducing suicide risk in middle-aged men (40-54) is a national priority. People have often presented to their GP within three months before suicide thus highlighting an opportunity for early intervention.

Aim

To describe the sociodemographic characteristics and identify antecedents in middle-aged men who recently consulted a GP before dying by suicide.

Design and setting

This study was a descriptive examination of suicide in a national consecutive sample of middle-aged men in 2017 in England, Scotland, and Wales.

Methods

We obtained general population mortality data from the Office for National Statistics and National Records for Scotland. We collected information about antecedents considered relevant to suicide from data sources. Logistic regression examined associations with final recent GP consultation. We consulted men with lived experience during the study.

Results

In 2017, a quarter (n=1516) of all suicide deaths were in middle-aged men. Data were attained on 242 men: 43% had their last GP consultation within three months of suicide; and a third of these men were unemployed and nearly half were living alone. Men who saw a GP recently before suicide were more likely to have had recent self-harm and work-related problems then men who hadn’t. Having a current major physical illness, recent self-harm, presenting with a mental health problem, and recent work-related issues was associated with having a last GP consultation close to suicide.
Conclusion

We identified clinical factors that GPs should be alert to when assessing middle-aged men. Personalised holistic management may have a role in preventing suicide in these individuals.

Keywords: Suicide, men, general practice, family practice, General Practitioners, primary care
Background

In the UK, men aged 40-54 have the highest age-specific suicide rate.(1) There are complex interrelated factors that are associated with suicide in these men such as economic pressures, relationship difficulties, and social isolation.(2, 3, 4) Reducing suicide risk in middle-aged men is a national policy priority.(5) Whilst reducing suicide risk in people who contact mental health services is a key preventive focus, many people do not access these services, and so primary care has an important role in supporting people at risk of suicide.(6)

A study found that among people who died by suicide, 41% had contact with primary care services within three months before they died; and 16%, one-week beforehand.(7) Between 2003-2005 approximately 78% of final GP consultations occurred within three months before suicide; and GPs describe reviewing and altering mental health medication during this period.(8, 9) GPs can identify and support middle-aged men who present in acute distress and/or suicidal crisis, especially in the three month window before suicide.(10, 11) Research is lacking about the characteristics and antecedents of men who died by suicide and had ‘recent contact’ (within three months) with a GP before suicide.(12, 13)

We aimed to describe the sociodemographic characteristics and behavioural and clinical antecedents in middle-aged men whose final GP consultation was within three months before suicide. We compared medications prescribed between men with recent GP contact and those who had a GP consultation more than three months before suicide. We explored what antecedents may be associated with final recent GP contact. By understanding clinical characteristics of men in the recent contact group, potential targets for GP intervention can be identified.

Method

Study population

In this national case series study detailed information was collected about men aged 40-54 years who died by suicide (including probable suicide) between 1st January 2017-31st December 2017 in England, Scotland, and Wales. 'Middle-aged' was defined as ages 40-54 years.

General population mortality data

We received general population mortality data on men who died by suicide for deaths registered in England and Wales from the Office for National Statistics (ONS) and for deaths registered in Scotland, from the National Records for Scotland (NRS). As is standard for suicide research, we included deaths receiving a conclusion of suicide or intentional self-harm or events of undetermined intent (open verdict) by an HM coroner (England and Wales) or by a Procurator Fiscal (Scotland) when a death is registered. Deaths with International Classification of Diseases, Tenth Revision (ICD-10) codes X60-X84, Y10-Y34 (excluding Y33.9) and Y87 were included.(14) Deaths that were
summarised by narrative conclusion at coronial inquest were included if ONS procedures applied one of the ICD-10 codes listed above in England and Wales only.

Sample

In 2017, 1,516 men aged 40-54 died by suicide in England, Scotland, and Wales. We aimed to obtain information on the antecedents of suicide into these deaths from official investigations on a stratified, random sample of 20% of these men. We sampled a fifth of all cases to ensure that sufficient data were obtained and that our research team was adequately resourced to conduct the investigation. This 20% sample was stratified according to the proportion of deaths in each of these groups: 1) by 5-year age band (40-44, 45-49 and 50-54) within the broader 40-54 years range and 2) by country (England, Wales, and Scotland). Using the SPSS random allocator function, we selected the sample from the total number of deaths by suicide that we had been notified by national data providers at the time of sampling (n=1,486). In total, we sampled 288 (19%) middle-aged men. We obtained information about the circumstances surrounding their death, the stressors close to suicide, and their contact with primary care from the data sources that are described below.

