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that their country did not have a road sign warning of elderly, disabled, blind, or deaf people. Of the 118 countries for which we obtained information, 35 (30%) had a road traffic sign featuring one or more of the elderly, blind, deaf, or disabled categories (table).

Comment

In the 1960s the Worboys committee suggested that road traffic signs should be predominately symbolic, because they are clearer from a distance.¹ Only eight countries that replied had a sign representing older people (table). The Namibian sign illustrated a generic picture of a pedestrian with the words “elderly people” below (fig 2). This avoids stereotyping, but the sign may not be as quickly or easily recognisable to the speeding motorist. The Australian sign has a caption only (fig 3).

Most (24/30) signs warning of disabled people were derived from the internationally recognised pictogram of a person using a wheelchair (a seated person on a wheel; fig 4) Although many patients with disabilities do not use a wheelchair, this is an easily recognisable sign.

All seven countries that had a sign representing deaf people used the internationally accepted logo of a round yellow symbol containing smaller black discs in a triangular formation (fig 5). We feel the meaning of this sign is not widely known.

Sixteen countries had road signs warning motorists of blind people in the vicinity. A popular sign, particularly in the eastern bloc, illustrated a pair of “John Lennon style” glasses (fig 6). Although many blind people do not wear these glasses, this symbol is informative and probably unobjectionable. A white stick also symbolises blindness; the Bangladeshi sign portrayed a stick (fig 7).

Many replies suggested that secondary inquiries had been made. However, we cannot corroborate this, and our study may be limited by the accuracy of the respondents.

People should not be stigmatised on road traffic signs, but signs must be clear and easily recognisable. Perhaps an international agreement on the content and style of such road signs is needed to meet



Fig 3 Australian "elderly persons" road traffic sign

Fig 1 UK "elderly or disabled persons" traffic sign

Fig 2 Namibian "elderly persons" road traffic sign

Fig 4 "Disabled persons" road traffic sign (France)

Fig 5 "Deaf" road traffic sign (Lithuania)

Fig 6 "Blind persons" road traffic sign (Armenia)

Fig 7 Bangladeshi "blind persons" road traffic sign

these criteria. Before new designs and standardisation are embarked on, however, research is needed to see if such signs improve the safety of these pedestrians.

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Competing interests: None declared.

- 1 *The history of British traffic signs*, 2nd ed. London: Department for Transport, Local Government and the Regions, Traffic Signs Branch, 1999.
- 2 *The Diplomatic Service List 2001*. London: Great Britain Foreign and Commonwealth Office, 2000:21-38.

How long did their hearts go on? A *Titanic* study

James A Hanley, Elizabeth Turner, Carine Bellera, Dana Teltsch

Several studies have examined post-traumatic stress in people who survive disasters but few have looked at longevity. The 1997 film *Titanic* followed one character, apparently fictional, but the longevity of the actual survivors, as a group, has not been studied. Did the survivors of the sinking of the *Titanic* have shortened life spans? Or did they outlive those for whom 14-15 April 1912 was a less personal night to remember?

Subjects, methods, and results

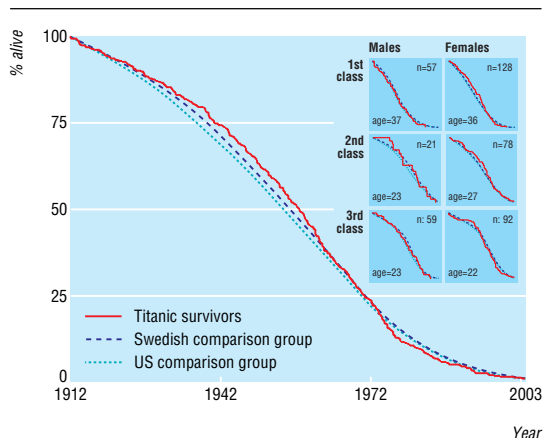
We limited our study to passengers. We used data from biographies listed in Encyclopedia Titanica, a website that claims to have “among the most accurate passenger and crew lists ever compiled.”¹ Of the 500 passengers listed as survivors, 435 have been traced. We calculated the proportion alive at each anniversary of the sinking.

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Percentage still alive on each anniversary of sinking of *Titanic* among 435 survivors and Swedish and white American comparison groups matched for age and sex. Inset: analysis by sex and class of travel (n=No of passengers; age=median age in 1912)

The largest groups travelling in first and second class were North American or British; most of those in third class were emigrating from Europe to the United States. Unable to find a comparison group with the same mix of backgrounds and selection factors, we created two “next best” comparison groups from available data. We calculated what proportions of an age and sex matched group of white Americans alive in 1912 would be alive at each anniversary. To do so, we converted current (cross sectional) life tables for the years 1912-2000² into cohort life tables. We created a second comparison group from life table data for Sweden, which was already in cohort form.³ Longevity differences were assessed by log rank tests.

The survival of the 435 passengers was slightly, but not significantly, longer than that of the two comparison groups (figure). On average they lived 1.7 years longer than the general population of the United States and 0.5 years longer than that of Sweden. This small advantage was limited to female passengers in first and second class (figure). Five women lived past 100, and the three survivors still alive are now in their 90s. Despite their higher socioeconomic status, male passengers in first class did not outlive similar age males in the general populations.

Comment

The longevity of *Titanic* survivors who could be traced was not remarkably different from that of age and sex matched individuals in the general population. The available life table data did not allow us to match on social class. Nevertheless, those who travelled third class had similar survival to our comparison group. We therefore wonder why males (and maybe even females) in first and second class did not fare considerably better than the general population.

Follow up is complete for 87% of the passengers who survived the sinking; only 65 people, several of them servants to those in first and second class, are still untraced and excluded from our analysis. The quality of the follow up data on those traced seems to be excellent. Most dates of birth, important for age matched comparisons, also seem to be trustworthy.

Although unable to find the perfect comparison group, we avoided errors made in other longevity comparisons.^{4,5} For the comparison group, we calculated the remaining lifetimes of people alive in 1912. Since age specific death rates fell substantially during the 20th century, we calculated these remaining lifetimes using the 1912-2000 death rates.

In the closing song of the 1997 film, the heroine tells us that her heart “must go on and on” and tells us twice more that it “will go on and on.” The *Titanic* survivors did not have shorter life spans than the general population. Nor did they, despite the determination implied by the lyric, substantially outlive them.

We thank the contributors to the Encyclopedia Titanica website for the data resource.

Contributors: JH developed the idea for this study. ET and CB completed the data abstraction. DT carried out the life table conversions. JH did the data analysis and wrote the paper. All authors contributed to the final version. JH acts as guarantor of the paper.

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Competing interests: None declared.

- 1 Encyclopedia Titanica. www.encyclopedia-titanica.org (accessed 6 Nov 2003).
- 2 National Center for Health Statistics. Table 10. Survivorship by age, race, and sex: death-registration States, 1900-1902 to 1919-21, and United States, 1929-31 to 2000. In: United States life tables, 2000. *National vital statistics reports* 2002;51(No 3):26-7. (DHHS Publication No (PHS)2003-1120 02-0644 (12/02).)
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Telemedicine



Six weeks after surgical repair of his fractured mandible a young man attended outpatients for follow up. In the absence of his hospital records or radiographs, it was difficult to be certain whether his right lip paraesthesia represented direct injury or was an iatrogenic complication of surgery. He was delighted to be able to help reduce our concern about the missing notes by showing us the latest feature of his new mobile phone. The image was taken before treatment and shows gross displacement at the fracture site, sufficient to confirm that residual nerve injury was a direct consequence of his injury.

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