

Cultural and musical activity among Norwegian doctors

BACKGROUND The cultural and musical activity of Norwegian doctors was studied in 1993. We wished to re-examine their cultural and musical activity, analyse the development and study the correlation with satisfaction, health and other leisure activities.

MATERIAL AND METHOD In the autumn of 2010, a survey was undertaken among a representative sample of economically active Norwegian doctors. The survey asked the same questions as in 1993, and the responses were also compared to the population studies conducted by Statistics Norway. We also used a cultural index that we have developed ourselves.

RESULTS Altogether 1 019 doctors (70 %) responded to the survey. They reported a higher level of cultural activity in 2010 than in 1993, measured in terms of reading of non-medical literature and visits to the cinema, theatre and concerts. The doctors engaged in musical activity of their own especially frequently: 58 % reported to be able to play an instrument, and 21 % reported to play on a regular basis, which is more than among other academic professions. We found a significant correlation between the doctors' level of cultural activity and their job satisfaction, general satisfaction, self-reported health and physical activity. The doctors who engage most frequently in cultural activities are thus most satisfied with their work and with life in general. Furthermore, they also have better self-reported health.

INTERPRETATION Norwegian doctors give priority to cultural and musical activities. The assertion that doctors are particularly fond of music is more than just a myth.

«Every day do some reading or work apart from your profession.» These words from Sir William Osler (1849–1919) have served as an inspiration for many generations of doctors (1). Partly, this is a matter of relaxation from a strenuous working day (in extent as well as in nature) as a doctor, and partly of activities that can provide stimulation and inspiration for the practice of medicine. The humanities can provide a better understanding of the contexts in which patients and doctors live and function, as well as an expanded perspective on the treatment of patients and the organisation of the health services (2). In addition, it is discussed whether cultural activity in itself can promote health. Several studies show that there is a correlation between cultural participation, cultural experiences and health, but these studies are of varying quality and a causal relationship cannot be documented (3–7).

The association between medicine and art and culture dates back to Greek mythology. Asclepius, the god of medicine and healing, was the son of Apollo, the god of music, poetry and all forms of art. A particularly close linkage has existed between medicine and music. A study from 1993 showed that Norwegian doctors were more interested and engaged in music than academics in general (8).

In 1993 we also investigated the other cultural activities pursued by Norwegian doctors (9). We found a generally high level of

cultural activity, in spite of large workloads. Much has changed in the nearly two decades that have passed since this study, in Norwegian medical practice as well as in cultural life. The number of doctors has increased, the group of doctors has become more heterogeneous and cultural life in general has expanded. The working hours of doctors, however, have changed little from 1994 until today (10, 11). At the same time, the competition for the time and attention of the public has intensified. This applies to doctors as well.

How has the cultural and musical activity of doctors changed? To investigate this issue, we conducted another survey and compared the results with data on similar activities in the Norwegian population as a whole to analyse developments since 1993.

Material and method

Since the early 1990s, the Institute for Studies of the Medical Profession has regularly conducted surveys among a representative sample of Norwegian doctors, the so-called «reference panel». Over the years there has been some turnover in the panel, including for reasons of retirement of some members. The panel has gone through two renewals and expansions, the last of which in 2008, when a randomly selected group of younger doctors who had received their licence to practice after 2000 were included.

In the 2010 survey, cultural and leisure

Magne Nylenna

magne.nylenna@kunnskapssenteret.no
Norwegian Knowledge Centre for the Health Services
and
Institute of Health and Society
University of Oslo
and
Department of Public Health and General Practice
Norwegian University of Science and Technology

Olaf Gjerl w Aasland

LEFO – Institute for Studies of the Medical Profession
and
Department of Health Management and Health Economics
Institute of Health and Society
University of Oslo

MAIN MESSAGE

Norwegian doctors engage frequently in cultural activities in their leisure time, and the level of activity increased from 1993 to 2010.

