Registries of occupational diseases and their use for preventive policy
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Chapter 6:

Diagnosing and reporting of occupational diseases: a quality improvement study

Abstract

**Objective:** To assess the need for quality improvement of diagnosing and reporting of noise-induced occupational hearing loss and occupational adjustment disorder.

**Methods:** Performance indicators and criteria for the quality of diagnosing and reporting were developed. Self assessment questionnaires were sent to 1705 occupational physicians. The performance of occupational physicians was then assessed by separate scores per performance indicator and by a total quality score.

**Results:** The mean quality score for diagnosing and reporting was 6.0 (SD: 1.4) for noise-induced occupational hearing loss and 7.9 (SD: 1.5) for occupational adjustment disorder on a scale of zero to ten. For noise-induced occupational hearing loss, there was a need for quality improvement of the aspects of medical history, audiometric measurement, clinical diagnosis of the disease and reporting and for occupational adjustment disorder the aspect of other competing causes needed improvement.

**Conclusions:** The quality of diagnosing and reporting could be improved for noise-induced occupational hearing loss and occupational adjustment disorders. Information, education and practical tools are proposed for quality improvements.
Introduction

In many countries, the registration of occupational diseases is an important source of information for preventive policy. National registration systems in most countries derive their figures from compensation schemes for occupational diseases, while in a few countries there are voluntary registration schemes in addition to national registries (1-3). Several authors have criticized the reliability of the figures provided by national registries and the comparability between countries because of the differences in registration systems. Moreover, the lack of coverage of the working population, the high degree of underreporting and poor quality control add to the limited reliability of the figures (4-6).

Another important determinant affecting the quality of the registration of occupational diseases is the availability of diagnostic criteria or case definitions. Most compensation systems have strict criteria for the acknowledgement of occupational diseases, whereas reporting schemes with a preventive purpose often apply criteria less strictly and also offer the possibility to report suspected cases. Criteria should preferably be based on evidence from aetiological and diagnostic research, for example, like those developed for work-related upper-extremity musculoskeletal disorders and for work-related low back pain (7,8). Physicians should use these criteria or case definitions in diagnosing and reporting. However, poor performance by physicians in diagnosing and reporting occupational diseases has been reported (4,9-11).

During this study all companies in the Netherlands with at least one employee were legally obliged to have a contract with an Occupational Health Service, which means that nearly all employees have access to an occupational physician. The total number of employees in the Netherlands was 6.116 million in the study period. The largest sectors were Health Care and Welfare (967.000 employees), Industry (966.000 employees), Repair and Trade (907.000 employees), Business Services (715.000 employees) (12). The number of occupational physicians in the Netherlands was 1774 in the study period (13). Occupational physicians are obliged by law to report occupational diseases since 1999. The Dutch government has made the Netherlands Center for Occupational Diseases (NCOD) the institute responsible for the registry of occupational diseases. In the Netherlands a compensation scheme for occupational diseases does not exist and thus occupational diseases are only notified for preventive purposes.
As good quality diagnoses are a prerequisite for reliable figures on occupational diseases, the NCOD has developed guidelines on the diagnosis of occupational diseases. These guidelines are available through the internet and are used as training material for occupational physicians during their vocational training (14). The guidelines include criteria for the clinical diagnosis of the occupational disease and for the minimum level and duration of exposure to risk factors at work. However, when occupational physicians report cases, they are not required to indicate if the criteria from the guidelines have been met. Therefore, we decided to study the quality of diagnosis and reporting, and to assess the needs for quality improvement.

Our study was restricted to two important occupational diseases: noise-induced occupational hearing loss and occupational adjustment disorder. Adjustment disorders (DSM-IV definition) are maladaptive reactions to identifiable psychosocial stressors occurring within a short time after onset of the stressor. They are manifested by either impairment in social or occupational functioning or by symptoms (nervous exhaustion, nervous breakdown, depressive thoughts etc.) that are in excess of a normal and expected reaction to the stressor. The presence of e.g. depressive disorders and anxiety disorders has to be excluded. We have chosen these diseases because they are relatively prevalent and represent two different types of guidelines. The guideline for noise-induced occupational hearing loss is derived from the European list of occupational diseases and is strictly defined with clear quantitative criteria, whereas the guideline for occupational adjustment disorder is less strictly defined and includes mainly qualitative criteria (15). The disease occupational adjustment disorder is not recorded in the European list as an occupational disease. However, in several registration projects (for example, in the Surveillance of Occupational Stress and Mental Illness (SOSMI) scheme in the UK) occupational mental ill-health is registered for preventive purposes (16).

