

SUICIDES AMONG POLISH SEAMEN AND FISHERMEN DURING WORK AT SEA

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ABSTRACT

Retrospective data on 51 suicides of Polish seamen and fishermen in the years 1960-1999 during work at sea are presented. The impact of age, rank, and the period of service upon the incidence of these suicides is analysed.

Circumstances typical of the marine occupational environment, sources of stress and individual susceptibility related to the act of self destruction are discussed. Attention is devoted to suicide risk indicators and possible prevention measures to be taken among seafarers.

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The aim of the analysis was to determine:

- the magnitude of the problem among the Polish seamen and fishermen,
- the potential impact of the occupational environment factors and personality traits,
- the predictability and possibilities to prevent suicides on sea-going ships.

MATERIAL AND METHODS

The study group consisted of seamen and fishermen employed on Polish ships in the years 1960–1999. Retrospective analysis embraced on average 25 000 crew members per year, i.e. 92% of all persons employed in the Polish Merchant Navy (PMN) and on fishing vessels in this period. The calculated percentage share of suicides among all deaths registered at sea was compared with data referring to the general population.

RESULTS

The total number of deaths of seamen and fishermen and the percentage of suicides among them in the forty years period are given in Table 1, for three occupational groups: seamen, deep-sea fishermen, and Baltic cutter and boat fishermen.

Table I .The number of deaths and suicides during work on ships registered among Polish seamen and fishermen in 1960 – 1999.

| Study group | Total number of deaths N | Suicides N | Suicides (% of total deaths) |
|-------------------------------------|-----------------------------|---------------|------------------------------------|
| Polish seamen (PMN**) | 324 | 33 | 10.2 |
| Fishermen of DSFFSE* | 167 | 17 | ~ 10.2 |
| Baltic cutter and boat fishermen | 177 | 1 | ~ 0.6 |
| TOTAL: N | 668 | 51 | 7.6 |

*DSFFSE – Deep-Sea Fishing and Fishing Services Enterprise

**PMN – Polish Merchant Navy

According to the above data, among the total number of 668 registered deaths (100%), there were

51 suicides (7.6%). Both this number and percentage might have been higher, if taking into account that among missing persons, accounting for about 17% of all deaths at sea, 5% of cases had not been explained sufficiently as regards the cause of death. The supposition that suicides might also be included in that group of “missing at sea crew members” seems justified according to the literature data (9).

The incidence of suicides among seamen and deep-sea fishermen was found to be equally high (over 10% of deaths at sea), and was lower (less than 1%) among Baltic cutter and boat fishermen (Table 1).

The number of suicides among seamen and fishermen is compared in Table 2. with the number and percentage of suicides among Polish male population above 20 years of age in the period 1960 - 1999 (17, 21, 22, 25).

Table 2. The number of deaths and suicides among seamen and fishermen, and among the general male population aged 20+ years in Poland, in 1960 - 1999

| Study group/years | Deaths at sea | 1960–69 | 1970–79 | 1980–89 | 1990–99 |
|-----------------------------|-------------------|---------------------|---------------------|---------------------|---------------------|
| Polish seamen and Fishermen | Deaths total N | 149 | 167 | 177 | 175 |
| including: | Suicides n/(%) | 14 (9.4%) | 11 (6.6%) | 14 (7.9%) | 14 (8%) |
| Male population In Poland | Deaths total N | 1 710 975 | 3 060 000 | 1 971 216 | 3 906 248 |
| including: | Suicides n/(%) | ~ 22 000 (~1.3%) | ~ 68 000 (~2.2%) | ~ 39 000 (~0.2%) | ~ 48 000 (~1.2%) |

Data from Table 2. indicate that the percentage of suicides among seafarers was significantly higher ($P > 0.01$) than among male population in Poland (the comparison with male population of the country because the ships’ crews consisted of only male seafarers).

In Table 3. the number of deaths and percentage of suicides is indicated with regard to the age and period of service.

Table 3. The number of deaths and suicides of Polish seamen and fishermen in 1960-1999, in age groups

| Populati on studied | | Seamen of merchant Navy (PMN) | | Fishermen of DSFFSE | | Cutter and boat Fishermen | |
|---------------------------|-------|-------------------------------------|--|------------------------|--|------------------------------|--|
| | | Deaths Total N | Suicides (percentage of deaths) n (%) | Deaths Total N | Suicides (percentage of deaths) n (%) | Deaths Total N | Suicides (percentage of deaths) n (%) |
| Age group (years) | 17-19 | 1 | - | - | - | 8 | - |
| | 20-29 | 53 | 2 (3.7%) | 37 | 3 (8.1%) | 37 | - |
| | 30-39 | 116 | 12 (10.3%) | 55 | 10 (18.2%) | 55 | - |
| | 40-49 | 64 | 9 (14.1%) | 49 | 3 (6.1%) | 40 | 1 (2.5%) |
| | 50-59 | 83 | 11 (13.2%) | 24 | 2 (8.3%) | 25 | - |
| | > 60 | 7 | - | 2 | - | 12 | - |

