

Modern health worries in medical students

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Abstract

Objective: The aim of this study was to investigate the association between modern health worries (MHW), subjective health complaints, and use of health care services in first-year Dutch medical students, and to compare MHW in Dutch and New Zealand cohorts. **Methods:** Two hundred and twenty-seven Dutch first-year medical students completed questionnaires assessing MHW, subjective health complaints, positive and negative affect (PA and NA, respectively), and use of health care services. **Results:** Dutch medical students were most concerned about drug resistant bacteria and least concerned about vaccination programmes. Overall, female

students were more concerned about modern health issues than were male students. Students' scores on the MHW scale were significantly associated with subjective health complaints. Subjective health complaints were also significantly related to the use of health care services. The factor structure of the MHW scale was replicated. Respondents reported significantly lower scores on all MHW items than did New Zealand students. **Conclusions:** Worries about modernity are reliably associated with subjective health complaints and use of health care services in Dutch medical students.

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Introduction

Individuals are becoming increasingly worried about potential environmental health threats such as environmental pollution, radiation from cell phones, genetically modified food, and depletion of the ozone layer [1]. A number of factors are believed to be associated with the heightened societal concern for environmental health threats, including the difficulty in adjustment to the rapid introduction of new technologies. New knowledge is often associated by the public with new potential health threats (such as the discovery of a hole in the ozone layer), and new technologies, such as in the field of genetics and food processing, are accompanied by public distrust and concern [2]. Furthermore, increased media attention on the environmental causes of illness and the underreporting of more plausible factors associated with the development of

diseases, such as lifestyle factors, are believed to heighten public concern [3–5]. Finally, individuals are believed to be increasingly aware of health issues and of their vulnerability to illness [6].

Along with a heightened societal concern for environmental health threats, an increase in functional somatic environmentally associated diseases, such as sick building syndrome, multiple chemical sensitivity syndrome, and mercury poisoning from dental fillings, is reported [7–11]. Increased concerns about the environment and modernity have been found to be related to symptom reporting [12,13], use of alternative health care services, and individuals' perceptions of the cause of illness [1]. Normal everyday symptoms are nowadays more easily interpreted as being signs of disease [14].

In a study on modern health worries (MHW) in New Zealand medical students, Petrie et al. [1] presented the MHW scale and examined its relationship to symptoms and perceptions of health and health care utilization. Researchers have been consistent in finding a high prevalence of stress-related health problems in this group

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of individuals [15,16]. Our aim was to investigate the MHW of first-year Dutch medical students and their possible role in students' health complaints and utilization of health care services. We hypothesized that students' MHW would be significantly related to both their health complaints and medical care utilization. We also predicted that health complaints would mediate the relationship between MHW and medical care utilization. Finally, we sought to investigate whether the nature and strength of the MHW reported by students in New Zealand would be similar to those in Dutch students.

Method

Participants

A total of 227 first-year medical students from Leiden University Medical Centre participated in this study. The group was composed of 58 males (26.4%) and 162 females (73.6%; 7 individuals did not report their gender), with a mean age of 19.3 years (S.D.=2.1; range=17–35).

Procedure and instruments

At the time of this study, the students were enrolled in a first-year course on psychosocial development. They were asked to complete an anonymous questionnaire. All students agreed to participate.

Modern health worries

We used a Dutch translation of the MHW scale to investigate to what extent students were worried about aspects of modern life that could affect their health. Items were scored from 1 (*no concern*) to 5 (*extreme concern*). The scores on all items were summed to obtain a total MHW score, with higher scores indicating more concern.

Subjective health complaints

We used a Dutch version of the Subjective Health Complaints scale (SHC; [17,18]). The scale comprised 29 items focussing on the severity and duration of subjective somatic and psychological complaints, from which five factors can be derived: musculoskeletal pain, pseudoneurology, gastrointestinal problems, allergy, and flu. Students were asked to rate, on a four-point scale (*not at all*=0, *severely*=3; Cronbach's α =.80), how severely they were affected by each complaint in the last month and the duration (number of days) of each complaint during the last month.

Positive and negative affect

To assess these two affective state dimensions, we used the Dutch translation of the Positive and Negative Affect Schedule (PANAS) with two subscales, Positive Affect (PA) and Negative Affect (NA), each consisting of 10 items reflecting distinct mood states [19]. Students were asked to

rate on a five-point scale (ranging from *not at all* to *extremely*), the extent to which they generally (or on average) experience each mood state. The scores on each item were summed, with higher scores indicating higher ratings of PA or NA (Cronbach's α PA scale=.85; Cronbach's α NA scale=.81).

Use of health care services

Students were asked to report their number of visits to their general practitioner, a medical specialist, a psychologist or psychiatrist, a physiotherapist, and an alternative healer in the last year, on a four-point scale ranging from 1 (*never*) to 4 (*five times or more*). They were also asked to report how often they used prescribed drugs, over-the-

Table 1

Principal components analysis of the Modern Health Worries scale, factor scores, and Cronbach's α for each factor

MHW scale items	Toxic interventions	Environmental pollution	Tainted food	Radiation
Leakage from microwave ovens	.72	.15	.09	.12
Bacteria in air conditioning systems	.70	.20	.19	.05
Contaminated water supply	.69	.29	.20	-.03
Amalgam dental fillings	.68	.08	.26	.14
Fluoridation of water	.66	.11	.30	.20
Toxic chemicals in household products	.63	.31	.22	.11
Overuse of antibiotics	.49	.19	.43	-.01
Medical and dental X-rays	.47	.13	-.09	.42
Vaccination programmes	.45	.07	.33	.18
Poor building ventilation	.40	.12	.38	.14
Traffic fumes	.15	.88	.20	.03
Depletion of the ozone layer	.20	.82	.16	.06
Other environmental pollution	.21	.81	.19	.06
Air pollution	.16	.80	.19	.12
Pesticide spray	.23	.55	.49	-.02
Noise pollution	.25	.41	.26	.15
Antibiotics in food	.23	.19	.83	.11
Hormones in food	.20	.20	.82	.19
Pesticides in food	.38	.30	.65	.11
Additives in food	.21	.31	.64	.32
Drug-resistant bacteria	.47	.21	.56	-.09
Genetically modified food	.18	.40	.53	.23
Radio or cell phone towers	.08	-.02	.17	.81
High-tension power lines	.19	.12	.15	.65
Cell phones	.04	.08	.10	.67
<i>n</i>	225	223	226	227
Total sums of squared loadings	9.63	1.59	2.04	1.35
Percent explained variance (%)	38.5	6.3	8.2	5.4
Cronbach α	.86	.88	.89	.63
Total Cronbach α	.93			

Bold=Retained items in factors.

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