Data sources

Coronial inquest hearings/files or police death reports

Audio recordings of coronial inquest proceedings were requested from senior coroners in the jurisdictions of all sampled deaths in England and Wales. If unavailable, inquest depositions or statements were requested. Redacted police death reports were requested from the Crown Office and Procurator Fiscal Service (COPFS) for all sampled deaths that occurred in Scotland. Information was attained for 228 (79%) of the 288 suicide deaths: in 12 deaths the coroner or equivalent was unable (n=5) or did not wish to provide the data (n=7); for 48 deaths data were not returned on time.

National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH) data

The NCISH collects data on a complete UK-wide consecutive case-series of people who died by suicide within one year of being seen by mental health services. Detailed NCISH data collection methods have been published.(15) NCISH data were obtained for 86/288 (30%) of cases.

NHS serious incident reports

Where a patient suicide was identified from NCISH data, a copy of the serious incident report about factors that led to the suicide was requested from the medical director of the treating NHS trust/Health Board. Reports from 68 deaths (24%) were obtained. The deaths of 12 men did not meet organisational review criteria, and data about six deaths were not returned on time.

Criminal justice system reports
In England and Wales, the Prison and Probations Ombudsman (PPO) release independent Fatal Incident investigation reports of deaths by apparent suicide in custody. The PPO website was searched for reports for men who died in custody.

In Scotland, certain types of death are investigated at Fatal Accident Inquiries (FAI), including deaths in prisons. The judgements of FAIs are published on the Scottish Courts and Tribunals (SCT) website. The SCT website was searched to locate FAIs relating to suicide in men who died in custody. Three reports of suicides were identified across England, Wales, and Scotland.

**Procedures**

Information about antecedents of suicide were extracted using a pre-defined proforma informed by literature and PPI, and then transferred into a standardised database for aggregate analysis. Information was collected on demographic factors (relationship status, employment status, living circumstances), medical history (physical health conditions, alcohol misuse, illicit drug use), psychiatric history (psychiatric disorders, medication), disclosure of suicidal ideas and/or intent, history of self-harm, and recent events (problems with family, work, finance, or accommodation in the 3 months prior to death). The last known contact with GPs and secondary care (emergency department and mental health) was recorded.

We recorded factors when they were referred to in any data source as having been present in the man’s life at any time, or specifically in the three months prior to death (definition of ‘recent’). Reference to an antecedent factor (definitions in Supplementary Table 1) at an investigation suggests that it was seen as relevant to the death.

To ensure interrater reliability of data extraction approximately a tenth of cases (n=30) were reviewed by JG, CR, SGT and a Fleiss’ Kappa reliability test performed. Initial levels of agreement were 58-100%. Upon disagreement information was independently re-evaluated and discussed until agreement reached: concordance increased to 100%.

**Patient and public involvement (PPI)**

Three male members of the Mutual Support 4 Mental Health Research PPI group with lived experience of suicidal distress informed the development of the data extraction pro-forma and contributed to interpretation of findings.

**Statistical analysis**

If an antecedent was not mentioned in a data source, we assumed that it was unlikely to have been present and it was recorded as absent/not relevant. Pearson’s chi-square or Fisher’s exact test were used to test for associations between subgroups. Antecedents of men in the recent final GP consultation group prior to suicide were examined using descriptive analysis and compared to men who did not have recent GP contact before suicide, including no GP contact at all. A subgroup analysis comparing medications prescribed in men with a recent GP contact versus men whose GP consult was more than three months prior to death was conducted. Univariate logistic regression models were initially fitted with final recent GP consultation before death by suicide as the
outcome variable. A multivariable model was then generated using a backwards
elimination variable selection approach: the variable with the highest p value was
deleted first.(17) Results with p <0.05 (two-sided) were considered statistically
significant. Analyses were undertaken in Stata v16.1.(18)

When reporting results, we suppressed cell counts below three (including zero), in
accordance with ONS guidance on disclosure control to protect confidentiality.(19)
Results from England, Wales and Scotland are presented as aggregate values.