The general objective of this study was to assess the need for quality improvement of diagnosing and reporting of noise-induced occupational hearing loss and occupational adjustment disorder as notified to the NCOD. The specific aims of this study were: 1. To develop performance indicators and criteria for the quality of diagnosing and reporting of cases of noise-induced occupational hearing loss and occupational adjustment disorder. 2. To assess this quality in cases notified by occupational physicians to the NCOD in terms of compliance to the notification guidelines. 3. To make a preliminary evaluation of the need for quality improvement.
Methods

The performance indicators and criteria were developed on the basis of the generic assessment procedure for occupational diseases and on the Dutch notification guidelines for noise-induced occupational hearing loss and occupational adjustment disorder (17). The assessment procedure consists of five steps:

1. diagnosis of the disease
2. assessment of potential work-relatedness as far as evidence exists in the literature
3. exposure assessment in the case studied
4. assessment of other competing causes
5. conclusion of work-relatedness.

If work-relatedness is concluded, the disease must be reported to the NCOD. Based on this procedure and on evidence from the literature, the NCOD has developed guidelines for noise-induced occupational hearing loss and for occupational adjustment disorder (14).

For the different steps of the assessment procedure, we formulated one or more performance indicators. We derived two performance indicators from the first step of the generic assessment: medical history – which we considered as an essential step in diagnosing – and clinical diagnosis of the diseases. We summarized the second and third step of the generic assessment in the performance indicator assessment of exposure. The fourth step provided the performance indicator assessment of other competing causes. The fifth step corresponds with the performance indicator conclusion about work-relatedness. We considered audiometric measurement as an essential element in the diagnosis of noise-induced occupational hearing loss and added it as an extra performance indicator. Finally, we added reporting (which is obligatory in the Netherlands for all occupational physicians) according to the internal criteria of the NCOD as an extra performance indicator for both diseases. We determined criteria based on the decision moments in the guidelines. The internal criteria of the NCOD for reporting concern formal demands which items at least have to be filled in.

Face validity of performance indicators and criteria was tested by asking three senior scientists in the field of occupational health to compare the preliminary performance indicators and criteria with the guidelines and to give a comment. Appendix 1 presents the set of performance indicators and criteria for both diseases.
The quality improvement study was carried out from 1 April 2004 to 1 July 2005. We developed a questionnaire based on the performance indicators and criteria for both diseases, and then asked a panel of two experienced occupational physicians to test the feasibility of the questionnaires. Appendix 2 presents the corresponding questionnaires. Next, we sent five copies of a questionnaire on noise-induced occupational hearing loss and five copies of a questionnaire on occupational adjustment disorder to all 1705 occupational physicians recorded in the database of the NCOD and asked them to participate in the study. This database contains the details of occupational physicians who have notified one or more occupational diseases to the NCOD since the database was started in 1997. We asked the physicians to fill in a questionnaire as soon as they reported to the NCOD a case of either noise-induced occupational hearing loss or occupational adjustment disorder. The questionnaires did not have to be returned at the same time as the notification form. Occupational physicians could get more questionnaires if they needed.

The Dutch reporting form for occupational diseases comprises the following items: name and code of the occupational health service; name and code of the physician; date of notification; patient file number; year of birth and sex of the patient; occupation; economic sector; ICD-10 code and description of diagnosis; causes; pre-existent conditions; degree of certainty of diagnosis (probable or sure); context of detecting; advice given.

The questionnaire comprises the following items corresponding to the reporting form for occupational diseases: name and code of the physician; date of notification; year of birth and sex of the patient; ICD-10 code of the diagnosis. Data from each questionnaire were linked to the reported cases database with the occupational physician code and patient data. For each reported case we scored the performance indicators on the basis of the corresponding questionnaire. A performance indicator was scored 1 if the criteria were satisfied and 0 if the criteria were not satisfied.

For each performance indicator the percentage of cases in which the criteria were met was calculated for both diseases. If the criteria for the performance indicator were fulfilled in every submitted case the score for that performance indicator would amount up to 100%. We considered a score of less than 60% for a performance indicator as a need for quality improvement.
Next, we calculated a score per case by summing up all performance indicators that were met for both diseases. In the calculation all performance indicators had the same weight. Then we calculated the mean score for all cases of a disease. To present the scores on a scale of 0 to 10 we divided it by the number of performance indicators i.e. 7 for noise-induced occupational hearing loss and 6 for occupational adjustment disorder and subsequently multiplied it by 10. We called this the total quality score.