Doctors engage in musical activity with particular frequency.

Frequent cultural activity correlates with high job satisfaction, good self-reported health and physical activity.

Table 1 Reading pattern for non-medical literature, based on the question: «What kind of book did you read during the past day/did you read last (if several, which did you read most)?» Percentages with 95 % confidence interval. Significant differences in bold type.

| | All respondents 1993 (N = 475) | | All respondents 2010 (N = 1 004) | |
|---------------------------------------|-----------------------------------|--------------------|-------------------------------------|--------------------|
| Novel, collection of short stories | 48.2 | (43.7–52.7) | 69.9 | (67.1–72.7) |
| Drama, poetry | 2.1 | (0.8–3.4) | 0.8 | (0.3–1.4) |
| Biography, memoir | 8.2 | (5.7–10.7) | 5.6 | (4.2–7.0) |
| Science, technology, philosophy | 9.5 | (6.9–12.1) | 7.0 | (5.4–8.6) |
| Social issues, politics, art, history | 16.1 | (12.8–19.4) | 10.1 | (8.2–12.0) |
| Religious literature | 6.5 | (4.3–8.7) | 1.8 | (1.0–2.6) |
| Other | 8.8 | (6.3–11.4) | 4.9 | (3.6–6.2) |

activities were one of six topics. Many of the questions from 1993 were repeated to permit comparison of responses. The questionnaires differed in some places: in 1993, respondents were asked to report what kind of book they had read during the last 24 hours, while in 2010, the question concerned the last book to be read. As a result, there were fewer responses to this question in 1993 than in 2010 (Table 1).

The questionnaires were distributed in the autumn of 2010, and one reminder was sent out. None of the doctors who responded in 1993 were included in this survey.

The reported specialties of the doctors have been aggregated into main groups, such as general practice, laboratory medicine, internal medicine, surgery, psychiatry and public health. To compare the doctors' cultural and musical activity with the level in the population as a whole, respondents with a long university or university college education in Statistics Norway Culture Barometer 2008 and Media Barometer 2009 have been used (12, 13).

To investigate the extent to which cultural activity is correlated with satisfaction, health and other leisure activities we used the following measures: *job satisfaction*, measured with the aid of an index based on ten validated questions (14); *subjective well-being*, measured with a single question: «When you think of how your life is right now, are you mainly satisfied or are you mainly dissatisfied?», with scores on a scale from 1 (very dissatisfied) to 7 (very satisfied); *self-reported health*, measured with a single question: «On the whole, would you say that your health is poor (1 point), not so good (2 points), good (3 points) or very good (4 points)»; *job-related stress*, measured with the aid of Siegrist's effort-reward instrument, based on nine validated questions (15), and *exercise and physical activity*,

measured with the question «How often during the last year have you undertaken physical activity for purposes of exercise, e.g. gone jogging, taken long walks, done gymnastics, gone swimming, played football, tennis etc.?», with the response alternatives never (1 point), once a month or less (2 points), 2–3 times a month (3 points), 1–4 times a week (4 points), daily or almost daily (5 points). As in 1993, we measured the doctors' cultural activity with the aid of an index which is based on self-reported reading of non-medical literature for more than 20 minutes over the past day, playing a musical instrument, playing in an orchestra or singing in a choir (1 point for each of the three activities). Similarly, points were scored for visits to the cinema, theatre, opera and concerts of classical or popular music (1 point for 1–4 visits and 2 points for five or more visits over the last 12 months). The maximum possible score on this index is 13 points.

The assessment of any statistically significant differences in comparisons between groups is based on a 95 % confidence interval (CI). Bivariate correlations are denoted with Spearman's ρ (rho), since many of the variables being compared are not normally distributed.

Results

The questionnaire was sent to 1 448 doctors, and 1 019 (70 %) of them responded. Altogether 37 % of the respondents were women. The average age of the women respondents was 45.8 years (95 % CI: 44.9–46.7 years), for the men it was 52.9 years (95 % CI: 52.1–53.7 years).

