Suicide Mortality, Suicidal Ideation and Psychological Problems in Dutch Anaesthesiologists

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Original Research

Suicide Mortality, Suicidal Ideation and Psychological Problems in Dutch Anaesthesiologists

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***Abstract*:** Previous studies reveal an elevated suicide rate for anaesthesiologists. We sought to examine anaesthesiologist suicide mortality and its underlying explanatory factors. Two studies were conducted in order to establish the suicide mortality figures among Dutch anaesthesiologists and to investigate life events, work-related stress, psychological problems and alcohol- and drug abuse in relation to suicidal ideation. The results suggest that suicide mortality in anaesthesiologists in The Netherlands is elevated, and comparable to that in other Western countries, but small numbers prevent robust testing of this difference. Anaesthesiologists are more likely than the general population to experience sleeping problems and suicidal ideation; male anaesthesiologists are more likely to suffer from depression. The prevalence of suicide among this population may be related to a high prevalence of psychological problems, in addition to the knowledge and availability of means. Areas of suicide prevention among this group are discussed.

Keywords: Suicide, suicidal ideation, psychological problems, stress, substance abuse, anaesthesiologists, female, resident.

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Introduction

Previous studies show elevated suicide mortality rates among physicians compared to the general population, particularly among female physicians (Heijden, Prins, & Bakker, 2006; Jackson, 1999; Katz, 2011; Largo-Janssen & Luijks, 2008; Sonneck & Wagner, 1996; Van Schaik, Kleijn, Van der Veldt, & Van Tilburg, 2010). Among physicians the highest suicide figures are found among anaesthesiologists (Alexander, Checkoway, Nagahama, & Domino, 2000; Carpenter, Swerdlow, & Fear, 1997; Juel, Husum, Viby-Morgensen, & Viskum, 2002; Maulen, 2010; Swanson, Roberts, & Chapman, 2003; Van Schaik et al., 2010). Anaesthesiologists correspondingly have a lower average age of death compared to the general population (Wright & Roberts, 1996) as well as compared to other physicians (Carpenter et al., 1997; Ohtonen & Alahuhta, 2002; Svardsudd, Wedel, & Gordh, 2002). Even though the reasons for this tendency remain unclear (Arrindell & Ettema, 1986), five possible explanations can be put forward. First, anaesthesiologists have the knowledge of and easy access to medication, which makes them more vulnerable (*availability of means explanation*) (Grellner, Kukuk and Glenewinkel, 2002). Second, the anaesthesiological profession is associated with elevated levels of stress (*excess of stress explanation*) (Heijden et al., 2006; Jackson, 1999; Shanafelt, 2011; Sonneck & Wagner, 1996). It has been suggested that this particularly accounts for junior anaesthesiologists (de Oliveira Jr et al., 2013; Larsson, Rosenqvist, & Holmström, 2006). Third, the selection of anaesthesiologists might favour personal characteristics that predispose to suicide risk, such as depression as an important risk factor for suicide (*personality characteristics explanation*). Fourth, life events that have a specific meaning for anaesthesiologists, such as medico-legal conflicts, conflicts within the hospital setting or conflicts with colleagues (*specific life events explanation*) could influence suicide mortality among anaesthesiologists. Lastly, female anaesthesiologists might experience more strain than their male colleagues because of the burden of combining professional roles and personal roles in partnership, motherhood c.q. housekeeping duties (*female overload explanation*). Probably these explanations interact with one another and result in multicausal determination. Although such possible explanations are difficult to study and to disentangle from one another, research into suicide mortality and its associations can reveal insights and outline areas of prevention. So far, few authors have investigated risk factors relating to the working environment, stress factors, or specific symptoms of psychological problems of anaesthesiologists. We conducted two connected studies into the suicide problem in Dutch anaesthesiologists. The first tried to establish the suicide mortality figures among Dutch anaesthesiologists and the mean age at death, the second one investigated life events, stress, and symptoms of psychological problems in relation to suicide ideation.

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Study 1: Estimating suicide mortality among Dutch anaesthesiologists

Method

Nearly all anaesthesiologists in The Netherlands are or have been a member of the Dutch Association of Anaesthesiologists (NVA) (both during their working life, from approximately age 35 onwards and after retirement). The NVA files in the period 1983-2007 were inspected for deletions from the membership list because of death. Following, senior and retired colleagues of all deceased Dutch anaesthesiologists were individually and confidentially approached by the second author to enquire after the cause of death of the deceased colleague. Informed consent was obtained.