Furthermore, we calculated the intra-doctor variability of the performance of diagnosing and reporting for both diseases. We determined this variability by calculating a coefficient of variation (CV = (sd/m) * 100) of the total quality score for all occupational physicians who reported more than one case of either noise-induced occupational hearing loss or occupational adjustment disorder. Next, we calculated the mean coefficient of variation as a measure for the mean intra-doctor variability. A value of less than 20% is considered as low variability, of 20%-40% as moderate variability and of more than 40% as high variability (18). The inter-doctor variability was not calculated because the participating physicians assessed different cases.

Results

Ten occupational physicians completed a total of 23 questionnaires on noise-induced occupational hearing loss, while 52 completed 125 questionnaires on occupational adjustment disorder. Three physicians returned questionnaires both on noise-induced occupational hearing loss and occupational adjustment disorder. The respondents came from 25 different Occupational Health Services. One of the respondents was self employed. The respondents reported more cases of all occupational diseases than the average. The mean number of cases of all occupational diseases reported by the respondents was 10.7, while the mean number of cases of all occupational diseases reported by all occupational physicians was 6.2.

In the study period a total number of 1440 cases of noise-induced occupational hearing loss has been reported by 395 occupational physicians to the National Registry. Of 87 cases the reporting physician could not be identified. A total number of 842 cases of occupational adjustment disorder has been reported by 145 occupational physicians to the National Registry. Of 685 cases the reporting
physician could not be identified, mostly because they were reported in batches by the organization of
the reporting occupational physicians.

The mean age of the cases that corresponded with the returned questionnaires on noise-
induced occupational hearing loss was 48 years (range: 32 to 58 years). All of these cases were
males. The mean age of the cases that corresponded with the returned questionnaires on
occupational adjustment disorder was 44 years (range: 19 to 61 years). Of these cases, 57 were men
(46%) and 68 were women (54%). For the total number of cases reported to the National Registry in
the study period the mean age of the reported cases was 49 years (range: 20 to 69 years) for noise-
induced occupational hearing loss and 44 years (range: 20 to 65 years) for occupational adjustment
disorder. The percentage of males was 98% for noise-induced occupational hearing loss and 54% for
occupational adjustment disorder.

Table 1 presents the scores of the performance indicators for the quality of diagnosing and
reporting and the total quality scores. The mean quality score on a scale of zero to ten was 6.0 (SD
1.4) for noise-induced occupational hearing loss and 7.9 (SD 1.5) for occupational adjustment
disorder. In 23 cases (18 %) of occupational adjustment disorder, the maximum score was achieved
by the physicians, while for noise-induced occupational hearing loss the maximum quality score was
not achieved in any of the cases.

For noise-induced occupational hearing loss, the criteria were met in less than 60% of the
cases for the performance indicators medical history, audiometric measurement, clinical diagnosis and
reporting. For occupational adjustment disorder, this was the case only for the performance indicator
other competing causes.
Table 1: Percentage and absolute number of cases in which the criteria for the indicators were met, and total quality score (0-10) for performances on diagnosing and reporting

<table>
<thead>
<tr>
<th>Performance indicator</th>
<th>Noise-induced occupational hearing Loss (%, absolute number)</th>
<th>Performance indicator</th>
<th>Occupational adjustment disorder (%; absolute number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Medical history</td>
<td>9% (2)</td>
<td>1. Medical history</td>
<td>75% (94)</td>
</tr>
<tr>
<td>2. Audiogram</td>
<td>57% (13)</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>3. Clinical diagnosis</td>
<td>39% (9)</td>
<td>2. Clinical diagnosis</td>
<td>78% (97)</td>
</tr>
<tr>
<td>4. Exposure</td>
<td>91% (21)</td>
<td>3. Exposure</td>
<td>99% (124)</td>
</tr>
<tr>
<td>5. Other competing causes</td>
<td>100% (23)</td>
<td>4. Other competing causes</td>
<td>34% (42)</td>
</tr>
<tr>
<td>6. Conclusion</td>
<td>83% (19)</td>
<td>5. Conclusion</td>
<td>98% (123)</td>
</tr>
<tr>
<td>7. Reporting</td>
<td>44% (10)</td>
<td>6. Reporting</td>
<td>89% (111)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total score noise-induced occupational hearing loss (mean; min-max)</th>
<th>Total quality score</th>
<th>Total score occupational adjustment disorder (mean; min-max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0 (2.9-8.6)</td>
<td>7.9 (5-10)</td>
<td></td>
</tr>
</tbody>
</table>