**Results**

The NCISH was notified through ONS and NRS of 5,950 deaths by suicide in England,
Wales, and Scotland that occurred between 1st January 2017 and 31st December 2017,
with 1,516 deaths among men aged 40-54. This demographic subgroup constituted a
quarter (25%) of all deaths by suicide, and more than a third (34%) of all suicides
among men. The most common method of suicide was by hanging or strangulation
(n=932, 61%) followed by self-poisoning (n=227, 15%), with a fifth of suicide deaths by
self-poisoning being from opioid/opiate substances (n=45).

We obtained information about the sociodemographic characteristics and antecedents
of suicide deaths for 242 (84%) of the 288 middle-aged men in our sample. The mean
age of these men was 47 (40-54), and they were from England (n=193), Scotland
(n=34), and Wales (n=15). Information was attained mostly from coronial inquest
hearings or police death reports (n=228).

Ninety percent (219/242) of the men in our sample were registered with a general
practice when they died by suicide. The mean age of these men was 47 (40-54). Overall,
12% (n=29) of the 242 men had a final consultation with a GP during the preceding
week prior to death; 31% (n=76) between day 8 to 12 weeks, and 27% (n=66) more
than three months before. In 12% (n=28) the time since last GP consultation before
suicide was unspecified, and in 18% (n=43) last GP contact was not indicated. From
men with a known time of final GP consultation (171/242) before suicide, 61% (n=105)
last consulted a GP within three months (including one week), and 39% (n=66) more
than three months before suicide.

**Final recent GP contact compared to no recent GP contact before suicide**

Forty three percent (105/242) of men had a last recent GP consultation before dying by
suicide. As shown in Table 1, a third of these men were unemployed at that time, and
63% were single, divorced, separated, or widowed. Nearly half were living alone. Of
men who recently saw a GP before dying by suicide, 8% were from an ethnic minority
background.

Men whose GP consultation before suicide was recent were more likely than men who
had no recent GP contact to have had a history of self-harm within three months before
suicide and to have had a history of suicidal ideation. They were also significantly more
likely to have had a major physical illness (Table 1).
Men who had a recent GP consultation before suicide were more likely than men who hadn’t to have presented to a GP with a mental health or psychological problem (Table 1). From the outcomes of last GP consultation (either patient’s mental health team informed, GP consultation only, referral to other services, other specified reason, or not applicable), men who had a recent consultation were more likely to have had a GP consultation with no other service involvement and they were more likely to have been referred in their last GP consultation (Table 1).

Men who had a recent GP consultation before suicide were more likely to report experiencing recent work-related problems, including being on sick leave. Men with a recent GP consultation were also more likely to have presented to a hospital emergency department during the three months before suicide (Table 1).

Prescribed medications in recent compared to more than three-month GP contact groups

As listed in Table 2, men who saw a GP recently were more likely to have been prescribed an SSRI/SNRI type anti-depressant, oral antipsychotic, benzodiazepine, or other psychotropic medication by a GP, mental health, or emergency department clinician (see Supplementary Table 2 for medication list) compared to men who saw a GP more than three months before suicide.

Clinical predictors of final recent GP contact

All significant variables in Table 1 (except GP consultation outcome variables) were entered into model A simultaneously and then insignificant variables were removed individually till the final model was fitted. In model D (n=242), having a major physical illness, recent self-harm, presenting for a mental health or psychological problem, and recent problems in the workplace (including being on sick leave, bullying, or a change or loss of job) was associated with men who had a GP consultation within three months of suicide (Table 3). The fit of models (likelihood ratio test) improved from 66.67 (model A), to 63.65 (model D).

Discussion

Summary

This study found that 43% of men saw a GP within three months of suicide and of these men, over half presented to the GP with a mental health or psychological problem. Men who last saw a GP in the 3 months before suicide were more likely than those who hadn’t to have a recent history of self-harm. Men who saw a GP within 3 months of death were more likely to have been taking an SSRI/SNRI antidepressant, oral antipsychotic, benzodiazepine, or other psychotropic medication compared to men who saw a GP more than three months before suicide. Men who had a major physical illness, recent self-harm, presented for a mental health problem, and had work-related issues were more likely to have had recent GP contact before suicide.

Strengths and limitations
This is the first study to our knowledge to have examined antecedents of suicide in middle-aged men who had recent GP consultations before suicide. Data predominantly came from coroners who independently obtain evidence from several sources including personal narratives of families, friends, and professionals in contact with men before suicide. We involved men with lived experience improving the credibility of our findings.