Table 4. The number of deaths and suicides among Polish seamen and fishermen, 1960-1999 Their period of service at sea

| Populati on studied | | Seamen of PMN | | Fishermen of DSFFSE | | Cutter and boat Fishermen | |
|--|-------|----------------------|--|------------------------|--|------------------------------|--|
| | | Deaths total n | Suicides (percentage of deaths) n (%) | Deaths Total N | Suicides (percentage of deaths) n (%) | Deaths Total N | Suicides (percentage of deaths) n (%) |
| Period of service at sea (years) | 0,5-4 | 63 | 3 (4.8%) | 33 | 3 (9.1%) | 35 | - |
| | 5-9 | 70 | 7 (10%) | 28 | 4 (14.3%) | 28 | - |
| | 10-14 | 43 | 6 (13.9%) | 26 | 6 (23.1%) | 29 | - |
| | 15-19 | 38 | 5 (13.2%) | 27 | 2 (7.4%) | 18 | - |
| | 20-24 | 44 | 7 (15.9%) | 23 | 1 (4.3%) | 25 | 1 (4%) |
| | 25-29 | 39 | 4 (10.2%) | 18 | 1 (5.6%) | 16 | - |
| | >30 | 21 | 1 (4.8%) | 10 | 1 (10%) | 24 | - |

The highest absolute number of deaths at sea (including suicides) was noted among merchant seamen aged 30-39, while the highest percentage of suicides in this occupational group was recorded in the age group 40-49 years. The percentage of

suicides among deep-sea fishermen was the highest in the whole study group of seafarers.

The lowest number of suicides occurred among Baltic cutter fishermen, irrespective of the age and period of service.

As regards the period of service only, the highest percentage of suicides was noted among merchant seamen with a period of service from 10 to 24 years, and among deep-sea fishermen with the period of service of 10-14 years.

The number and percentage of suicides on sea-going ships with regard to the rank (officers – ratings) are given in Table 5. for 3 occupational groups (seamen, deep-sea fishermen, cutter and boat fishermen) in the years 1960-1999.

Table 5 The number of deaths and suicides in seamen and fishermen, in officers and ratings, 1960-1999

| Study group of seafarers | Rank | Deaths total N | Suicides /(percentage of deaths) n / (%) |
|---------------------------|--------------------|-------------------|---|
| Seamen of PMN | Officers | 105 | 11 / (10.5%) |
| | Ratings | 218 | 23 / (10.6%) |
| Fishermen of DSFFSE | Officers | 28 | 2 / (7.1%) |
| | Ratings | 139 | 16 / (11.5%) |
| Cutter and boat fishermen | No differentiation | 177 | 1 / (0.6%) |

It was found that the representation of the number and percentage of deaths among officers, i.e. persons with higher education, was lower than that among the rest of crew members (ratings).

A statistically significant difference in the suicide incidence between the group of officers and other crew members doesn't exist among deep-sea fishermen.

Table 6. shows the role of alcohol use and abuse as the causing or contributing factor in the incidence of deaths of seafarers at sea.

Table 6. Alcohol use and abuse as a direct or indirect cause of deaths recorded in 1960-1999 among seafarers

| Years Study group | Seamen of PMN | | | Fishermen of DSFFSE | | | Cutter and boat Fishermen | | | Total | | |
|-------------------------|---------------|----|------|------------------------|----|------|------------------------------|----|------|-------|-----|------|
| | N | n | % | N | N | % | N | N | % | N | n | % |
| 1960-1999 | 324 | 35 | 10.8 | 167 | 27 | 16.2 | 177 | 40 | 22.6 | 668 | 102 | 15.3 |

Description:

N – the total number of deaths in the study group

n – the number of deaths directly or indirectly caused by the alcohol use or abuse

% – percentage of deaths caused by the alcohol use or abuse

Having omitted work-related deaths, acute alcoholic intoxication might also include concealed cases of planned suicides. It is difficult, however, to assess their percentage share.

Also among 17% of the missing crew members (9), alcoholic intoxication or acute alcoholic psychosis preceding the missing cannot be excluded as suicide acts (15).