n/a: not applicable

The intra-doctor variability was measured for all occupational physicians who returned more than one questionnaire. Six occupational physicians (60%) returned more than one questionnaire of noise-induced occupational hearing loss. Four physicians returned two questionnaires, one returned three questionnaires and one returned eight questionnaires. Thirty occupational physicians (58%) returned more than one questionnaire of occupational adjustment disorder. Fifteen physicians returned two questionnaires, three returned three questionnaires, six returned four questionnaires, two returned five questionnaires, three returned six questionnaires and one returned twelve questionnaires. The mean intra-doctor variability for noise-induced occupational hearing loss was 28% (range: 0% to 61%), and 14% (range: 0% to 47%) for occupational adjustment disorder.
Discussion

To assess the quality of the performance of diagnosing and reporting by Dutch occupational physicians, seven performance indicators were developed for noise-induced occupational hearing loss and six for occupational adjustment disorder. In the sample of occupational physicians that responded to the questionnaire we found that the scores for the separate performance indicators varied from 9% for the assessment of medical history in noise-induced occupational hearing loss, to 100% for the assessment of other competing causes for noise-induced occupational hearing loss. The quality assessment of the performance of diagnosing and reporting by Dutch occupational physicians resulted in a mean total quality score of 6.0 for noise-induced occupational hearing loss and 7.9 for occupational adjustment disorder on a scale of zero to ten. Quality improvement of the performance of diagnosing and reporting should be attained on the performance of medical history, audiometric measurement, clinical diagnosis and reporting for noise-induced occupational hearing loss and on the performance of assessment of other competing causes for occupational adjustment disorder, because these aspects were correctly assessed in fewer than 60% of the cases. The intra-doctor variability of the performance was low for occupational adjustment disorders and moderate for noise-induced occupational hearing loss.

The strengths of our study include the availability of Dutch guidelines for the two occupational diseases. We used the guidelines to frame our performance indicators and criteria, as they provide clear criteria for the medical history, assessment of the clinical diagnosis, exposure and other competing causes, and the conclusion of work-relatedness. Every Dutch occupational physician receives information about the guidelines for reporting occupational diseases in the basic specialist training or in postgraduate training. The guidelines are available from the NCOD website, and occupational physicians can consult a helpdesk for support in diagnosing and reporting occupational diseases.

Another strength of our study includes the provision of specific indications of ways to improve the quality of diagnosing and reporting, whereas most studies present only the observation that the recognition and reporting of occupational diseases by physicians is inadequate and that better training is needed, without assessing the issues on which quality improvement should occur (4,9-11).
A limitation of this study is the likely existence of a selection bias. It is possible that the physicians who returned the questionnaire have a more positive attitude towards reporting and possess more knowledge of occupational diseases. This might have led to an overly favourable picture of the quality of diagnosing and reporting of occupational diseases. The measurement of performance based on self-reporting might also have contributed to a more favourable outcome. Nevertheless, the study does provide important clues for quality improvement.

Another limitation lies in the interpretation of the quality score. The results of this study show better quality scores for occupational adjustment disorder than for noise-induced occupational hearing loss. This could be caused by the different contents of the guidelines: the guideline for noise-induced occupational hearing loss is far more detailed and explicit than the guideline for occupational adjustment disorder. It is therefore more difficult to meet the requirements of the guideline for noise-induced occupational hearing loss.

A prerequisite for good quality diagnosing and reporting of occupational diseases is evidence-based guidelines (19,20). This calls for evidence-based case definitions of occupational diseases (20-22). Criteria for occupational diseases must be based on epidemiological studies and research focused on revealing aetiological mechanisms. In reality there is a considerable variety between countries in guidelines or criteria for occupational diseases. Many countries maintain a national list of occupational diseases for compensation purposes. The EU has a list with corresponding information notices on the listed occupational diseases (15). Member States are requested to implement the diseases of the EU list in their own legislation. Accordingly, many national lists are derived from the EU list, but are adapted to the specific legislation of the relevant country. The evidence base of the present and future national lists might be questioned and evaluated. If we want to be able to compare valid figures on occupational diseases between countries, the evidence base of the definitions and criteria must be evaluated and enhanced, and the definitions and criteria used in the different countries must be harmonized. These are prerequisites for starting a quality improvement process on a national or international level.