Reading

During the past day, 90 % (95 % CI: 89–92 %) of the doctors had read a traditional newspaper, whereas 21 % (95 % CI:

19–24 %) had read weeklies or other non-medical periodicals, and 50 % (95 % CI: 47–53 %) had read non-medical books. The corresponding proportions among academics in the Norwegian population amounted to 84 % (95 % CI: 79–89 %), 11 % (95 % CI: 7–15 %) and 43 % (95 % CI: 37–49 %) respectively. Assessed by the 95 % confidence interval, the doctors read newspapers a little more frequently and non-medical periodicals clearly more frequently than other academics.

Among the women, 79 % (95 % CI: 74–83 %) reported novels and short stories as the literary genre they had read last, compared to 65 % (95 % CI: 61–69 %) of the men. Correspondingly, 4 % (95 % CI: 2–6 %) of the women reported having read literature on social issues, politics, art or history, compared to 14 % (95 % CI: 11–16 %) of the men. Compared to 1993, there was a significant shift from non-medical non-fiction towards fiction for both genders. The reading pattern for non-medical literature is shown in Table 1. We found a weakly positive, but statistically significant correlation between the time spent on reading non-medical literature and the time devoted to reading medical literature ($\rho = 0.07$, $p = 0.05$, $n = 875$).

Cultural activities

The respondents reported a high level of cultural activity. Altogether 81 % (95 % CI: 79–84 %) had been to the cinema during the last 12 months, 78 % (95 % CI: 76–81 %) had been to the theatre and 47 % (95 % CI: 44–50 %) had been to the opera. Corresponding figures for academics in the population as a whole were 90 % (95 % CI: 86–94 %), 67 % (95 % CI: 61–73 %) and 17 % (95 % CI: 12–22 %) respectively (13). The doctors thus go to the cinema less frequently, but to the theatre and opera more frequently than other academics, assessed by the 95 % confidence interval.

The average cultural index score for women was 4.8 (95 % CI: 4.6–5.0) and 4.6 (95 % CI: 4.4–4.7) for men. The corresponding figures for 1993 were 4.5 (95 % CI: 4.2–4.7) for women and 4.1 (95 % CI: 3.9–4.2) for men (9). In other words, the cultural index scores have increased for both men and women doctors from 1993 to 2010, and for the men this increase is statistically significant. We found significant positive correlations between the cultural index scores and job satisfaction ($\rho = 0.105$, $p = 0.002$, $n = 884$), general satisfaction ($\rho = 0.071$, $p = 0.033$, $n = 903$), self-reported health ($\rho = 0.084$, $p = 0.013$, $n = 881$) and exercise and other forms of physical activity ($\rho = 0.171$, $p < 0.001$, $n = 904$). Moreover, the cultural index scores were negatively correlated to job-related stress ($\rho = -0.102$, $p = 0.003$, $n = 866$).

Table 2 Distribution of doctors who were active members of an orchestra, choir, vocal or musical ensemble in 2010 compared to 1993 (proportion in per cent with 95 % confidence interval). With the exception of general practice and surgery, all changes are significant.

| | 1993 (N = 1 031) | | 2010 (N = 1 019) | |
|----------------------|---------------------|---------|---------------------|---------|
| All | 8 | [6–10] | 13 | [11–15] |
| Gender | | | | |
| Women | 6 | [5–8] | 12 | [10–14] |
| Men | 9 | [7–11] | 14 | [12–16] |
| Specialty | | | | |
| General practice | 12 | [10–14] | 13 | [11–15] |
| Laboratory medicine | 3 | [2–4] | 12 | [10–14] |
| Internal medicine | 9 | [7–11] | 13 | [11–15] |
| Surgical specialties | 7 | [5–9] | 9 | [7–11] |
| Psychiatry | 9 | [7–11] | 18 | [16–20] |
| Public health | 11 | [9–13] | 15 | [13–17] |