DISCUSSION

Seafarers are expected to meet special adaptation requirements created by the work environment. The organization of work at sea affects both individual and collective life of the crew (9). One of the main features of this life is a strict social isolation, imposing limitations in satisfying seafarer's physiological, psychological and sexual needs (31). They spend the whole time during the voyage within a closed, strongly hierarchical group of other crew members with a "paramilitary" organizational structure (18) and they have limited possibilities of contact with the family (24). This situation leads to the inability of a person to manage stress (27).

The pressure of such a situation in the marine environment seems particularly evident in the group of deep-sea fishermen, going for very long voyages (usually 4–6 months) under hard weather conditions, without calling at ports which offers a chance for recreation, having low living standards on their crowded trawlers-factory ships, and being exposed to high risk of work-related accidents and injuries.

The low proportion of suicides in the total number of deaths at sea in the population of inshore fishermen may be explained by the fact that despite their hard work on ships,

their voyages are short, and they are regularly and often at home and enjoy close contact with their families and their support.

The stress at work results from the interaction between man and the environment (2, 29).

Suicidal tendencies and the planning of methods how to commit suicide, are the effects of the extreme stress, exceeding the adaptation capabilities. Such a situation presents a serious hazard to the personal integrity (19) and leads to the disappearance of the self-preservation instinct (1). Highly neurotic persons display low resistance to the isolation stress (5).

Suicides account for a rather high percentage (8%) of all deaths during the work at sea (9, 11). Disappearance of a seafarer without trace from aboard a ship was recorded in about 17% of the deaths at sea (13) and in 5% of such cases the reason can not be explained. Among the possible reasons are the alcoholic intoxication (14, 16), mental diseases, homicides or suicides (13).

In more than 90% of suicides, people suffer from mental disorders or abuse drugs (33).

It may be assumed that some seafarers and fishermen who committed suicide had not planned such a death. The act was only intended (23).

The preservation of emotional equilibrium depends to a large extent on observing the rules of mutual respect by the crew members (8), ensuring them good conditions of work and rest on a ship and preventing exhaustion (4).

The responsibility connected with the type of work done and the rank of seafarers on board ship demand that also their psychological resistance to stress should be considered (10, 12, 26) at the time when their fitness for work at sea is assessed and the health certificate is issued. This could help to reduce the number of deaths at sea including suicides.

There is a list of pathologies which would render a person unfit for work at sea. Diseases of the nervous system, such as acute and chronic mental diseases, characteropathies, or alcoholism are included in this list, they should be the reason for the examining doctor to refuse issuing a health certificate to a seafarer (34, 8).

It happens that seamen suffering from mental disorders are employed at sea. In stressful situations, persons with a sub-clinical organic brain damage syndrome are much more prone to psychic trauma (15, 20). A frequent change of the workplace (32) is a signal of an inadequate social adaptation and integration with fellow workers, and this may indicate a high level of neuroticism. The social and family disintegration is also pointed out as a factor increasing the tendency for suicides, as for instance: pathological behaviour in the age of adolescence, divorce.

Such general suicide risk indicators do not help in individual cases to predict the behaviour of the examined person in future. Therefore, tests evaluating nervous system disorders should be made during the examinations of seafarers (3). Nonetheless, it can never be excluded that pathological changes may appear already after issuing the health certificate for work at sea; their appearance is to a certain degree unpredictable (30). They may be also the result of deliberately concealing a mental disease by the examined person, or incorrect previous medical diagnosis or imperfect circulation of medical documentation between doctors.

The fact of a significantly higher percentage of suicides among seafarers as compared to workers on land still remains unexplained (6, 7). The interpretation pointing at the role of factors typical of this work environment is probably only partly correct. However, it is possible that persons with concealed social integration problems deliberately choose the employment on sea-going ships.

It seems worthwhile to work out criteria for evaluation of the suicide risk in seafarers, based on a complex analysis embracing the neuroticism scale, alcohol abuse and drug addiction, anamneses and examinations indicating incidents of depression and other psychoses, family relations, group integration capability, power of self-control, stress resistance capabilities of the examined seafarer.

CONCLUSIONS

1. The incidence of suicides among Polish seamen and deep-sea fishermen during work at sea was significantly higher than suicides among the aged +20 years male population of the country.
 2. This applies particularly to seafarers aged 30–39 years, with a period of service from 10 to 24 years, working as ratings, with known or concealed alcohol addiction, and/or family problems or insufficient identification with the group.
 3. The possibilities to predict and prevent suicides among seafarers during their periodic health examinations are limited.
 4. Workshops and psychological training, as well as organizational actions on board ships should be directed towards improving the skills to manage stressful situations, resolve conflicts and gain support from the gr.
- This might reduce stress factors contributing to the acts of suicides.

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