There are however several limitations. This was a case series study thus causal inferences cannot be made about observed relationships. Men who had a major physical illness or work-related problems may have been frequently seeing a GP and therefore more likely to have had a recent GP consult close to suicide. The findings are aggregated for England, Wales, and Scotland; and in turn will be driven by a larger number of suicide deaths in England. Ethnicity was poorly recorded therefore likely underreported. We may have underestimated the true figure for some antecedents, particularly if they were viewed as sensitive (e.g., separation from partner); and other figures may be overestimates as families/friends search for meaning following deaths and may focus on self-perceived relevant factors. Some data may have been influenced by recall bias. We did not specifically collect data on the number or frequency of GP consultations and so were unable to identify patterns in GP consultations before suicide. This study does not tell us about final recent GP consultations during COVID-19.

Comparison with existing literature

Stanistreet et al compared health service contacts before suicide and accidental deaths in young men (15-39 years) in 1995 and found that 56% (45/97) of men who died by suicide had seen a GP in the three months before suicide; we found 43% of men had their final GP consultation within three months before suicide. A Norwegian study of suicide deaths from 2006-2015 found that 33% of men aged 30-44 years and 39% of men 45-59 years had a GP consultation one month before suicide highlighting an opportunity of GP intervention in the month before suicide. Among French men who visited their family doctor during 2019, 24% suffered from a work-related mental health problem; we found men who had recent GP contact before suicide were more likely to have experienced recent work-related stress compared to those who had not, highlighting the importance of enquiring about work-related problems. Risk factors identified in general practice for suicide in men include past self-harm and major life stresses: we found men who had a recent GP consult were more likely to have recently self-harmed.

Implications for research and practice

Our findings contribute new evidence that GPs should consider when managing middle-aged men. We identified antecedents like current major physical health illness and a recent history of self-harm that are more likely to occur in men who consult a GP three months before suicide than those who hadn’t. It is important to examine the associations of antecedents before suicide and the timing of GP contact in the three-month window. Exploring the mental health impact of having a major physical illness or experiencing work-related problems can lead to understanding how GPs can intervene.
We need to research acceptable ways GPs can acutely intervene to reduce the chances of suicide in middle-aged men.

Suicide in a middle-aged man may be a rare occurrence for GPs; but a patient suicide can have a detrimental effect on GPs wellbeing. Men in midlife have the highest suicide rates in the UK, and with COVID-19 exacerbating known suicide risks, it is crucial GPs are alert to identified antecedents that are more likely in men who died by suicide with recent GP contact. Men who present with an identified antecedent such as a mental health problem, recent self-harm, or suicidal ideation should receive a risk formulation, focusing on clinical needs, and tailoring treatment to needs using a strengths-based approach. The 2022 NICE self-harm guidance states that risk stratification into low, medium or high risk to predict future suicide or repetition of self-harm should not be used.

GPs attempting to implement the ‘Making Every Contact Count’ approach (delivering healthy lifestyle messages to encourage behaviour change, for example about alcohol intake or stress reduction techniques, and directing to appropriate services) could potentially prevent suicide in midlife men, specifically for men with a major physical illness, recent self-harm, work-related problems, and present with a mental health problem. Longer-term intervention can include referral to mental health services, talking therapies, or third-sector teams; self-help resources; and treatment of underlying mental illness.

Men prescribed an SSRI/SNRI antidepressant, oral antipsychotic, or benzodiazepine were more likely to have seen their GP within three months of suicide which may indicate that mental health reviews were conducted or there was a deterioration in their mental health. In practice it’s important to recognise this and explore self-harm and suicidal thoughts in men taking these medications. GPs may consider allocating more time or arranging follow-up appointments to carefully assess middle-aged men, in particular for those who present with a new mental health problem or work-related problems. Preventing suicide in middle-aged men remains a national priority and GPs have a key role, especially in early assessment and intervention, in a system-wide approach to suicide prevention in these individuals.
Funding

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Ethical approval

The following approvals were obtained: the University of Manchester Research Governance and Ethics; the National Research Ethics Service (NRES) Committee North West (19/NW/0156) on March 25th 2019; the Health Research Authority Confidential Advisory Group (HRA-CAG; 19/CAG/0109) provided exemption under Section 251 of the NHS Act 2006, enabling access to confidential and identifiable information without informed consent in the interest of improving care on July 29th 2019; and Public Benefit and Privacy Panel for Health and Social Care (PBPP; 1819-0270) on October 11th 2019; and individual NHS Health Boards in Scotland. NHS Trusts and Health Boards in England and Wales were not required to formally confirm capacity and capability.