Results

A total of 117 member-anaesthesiologists died in the period 1983-2007. For male anaesthesiologists the average age at death was 66, for female anaesthesiologists 68. The average life expectancy of Dutch university-educated men and women is 82 and 86 years, respectively (StatisticsNetherlands, 2013): For male and female Dutch physicians in general this was 79 and 82 years (Largo-Janssen & Luijks, 2008) and for male and female medical specialists in their working life specifically 89 and 90 years (SPMS, 2015). For anaesthesiologists, in 97 cases the cause of death could be obtained through the colleague informants (83%). Through our informants, we learned that 7 anaesthesiologists died of suicide (7.2%): four males and 3 females. In the same period, suicide accounted for approximately 4% of all male deaths aged 35 and over and approximately 2.8% of all female deaths in the general Dutch population (Hoogenboezem & Van den Berg, 2014). Due to small numbers, these differences cannot be statistically tested; one cannot rule out that these might be due to random variation.

Discussion

Suicide mortality in anaesthesiologists in The Netherlands is high and is comparable to that in other

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Western countries (Ohtonen & Alahuhta, 2002; Svardsudd et al., 2002; Swanson et al., 2003; Wright & Roberts, 1996). Anaesthesiologists have a lower average age of death and a higher suicide mortality rate than the general population (Statistics Netherlands, 2013). Even though this study has included all working and retired anaesthesiologists in the Netherlands, for the cause of death we have relied on information provided by colleagues. It may well be that among the non-reported cases, suicides may have gone unnoticed, leading to an underrepresentation of the actual suicide mortality. Given the limitations of the study (retrospective recall and small numbers), the findings must be considered as explorative.

Study II: Suicidal ideation and psychological problems

Method

In order to examine the prevalence and nature of suicidal ideation and psychological problems among anaesthesiologists, all 1132 members of the Dutch Association of Anaesthesiologists (NVA) were sent a questionnaire. The questionnaire consisted of items related to stressful life events (see table 2), psychological problems (measured by the SCL-90), depression, suicidal ideation ("(When) have you ever seriously considered to commit suicide?", "(When) have you ever attempted suicide?"), substance abuse ("How many glasses of alcoholic beverages do you consume daily?" "Do you use marijuana, cocaine, amphetamine, opiate derivates?"), and events related to work (measured by the Utrecht Burnout Scale, UBOS (Schaufeli en Van Dierendonck, 2000). Informed consent was obtained and respondents were assured that all information would be made anonymous. Anaesthesiologists who retired because of age (N=20) and those on sick leave (N=2) were excluded from the analyses. Data analysis was conducted with SPSS v.17.0.

Results

A total of 839 working anaesthesiologists, of which 172 junior anaesthesiologists responded to the questionnaire. Twenty-two anaesthesiologists were excluded as they passed retirement age (N=20) or because they were on sick leave (N=2), resulting in a response rate of 74 per cent. Two thirds of the respondents were male (66.7%; N=551); the mean age was 44.3 years (SD 9.62).

One out of five respondents suffered from psychological problems. Table 1 reflects the most commonly reported problems. Male anaesthesiologists reported higher scores on depression scales compared to the general population (see table 1). Both male and female respondents reported higher scores on sleeping problems scales compared to the general population. Female anaesthesiologists reported lower levels of anxiety. Assessed by the UBOS scale, at least 4% (N=32) of the sample reported from burnout symptoms, and 12% (N=96) had developed severe symptoms that indicated a high risk for burnout in the near future.

Table 1. Average SCL-90 sum scores on Anxiety, Depression, Insufficiency and Sleeping Problems scales, compared to the general population, according to gender.

SCL-90 scale	Male anaesthesiologists[a] (N=551)	General male population (N=432)[a]	Female anaesthesiologists[a] (N=274)	General female population (N=577)[b]
Anxiety	13.0 ± 4.4	13.0 ± 4.3	13.6 ± 4.6*	14.6 ± 5.7
Depression	22.8 ± 8.5***	20.7 ± 6.3	24.1 ± 8.4	23.8 ± 8.6
Insufficiency	13.2 ± 4.7	13.2 ± 4.6	14.1 ± 5.4	14.1 ± 5.1
Sleeping problems	5.1 ± 2.4**	4.6 ± 2.4	5.6 ± 2.8*	5.2 ± 2.8

± Standard Deviation
* p < .05; ** p < .01; *** p<.001
[a] Anaesthesiologists during their working life (i.e. 35-65).
[b] Arrindel & Ettema, 1986.

Asked for history of depression 28% (N=237) reported a period of depression once (18%; N=151), or more than once (10%; N=84) in their lives. Less than half of these depressive episodes had been treated (46%; N=388).

One out of five respondents indicated that they had seriously considered suicide in the past (20%; N=169); one out of ten had been treated for suicidal ideation (10%; N=84). Eight (1%) had attempted suicide. Respondents who reported strong suicidal ideations in the past year (5%; N=41) did not differ in demographics from those who did not report suicidal ideation, but were found to be more likely to suffer from anxiety, depression, feelings of

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insufficiency, sleeping problems, fatigue, burn-out, depersonalisation and substance abuse. Male and female anaesthesiologists did not differ in risk of burnout or work-related problems. Junior residents report more fatigue (2.19 vs 1.67, $p < .001$) and burnout symptoms (22% vs 15%, $p < .05$) than their senior counterparts. One out of four (23%; N=127) male anaesthesiologists were found to consume at least three alcoholic beverages per day versus 6% (N=17) of all female respondents. The use of drugs is limited to 1.5% of the total sample (N=13) who use cannabis or other drugs more than once a month.

