

## **An Evaluation of Personal Health Plans in Occupational Health Check-ups**

**Kirsi Lappalainen<sup>1</sup>, Timo Leino<sup>2</sup>, Maria Rautio<sup>3</sup> and Sari Nissinen<sup>4</sup>**

### **Abstract**

The legislation governing occupational health care requires that a personal health plan be drawn up in co-operation with the client to support their work ability. In our study, we aimed to determine the structure of the electronic personal health plans developed in health check-ups and the content of patient record entries concerning health check-ups and follow-up appointments. We also aimed to determine the experiences of the clients who attended these check-ups. In the comparison setting, health check-ups were divided into intervention and control groups. The intervention was in the form of motivational counselling training received by the occupational health nurses, which emphasized the work ability aspect.

With the written consent of the clients, we were able to analyse the personal health plans of 410 clients from the intervention group and 99 patients from the control group. The study also used data from occupational health services' patient record entries from 2016–2019. The final supplementary data consisted of 74 people's patient record entries. The questionnaire was completed by 683 clients who attended health check-ups.

The personal health plan data were examined using qualitative content analysis and the questionnaire data were calculated as frequency distributions. We analysed the health records using tabulation. Further care data were collected from the supplemented material.

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<sup>1</sup> Senior Specialist, PhD. Finnish Institute of Occupational Health

<sup>2</sup> Chief Physician, Adjunct Professor, D.Med.Sci. Finnish Institute of Occupational Health

<sup>3</sup> PhD, ME

<sup>4</sup> Head of Development, PhD. Finnish Institute of Occupational Health

In addition, we examined each client's number of appointments on an individual level after the health check-up and any follow-up plans that were entered into the patient record. The examination period was three years (2016–2018).

The occupational health services' personal health plans and entries in the patient records varied. Examination of the health plans showed that entries were rarely made on monitoring and evaluation. In contrast, needs and objectives were identified and documented more often. The health check-ups and health plans made by the occupational health nurses appear to remain too detached as measures to support the patient's work ability and should be better linked. Although the drawn-up health plans did not appear to support the individual's health and work ability on the record entry level, the clients in need of support were nevertheless being monitored by occupational health services.

The study is useful for the development of occupational health nurses's work. It highlighted the need for better documentation of work ability and supporting actions in the personal health plans. The study also provided additional information for developers of occupational health service information systems and digital services.

**Keywords:** Occupational health care, occupational health nurse, health check.

## **1. Introduction**

Health care legislation requires patient records to include necessary and sufficient information on the client's health and the planning, implementation and follow-up of their care [1, 2]. This information is documented in a health and care plan drawn up in co-operation between the client and the professional, one aim of which is to commit the patient to their own care. The benefits are the continuity of care and improved flow of information [3].

The health and care plan is a patient-specific document that must be maintained. Its content in Finland is defined by a nationally uniform structure. The plan includes the headings Need for care, Structure of Care, Delivery and Means of Care, as well as Support, Monitoring, and Evaluation. It is stored in the National Patient Data Repository. This repository is a joint information system for Finnish health care operators, which enables patient data to be accessed with the consent of the patient by all health care professionals involved in their care. A uniform health and care plan in the electronic health record, facilitates the exchange of information between those involved in the patient's care, as it is available regardless of which electronic health record the professional uses [3, 4, 5]. The professionals' established use of health and care plans improves the quality of care and reduces the time needed by professionals to document the patient data [6, 7]. Although the legislation guides the content of the plan by making it uniform, there are still major differences in the way the plan is drawn up between professionals [8]. The views of the client and the professional on the content of the plan may also differ [9].

In addition to the general legislation governing health care, occupational health services are also governed by legislation that requires the drawing up of a personal health plan in co-operation with the client during health check-ups, to support health and work ability [10, 11, 12]. The SMART principle can be used as a tool for setting targets in the plan, according to which targets must be Specific, Measurable, Achievable, Realistic/Relevant to the customer, and Timed [13]. A clear plan and support help clients achieve their goals [14, 15].

Many factors influence the personal health plan. The plan aims to provide long-term and target-based support for the client's health and work ability, but in practice, it may often remain poorly documented [12, 16]. However, the personal health plan is one of the most important pieces of information that occupational health professionals believe should be exchanged between patients and other health professionals [16].