Competing interests

FM was a member of the updated 2022 NICE clinical guideline on self-harm and co-chairs the International Association for Suicide Prevention special interest group in suicide prevention in primary care. LA chairs the National Suicide Prevention Strategy Advisory Group (NSPAG) at the Department of Health and Social Care in England; NK is a member of the Group and is supported by Greater Manchester Mental Health NHS Foundation Trust. NK chaired the 2022 NICE guideline development group for depression in adults and was a topic expert member for the NICE suicide prevention guideline. NK chaired the guideline development group for the NICE guidelines on the longer-term management of self-harm 2011 and was a topic advisor on the 2022 NICE guideline on self-harm.

Acknowledgements

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4. National Confidential Inquiry into Suicide and Safety in Mental Health. Suicide by middle-aged men. The University of Manchester; 2021.


### Table 1. Sociodemographic, behavioural, and clinical characteristics of middle-aged men who died by suicide with a known recent GP consultation before suicide (n=242)

<table>
<thead>
<tr>
<th>Data items</th>
<th>Recent last GP consultation (n=105)</th>
<th>Did not have recent last GP consultation (n=137)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-demographic</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>38 (36%)</td>
<td>61 (45%)</td>
<td>0.191</td>
</tr>
<tr>
<td>Unemployed</td>
<td>35 (33%)</td>
<td>37 (27%)</td>
<td>0.286</td>
</tr>
<tr>
<td>Living alone</td>
<td>49 (47%)</td>
<td>60 (44%)</td>
<td>0.656</td>
</tr>
<tr>
<td>Ethnic minority group</td>
<td>8 (8%)</td>
<td>12 (9%)</td>
<td>0.750</td>
</tr>
<tr>
<td><strong>Behavioural</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of self-harm within three months of death</td>
<td>33 (31%)</td>
<td>13 (9%)</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>History of self-harm more than three months</td>
<td>23 (22%)</td>
<td>38 (28%)</td>
<td></td>
</tr>
<tr>
<td>History of suicidal thoughts</td>
<td>34 (32%)</td>
<td>28 (20%)</td>
<td>0.035*</td>
</tr>
<tr>
<td>History of alcohol misuse</td>
<td>37 (35%)</td>
<td>51 (37%)</td>
<td>0.750</td>
</tr>
<tr>
<td>History of drug misuse</td>
<td>33 (31%)</td>
<td>41 (30%)</td>
<td>0.802</td>
</tr>
<tr>
<td><strong>Clinical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major physical illness at time of death</td>
<td>54 (51%)</td>
<td>46 (34%)</td>
<td>0.005**</td>
</tr>
<tr>
<td>Respiratory disease</td>
<td>12 (11%)</td>
<td>15 (11%)</td>
<td>0.906</td>
</tr>
<tr>
<td>Chronic pain</td>
<td>13 (12%)</td>
<td>9 (7%)</td>
<td>0.119</td>
</tr>
<tr>
<td></td>
<td>Case (n, %)</td>
<td>Control (n, %)</td>
<td>p-value</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>Musculoskeletal disease</strong></td>
<td>6 (6%)</td>
<td>4 (3%)</td>
<td>0.2241</td>
</tr>
<tr>
<td><strong>Psychiatric diagnosis:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressive or anxiety illness</td>
<td>42 (40%)</td>
<td>39 (29%)</td>
<td>0.060</td>
</tr>
<tr>
<td>Schizophrenia/delusional disorders</td>
<td>10 (10%)</td>
<td>9 (7%)</td>
<td>0.397</td>
</tr>
<tr>
<td>Alcohol or drug misuse</td>
<td>13 (12%)</td>
<td>13 (9%)</td>
<td>0.472</td>
</tr>
<tr>
<td><strong>Reasons for last GP contact:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental health or psychological problem</td>
<td>54 (51%)</td>
<td>21 (15%)</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Physical health problem</td>
<td>35 (33%)</td>
<td>28 (42%)</td>
<td>0.230</td>
</tr>
<tr>
<td>Alcohol and/or drug misuse</td>
<td>7 (7%)</td>
<td>7 (5%)</td>
<td>0.607</td>
</tr>
<tr>
<td><strong>Outcome at last GP consult:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GP consultation only</td>
<td>35 (33%)</td>
<td>29 (21%)</td>
<td>0.033*</td>
</tr>
<tr>
<td>Referral</td>
<td>22 (21%)</td>
<td>10 (7%)</td>
<td>0.002**</td>
</tr>
<tr>
<td><strong>Last ED attendance within three months</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 (22%)</td>
<td>12 (9%)</td>
<td>0.004**</td>
<td></td>
</tr>
<tr>
<td><strong>Social events in the three months before suicide:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separation from partner</td>
<td>24 (23%)</td>
<td>24 (18%)</td>
<td>0.302</td>
</tr>
<tr>
<td>Social isolation</td>
<td>14 (13%)</td>
<td>10 (7%)</td>
<td>0.120</td>
</tr>
<tr>
<td>Data items</td>
<td>Last GP consultation before suicide</td>
<td>χ²</td>
<td>p value</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------</td>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td>GP consultation within three months (n=105)</td>
<td>GP consultation more than three months (n=66)</td>
<td></td>
</tr>
<tr>
<td>Prescribed medications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSRI/SNRI and related</td>
<td>56 (53%)</td>
<td>15 (23%)</td>
<td>15.634</td>
</tr>
<tr>
<td>Oral antipsychotic</td>
<td>20 (19%)</td>
<td>5 (8%)</td>
<td>4.272</td>
</tr>
<tr>
<td>Depot antipsychotic</td>
<td>&lt;3 (2%)</td>
<td>4 (6%)</td>
<td>0.156</td>
</tr>
<tr>
<td>Tricyclic antidepressant</td>
<td>7 (7%)</td>
<td>3 (5%)</td>
<td>0.414</td>
</tr>
<tr>
<td>Lithium/mood stabilisers</td>
<td>4 (4%)</td>
<td>3 (5%)</td>
<td>0.551</td>
</tr>
<tr>
<td>Other antidepressants</td>
<td>14 (13%)</td>
<td>8 (12%)</td>
<td>0.053</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>15 (14%)</td>
<td>3 (5%)</td>
<td>0.035</td>
</tr>
<tr>
<td>Other psychotropic drugs</td>
<td>27 (26%)</td>
<td>3 (5%)</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Opiate for pain relief</td>
<td>14 (13%)</td>
<td>4 (6%)</td>
<td>0.103</td>
</tr>
</tbody>
</table>