The low intra-doctor variability for occupational adjustment disorder and the moderate variability for noise-induced occupational hearing loss suggest that quality improvement will be
achieved not so much by focusing on a group of low performers, but mainly by focusing on the improvement of performance on specific aspects of the diagnosing and reporting procedure. This study indicates in which areas quality improvements of diagnosis and notification can be achieved. For noise-induced occupational hearing loss, these are medical history, audiometric measurement, clinical diagnosis of the disease and reporting, while for occupational adjustment disorders the area for improvement is the assessment of other competing causes.

A proper knowledge of the guidelines is a prerequisite for good quality diagnosis and reporting. However, most occupational physicians do not have time to check the guidelines in their daily practice. This indicates the need to facilitate diagnosing and reporting by practical tools, for example user-friendly decision-making software that is preferably linked to the electronic patient file.

The findings of this study can be helpful to explore the need for quality improvement in the registration of occupational diseases. The Health and Occupation Reporting Network (THOR) registration schemes in the UK and an intensively guided notification project of the NCOD itself are examples of registration projects that have a selection of motivated reporters (23-25). In this way, improvement of the quality of diagnosing and reporting can increase the reliability of the figures produced. Besides better education and information, internet tools for electronic exchange of information on occupational diseases should be considered (26).
References


Appendix 1: Performance indicators and criteria for the quality of diagnosing and reporting of noise-induced occupational hearing loss and occupational adjustment disorder, based on the Dutch guidelines

<table>
<thead>
<tr>
<th>Performance indicators</th>
<th>Noise-induced occupational hearing loss</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Medical history</strong></td>
<td><strong>Criteria</strong></td>
</tr>
<tr>
<td><strong>Always ask for complaints of tinnitus or hearing loss</strong></td>
<td><strong>Always ask for congenital or early acquired hearing loss, otosclerosis, vertigo, operations and/or injuries of the ear in the case history.</strong></td>
</tr>
<tr>
<td><strong>2. Audiogram</strong></td>
<td><strong>Always make an audiogram under standard conditions (the temporary threshold shift (TTS) must be extincted i.e. no noise exposure in the preceding six hours).</strong></td>
</tr>
<tr>
<td><strong>3. Diagnosis</strong></td>
<td><strong>The diagnosis of noise induced hearing loss has to be correct:</strong></td>
</tr>
<tr>
<td><strong>- the hearing threshold at 4 kHz exceeds the HL-10 for the same sex and the same age group (following ISO 7029), and</strong></td>
<td><strong>- the difference between the hearing thresholds of the left and the right ear at 4 kHz is less than or equals 15 dB, and</strong></td>
</tr>
<tr>
<td><strong>- there are no signs of congenital or early acquired hearing loss, otosclerosis, vertigo, operations and/or injuries of the ear in the medical history, and</strong></td>
<td><strong>- the hearing loss at 1 kHz does not exceed the HL-10 for same sex and the same age group.</strong></td>
</tr>
<tr>
<td>If one ear meets the first criterion but not all criteria, expert judgement is required.</td>
<td></td>
</tr>
<tr>
<td><strong>4. Exposure</strong></td>
<td><strong>Always ask for the occupations of the patient in chronological order and if noise exposure of more than 80 dB has occurred and, if so, the duration of the exposure.</strong></td>
</tr>
<tr>
<td><strong>Always verify if noise measurements have been carried out on the workplace and ask for the results.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5. Other competing causes</strong></td>
<td><strong>Always ask for possible noise exposure of more than 80 dB outside the working environment.</strong></td>
</tr>
<tr>
<td><strong>6. Conclusion</strong></td>
<td><strong>The conclusion of occupational hearing loss has to be correct:</strong></td>
</tr>
<tr>
<td><strong>- the diagnosis with ICD-10 code H 83.3 has to be set and</strong></td>
<td><strong>- there has been an occupational exposure exceeding 80 dB(A) for more than six months, likely on the basis of the medical history or confirmed by workplace measurements.</strong></td>
</tr>
<tr>
<td><strong>7. Reporting</strong></td>
<td><strong>The notification meets the internal criteria of the Netherlands Center for Occupational Diseases</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Occupational adjustment disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Medical history</strong></td>
<td><strong>Criteria</strong></td>
</tr>
<tr>
<td><strong>Always ask for key symptoms of anxiety disorder (excessive fear) or depression (depressed mood and loss of interest in all areas of life throughout the day for more than two weeks)</strong></td>
<td><strong>Always ask for psychic or somatic tension complaints</strong></td>
</tr>
<tr>
<td><strong>Always ask for the onset of complaints and their duration</strong></td>
<td><strong>Always ask for traumatic experiences or the death of a beloved person in the preceding two months</strong></td>
</tr>
<tr>
<td><strong>Always ask for substantial restraints in social or occupational functioning (sickness absence or dysfunctioning)</strong></td>
<td></td>
</tr>
</tbody>
</table>
| 2. Diagnosis | The diagnosis of adjustment disorder has to be correct:  
|              | - there are one or more psychic or somatic tension complaints, and  
|              | - there are substantial restraints in social or occupational functioning, and  
|              | - depression, anxiety disorder, PTSD or mourning has been excluded. |
| 3. Exposure  | **Always** ask for stressors in the dimensions: pressure of work, possibilities for self-organization of work (?), social relations  
|              | **Always** ask for onset of stressor and duration  
|              | **Always** ask if other employees have the same complaints  
|              | **Always** ask for the judgement of the patient concerning the work-relatedness of the complaints |
| 4. Other competing causes | **Always** ask for non-occupational life-events and stressors |
| 5. Conclusion | The conclusion of occupational adjustment disorder has to be correct:  
|              | - the diagnosis with ICD code F 43.2 has to be set, and  
|              | - there are one or more stressors in the working environment, and  
|              | - the relative contribution of occupational stressors is greater than the relative contribution of non-occupational stressors. |
| 6. Reporting | The notification meets the internal criteria of the Netherlands Center for Occupational Diseases |
### Appendix 2: Questionnaires for the assessment of diagnosing and reporting performance