This study uses the concept of motivational counselling to describe the interaction between occupational health nurses and clients. One part of this is a motivational interview, which several studies have shown to be influential in, for example, lifestyle counselling [17, 18, 19]. The most important aspect of motivational counselling is finding the client's own motivation in terms of work ability, health and work. Motivational counselling also involves observing and recognizing the customer's willingness to change. The role of the occupational health nurse is to identify the client's needs for change and to reinforce "change talk" through reflective listening, open-ended questions, supportive feedback, and summaries [20]. An expert role should be avoided as this usually makes the client passive [21]. Weiste et al. (2018) have investigated interaction practices in health check-ups performed by occupational health nurses, and according to them, after training in motivational counselling skills, the nurses took better note of the problem areas that the clients themselves identified. In a way, developing a health plan started a new phase in the health check-up, and was not a natural part of the client meeting [22]. The Finnish Institute of Occupational Health (FIOH) carried out a study with the support of the Finnish Work Environment Fund in 2016-2019 in the Helsinki, Oulu and Tampere regions. All the occupational nurses and patients who participated in the study gave their written consent and the study was approved by the Ethics Committee of the Helsinki University Hospital.

The main goal of the study was to investigate the impact of motivational counselling and a written personal health plan on the work ability and work ability literacy of those who attended occupational health check-ups. In this sub-study, we wanted to determine the structure of the electronic personal health plans drawn up during the health check-ups and the content of the patient records made during the check-up and follow-up appointments; what was documented in the plan, the issues for which counselling was given, and the follow-up measures suggested to support work ability and health during the follow-up. We also wanted to determine how the clients who attended these check-ups experienced them.

## **2. Materials and methods**

A total of 52 occupational health nurses participated in the study. The nurses first performed their health check-ups as usual. After this, they participated in an intervention of two half-day contact sessions and e-learning training which reinforced the occupational health nurses' motivational counselling skills and their ability to draw up a personal health plan to promote the patient's work ability. The clients who attended the health check-up before the intervention formed the control group (n=742) and those who had check-ups after the training intervention formed the intervention group (n=541). After the health check-up, the clients responded to a questionnaire that elicited their experiences of the health check-up they had just undergone. With the written consent of the clients, we were able to analyse the personal health plans of 410 clients from the intervention group and 99 patients from the control group, which the occupational nurse had entered in the existing personal health plan information system. At the start of the study, the occupational health nurses had just taken an electronic personal health plan system into use.

The study also used data from occupational health services' patient record entries for 2016–2019. In November 2018, we sent 200 randomly selected clients who had attended a health check-up a request for consent to access their health check-up record entries as well as those of possible follow-up appointments. The final data consisted of 74 people's patient record entries.

The personal health plan data were examined using qualitative content analysis. The data were first classed under the titles of the personal health plan: Need, Aims, Implementation and Methods, and Follow-up and Assessment, after which they were further classified into the following categories: Health, Work Ability and Lifestyle; and Work and Management. After this, the data were grouped according to similarity of topics into sub-categories using descriptive names and eventually, from the perspective of the study, relevant main categories. In the results, we show the main categories and the number of mentions they received. We calculated frequency distributions in the study's questionnaire data.

The follow-up of the clients who had attended the health check-ups was determined using further referrals and follow-up procedures entered in the patient record by classifying their quality and counting their numbers. In addition to the follow-up measures planned by occupational health nurses, the analysis also considered those planned by occupational health physicians. Table 1 shows the data and methods of the study.

**Table 1: Materials and methods.**

<b>Data</b>	<b>Method</b>
Personal health plans Intervention group (n=410) Control group (n=99)	Content analysis Frequency distributions
Patient record entries (supplemented data) Intervention group (n=41) Control group (n=33)	Frequency distributions
Survey data of clients who attended health check-up (n=1283)	Frequency distributions

### **3. Main Results**

Examination of the personal health plans shows that the focus, in terms of needs, objectives and implementation, was on public health issues. In general, factors related to health, functional capacity and lifestyle were documented more often in the plans than those related to work and management. In the plans, follow-up and assessment clearly had the least entries in both the intervention and control groups. In terms of numbers, objectives had the most entries. In relation to the size of the groups, the intervention group had more personal health plan entries than the control group. The intervention group also had more work and management-related entries. Factors related to monitoring and evaluation were hardly documented at all in terms of work and management (Table 2).