*p<0.05, **p<0.01, †one-sided Fisher's exact test
Table 3. Results of backwards elimination logistic regression for middle-aged men who died by suicide with final GP consultation before suicide (n=242)

<table>
<thead>
<tr>
<th></th>
<th>Model A</th>
<th>Model B</th>
<th>Model C</th>
<th>Model D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>p-value</td>
<td>OR</td>
</tr>
<tr>
<td>Constant</td>
<td>0.22</td>
<td>0.13-0.38</td>
<td>&lt;0.001**</td>
<td>0.23</td>
</tr>
<tr>
<td>History of self-harm within three months</td>
<td>2.53</td>
<td>0.98-6.50</td>
<td>0.054</td>
<td>2.53</td>
</tr>
<tr>
<td>History of self-harm &gt;three months ago</td>
<td>0.55</td>
<td>0.26-1.16</td>
<td>0.116</td>
<td>0.54</td>
</tr>
<tr>
<td>History of suicidal thoughts</td>
<td>1.15</td>
<td>0.57-2.33</td>
<td>0.690</td>
<td></td>
</tr>
<tr>
<td>Major physical illness</td>
<td>2.62</td>
<td>1.42-4.83</td>
<td>0.002**</td>
<td>2.62</td>
</tr>
<tr>
<td>Last GP consult for mental health/psychological problem</td>
<td>5.50</td>
<td>2.70-11.20</td>
<td>&lt;0.001**</td>
<td>5.74</td>
</tr>
<tr>
<td>Recent work-related problems (including on sick leave)</td>
<td>2.99</td>
<td>1.37-6.54</td>
<td>0.006**</td>
<td>2.98</td>
</tr>
<tr>
<td>Recent ED attendance within three months</td>
<td>1.34</td>
<td>0.48-3.75</td>
<td>0.578</td>
<td>1.34</td>
</tr>
</tbody>
</table>

*p<0.05, **p<0.01, OR – odds ratio; CI – confidence interval.