Stressful life events experienced in the past two years (table 2) concerned reorganisations (41%; N=346), medico-legal conflicts (36%; N=303), conflicts between colleagues (30%; N=253), problems in the intimate partner relationship (27%; N=227) or other problems (35%; N=241) related to disease, work, family, or finances.

Table 2. Stressful life events among Dutch anaesthesiologists (N=839).

Event type	Experienced		Indicated as very troublesome
	%	N	%
Reorganisation	41.3	346	38.6
Medico-legal conflicts	36.2	303	39.1
Conflicts with colleagues	30.2	253	54.3
Problems in intimate partner relationship	27.1	227	60.3
Other, of which:	34.8	241	63.9
Disease, passing away of relative	37.3	90	71.9
Occupational problems	36.5	88	64.0
Family	24.1	58	44.8
Financial	2.1	5	60.0

Discussion

One out of five anaesthesiologists reported serious psychological problems and one out of five respondents indicated that they had experienced suicidal ideation in the past. About 5% of the sample of anaesthesiologists seriously considered suicide in the previous year and therefore should be considered at risk. These figures correspond to recent figures on suicidal ideation reported among surgeons in other European countries (Wall et al., 2014). Anaesthesiologists were more likely than the general population to experience sleeping problems and suicidal ideation; male anaesthesiologists were more likely to suffer from symptoms of depression. The prevalence of suicidal ideation among Dutch anaesthesiologists corresponds to findings reported of suicidality of Finnish anaesthesiologists (Swanson et al., 2003). The prevalence of suicide among this population may be associated to a higher prevalence of psychological problems, in addition to the knowledge and availability of means. Remarkable is the prevalence of suicides among anaesthesiologists (7%) while the number of attempted suicides is comparatively very low (1%). Anaesthesiologists may therefore have a much higher risk of dying in their first suicide attempt. In line with previous studies (Gurman, Klein, & Weksler, 2012), we found that suicide represents a significant occupational hazard for anaesthesiologists. The results of our study correspond to previously reported elevated substance abuse rates (Garcia-Guasch, Roigé, & Padros, 2012) and suicide rates among anaesthesiologists in other Western countries (Katz, 2011; Sonneck & Wagner, 1996).

Female anaesthesiologists seem to run a greater risk for suicide compared to their male colleagues. It could be speculated that this risk might decrease now that the male-female ratio among anaesthesiologists is decreasing and, in accordance, the burden for women of combining professional roles and personal roles. In addition to the female overload explanation, possible causes for the elevated suicide rate among female anaesthesiologists may be found in the availability of means explanation. Women in the general population make more non-fatal suicide attempts than men, in large part because they prefer less violent (and hence less deadly) methods compared to men (Maulen, 2010). It is possible that the prevalence of suicide among female anaesthesiologists simply reflects a combination of the gender difference in the rate of

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suicide attempts and a higher case fatality of suicide completion by anaesthesiologists compared to the general population, because they use more deadly agents.

Occupational stress specific for anaesthesiologists may contribute to depressive symptoms and suicidal ideation particularly through reorganizations in the hospital, actual or threatening medico-legal conflicts, and conflicts with colleagues when experienced as very troublesome. These events are not yet bothering residents who simply suffer more fatigue and burnout symptoms.

The strength of this study lies in its nationwide design and the invitation to all Dutch anaesthesiologists. Even though our reported studies have a high response rate, the results might have suffered from a selection effect, as not all anaesthesiologists responded to our questionnaire. Psychological problems and suicidal ideation may be of a different nature among this group. In addition, it should be noted that self-reporting about suicidality and psychological problems are subject to recall bias and denial. In addition, this study did not provide data that allowed us to test the possibility of selection effects among anaesthesiologists that cause these specialists to have personality characteristics that predispose to depression and suicidal ideation. Future research should relate personality dimensions such as neuroticism, idealism, and perfectionism to the prevalence of depression and suicidal ideation. In addition, more research is needed to understand the dynamics among this group compared to other medical professionals.

In summary, anaesthesiologists who make suicide attempts may be much more likely than non-physicians to die in their first attempt (Maulen, 2010). Areas of prevention of suicide among this group include restricting easy access to deadly means in episodes of depression, sleeplessness and suicidal ideation, through improved screening and supervision by experienced colleagues. Other areas include training residents and anaesthesiologists how to cope with emotional problems, the availability of quick and confidential access to psychotherapeutic assistance and, when needed, intensive counselling. In order for these prevention measures to take effect, further openness regarding both psychological and work-related problems among this group of specialists is indicated.

Author Note

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