<table>
<thead>
<tr>
<th>General questions</th>
<th>Occupational physician (code):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ICD code diagnosis reported case:</td>
</tr>
<tr>
<td></td>
<td>Year of birth reported case:</td>
</tr>
<tr>
<td></td>
<td>Sex reported case:</td>
</tr>
<tr>
<td></td>
<td>Date of notification:</td>
</tr>
</tbody>
</table>

| Noise-induced occupational hearing loss | 1. What are the most important complaints (max. 5) in the medical history concerning the diagnosis of occupational hearing loss? Mention only the complaints you actually asked about.  
2. On the basis of the absence of which complaints or personal risk factors (max. 5) do you exclude other hearing disorders? Mention only the complaints you actually asked about, or the complaints that were already registered in the patient’s file.  
3. What is the date of the last audiogram? When the audiogram was made, how many hours had elapsed since the patient had stopped working?  
4. Data from the last audiogram: HL-10 by 4 KHz and 1 KHz for both left ear and right ear.  
5. Occupations in chronological order with damaging exposure to noise and duration of exposition.  
6. Are noise measurements available? If so, what is/was the noise level (in dB(A)) for how many hours per day?  
7. Has the patient been exposed to non-occupational damaging noise? If so, which exposures? |

| Occupational adjustment disorder | 1. What are the most important complaints (max. 5) in the medical history concerning the diagnosis of occupational adjustment disorder? Mention only the complaints you actually asked about.  
2. How long have these complaints existed (in weeks)?  
3. On the basis of the absence of which complaints (max. 5) do you exclude other psychic disorders? Mention only the complaints you actually asked about.  
4. Did traumatic events or the death of a beloved person occur in recent months? If so, which event/person?  
5. What is your opinion about the social and occupational functioning of the patient: not limited or substantially limited?  
6. What were the most important stressors in the work environment before the onset of the disorder and when was the onset of the stressors?  
7. Were the following stressors present in the work environment? High work pressure, too much or too little work, emotionally demanding work, too much or too little autonomy, task uncertainty, do not like the work, demanding physical factors, conflicts or mobbing, lack of appreciation, lack of support, lack of information, insufficient reward, future uncertainty, merger or reorganization.  
8. Do other employees have work-related complaints?  
9. What is the opinion of the employee him- or herself about the work-relatedness of the complaints?  
10. Has the patient been exposed to non-occupational stressors or life-events? If so, what exposures, what stressors or life-events, when was the onset and what was the duration? |