Musical activities

A total of 58 % (95 % CI: 55–61 %) of the respondents reported to be able to play an instrument, and 21 % (95 % CI: 19–24 %) reported to play on a regular basis. Altogether 13 % (95 % CI: 11–15 %) reported that they were currently active members of a choir or an orchestra. The corresponding figures for academics in the general population were 44 % (95 % CI: 38–50 %), 11 % (95 % CI: 7–15 %) and 9 % (95 % CI: 5–13 %) respectively (13). It may thus seem that doctors can and do play more frequently than others, although the difference in active rates of participation in a choir or orchestra is not statistically significant, assessed by the confidence interval.

The doctors reported a higher level of musical activity in 2010 than in 1993 (Table 2). Among the active musicians, piano/electronic organ was the most common instrument by far, followed by guitar/stringed instruments.

Discussion

Norwegian doctors engage frequently in cultural and musical activities, and more frequently in 2010 than in 1993. In particular, the interest in and level of activity rela-

ted to music is high, and higher than in a comparable group of the general population.

Self-reported activity, including events 12 months back in time, will be prone to a certain amount of error. Perhaps some of the respondents want to appear more culturally active than they really are? This source of error can be assumed to be the same as in our comparable study from 1993 (9) and Statistics Norway's survey of activity in the Norwegian population as a whole (12, 13). The sample of doctors is representative of the Norwegian medical profession, and with a response rate of 70 % it is reasonable to assume that the respondents are representative of the group as a whole.

People's reading habits are changing. The proportion of people who read a traditional newspaper on an average day has decreased from 85 % in 1994 to 65 % in 2009 in the Norwegian population, in the age group 9–79 years (16). The differences between educational groups in terms of reading of newspapers have also increased. While in 1994, a proportion of 83 % of those who had lower secondary education and 92 % of those with a university education read a newspaper every day, this proportion had decreased to 62 % and 84 % respectively by 2008 (12). Doctors read newspapers more frequently than other academics, and the decrease in reading frequency has been smaller among doctors (from 95 % to 90.5 %).

On the other hand, the reading of books has increased among doctors (from 43 % to 50 %) as well as among other academics (from 33 % to 43 %). As in 1993, we found a positive correlation between the reading of medical and non-medical literature. Those who are avid readers, read a lot of both literary categories.

Population studies show that education has a large influence on the attendance at various cultural events, and a considerably larger influence than household income (16). Accordingly, it comes as no surprise that the doctors frequently engage in cultural activities. Their number of visits to the theatre and to the opera in particular is higher than among other academics.

The largest difference between the doctors and the general population turned out to be in terms of musical activity. Compared to other academics, twice as many doctors play an instrument on a regular basis. It is noteworthy that more women than men doctors responded that they could play an instrument, while more men than women reported to play on a regular basis. The proportion of doctors who reported to be members of a choir or orchestra increased from 8 % in 1993 to 13 % in 2010 (9). Among academics in general, this proportion has remained stable at 9 % (16).

Whereas we could not detect any definite

correlation between our cultural index and the doctors' job satisfaction in 1993, we now found a significant correlation: the more cultural activity outside work, the more job satisfaction, general satisfaction and better self-reported health, and the less job stress. We cannot deduce any causal correlation on the basis of a cross-sectional study, but our findings are consistent with other studies among health personnel. In a cross-sectional study among somewhat less than 3 000 British doctors, there was a significant correlation between the doctors' cultural and musical leisure activities and their professional engagement (17).

Advice on healthy and salutogenic measures should be based on ample documentation, preferably controlled studies. As yet, such knowledge on the effects of cultural and musical activity is sparse. However, one randomised controlled study has been undertaken. In Umeå, Sweden, a total of 101 health-sector employees were randomised into two groups. One group was exposed to cinema, concerts and art exhibitions or participated in a choir for eight weeks. The intervention group subsequently scored higher on self-reported health, social function and vitality (18). Moreover, it is difficult to imagine any major side effects or adverse effects of such activity.

There is good reason to endorse Sir William's exhortation: Cultural leisure activities are to be recommended!

Magne Nylenna (born 1952)

is Director of the Norwegian Knowledge Centre for the Health Services.

The author has completed the ICMJE form and declares no conflicts of interest.

Olaf Gjerlöv Aasland (born 1944)

Director of LEFO – Institute for Studies of the Medical Profession and Professor at the Institute of Health and Society, University of Oslo. The author has completed the ICMJE form and declares no conflicts of interest.

References

1. Bryan CS. Osler: inspirations from a great physician. Oxford: Oxford University Press, 1997: 204.
2. Nylenna M. Livet er mer. Tidsskr Nor Lægeforen 1997; 117: 4357.
3. Knudtsen MS, Holmen J, Håpnes O. Hva vet vi om kultur deltakelse og helse? Tidsskr Nor Lægeforen 2005; 125: 3418–20.
4. Bygren LO, Konlaan BB, Johansson S-E. Attendance at cultural events, reading books or periodicals, and making music or singing in a choir as determinants for survival: Swedish interview survey of living conditions. BMJ 1996; 313: 1577–80.

>>>

5. Konlaan BB, Bygren LO, Johansson SE. Visiting the cinema, concerts, museums or art exhibitions as determinant of survival: a Swedish fourteen-year cohort follow-up. *Scand J Public Health* 2000; 28: 174–8.
6. Wilkinson AV, Waters AJ, Bygren LO et al. Are variations in rates of attending cultural activities associated with population health in the United States? *BMC Public Health* 2007; 7: 226.
7. Cuypers K, Krokstad S, Holmen TL et al. Patterns of receptive and creative cultural activities and their association with perceived health, anxiety, depression and satisfaction with life among adults: the HUNT study, Norway. *J Epidemiol Community Health* 2012; 66: 698–703.
8. Aasland OG, Kallevik SA. Er leger mer interessert i musikk enn andre yrkesgrupper? *Tidsskr Nor Lægeforen* 1993; 113: 3737–42.
9. Nylenna M, Aasland OG, Falkum E. Survey of Norwegian doctors' cultural activities. *Lancet* 1996; 348: 1692–4.
10. Aasland OG, Rosta J. Hvordan har overlegene det? *Overlegen* 2011; 1: 47–55.
11. Aasland OG, Rosta J. Fastlegenes arbeidstid. *Tidsskr Nor Legeforen* 2011; 131: 1076–9.
12. Vaage OF. Norsk kulturbarometer 2008. Oslo/Kongsvinger: Statistisk sentralbyrå, 2009.
13. Vaage OF. Norsk mediebarometer 2009. Oslo/Kongsvinger: Statistisk sentralbyrå, 2010.
14. Warr P, Cook J, Wall T. Scales for the measurement of some work attitudes and aspects of psychological well-being. *J Occup Psychol* 1979; 52: 129–48.
15. Siegrist J. Adverse health effects of high-effort/low-reward conditions. *J Occup Health Psychol* 1996; 1: 27–41.
16. Vaage OF. Kultur- og mediebruk i forandring. Bruk av kulturtilbud og massemedier fra 1991 til 2006. Statistiske analyser nr. 95. Oslo/Kongsvinger: Statistisk sentralbyrå, 2007.
17. McManus IC, Jonvik H, Richards P et al. Vocation and avocation: leisure activities correlate with professional engagement, but not burnout, in a cross-sectional survey of UK doctors. *BMC Med* 2011; 9: 100.
18. Bygren LO, Weissglas G, Wikström BM et al. Cultural participation and health: a randomized controlled trial among medical care staff. *Psychosom Med* 2009; 71: 469–73.

Received 3 January 2013, first revision submitted 22 February 2013, approved 8 April 2013. Medical editor Are Brean.