**Table 2: Content of personal health plans in the health check-up intervention and control groups.**

Content	Needs		Goals		Implementation and methods		Follow up and assesment	
	Intervention group N=410 %(n)	Control group N=99 %(n)						
<b>Health, work ability and lifestyle</b>								
Public health risks	46(190)	47(47)	60(244)	71(70)	55(223)	59(58)	24(97)	8(8)
Exercise	22(90)	25(25)	30(121)	30(30)	60(245)	38(38)	3(11)	-
Treatment of illnesses	12(50)	12(12)	10(40)	16(16)	-	3(3)	-	-
Mental well-being (sleep, alertness, mood)	7(27)	6(6)	15(62)	15(15)	27(111)	12(12)	-	-
Smoking and substance use	5(22)	10(10)	7(29)	11(11)	9(36)	16(16)	-	-
Sight and hearing	3(14)	1(1)	6(25)	5(5)	-	1(1)	-	-
Maintenance of well-being	1(5)	1(1)	22(90)	22(22)	1(2)	-	3(11)	-
Laboratory tests	-	-	2(9)	-	12(50)	4(4)	-	-
Immunizations	-	-	1(5)	1(1)	-	2(2)	1(6)	-
Benefits (part-time pension, rehabilitation)	-	-	1(1)	-	1(1)	2(2)	-	-
Further referral to other professional	-	-	-	-	-	-	52(214)	25(25)
<b>Work and management</b>								
Well-being at work	36(146)	21(21)	-	-	1(6)	-	-	-
Work ergonomics and use of protective equipment	-	-	5(20)	6(6)	8(34)	12(12)	-	-
Work adaptations	-	-	3(13)	-	13(55)	6(6)	-	-
Supervisory work	-	-	-	1(1)	2(8)	4(4)	-	-
Competence	-	-	-	1(1)	3(12)	-	-	-

Numerically, most health checks were conducted based on age, for those aged 50–60. Those belonging to the intervention group had more health check-ups due to the high health risks of their work. The intervention group had a total of 239 sick leave days and the control group 406 days (Table 3).

**Table 3: Occupational health nurse’s health check-up types in the supplemented data.**

<b>Type of health check-up</b>	<b>Intervention group (n=41)</b>	<b>Control group (n=33)</b>
Check-up due to high health risk of work	12	6
Check-up when starting work, returning to work and at termination of employment	6	4
Check-up due to age	16	16
Check-up for other reason	3	1
Missing data	4	6

Mostly, the occupational nurses referred clients to an occupational health physician. There were clearly fewer referrals to other specialists. In addition to occupational psychologists and occupational physiotherapists, referrals were made to diabetes nurses and opticians (Table 4).

**Table 4: Further referral to other specialists after check-up by occupational health nurse .**

<b>Referrals to other specialists</b>	<b>Intervention group (n=41)</b>	<b>Control group (n=33)</b>
Occupational health physician	24	30
Occupational psychologist	3	1
Occupational physiotherapist	4	3

Most of the follow-up measures planned for the intervention group focused on treatment enhancement (24), followed by advice on a known health problem (21), and referral to a physician (20) (refer Table 5). Most of the follow-up measures planned for the control group focused on referral to a physician (21), followed by advice on a known health problem (23), and treatment enhancement (22).

Fewer follow-up measures related to work ability were documented. Occupational health counselling and guidance was documented as a follow-up measure for nine subjects in the intervention group, compared with three in the control group. As a follow-up measure, occupational health negotiations (joint negotiations with the employee and supervisor and the OH expert on the work adjustments) had been documented for almost as many in the intervention group (4) as in the control group (5).

**Table 5: Follow-up measures and referral after health check-up.**

<b>Follow-up measures and referral</b>	<b>Intervention group (n=41)</b>	<b>Control group (n=33)</b>
Vocational rehabilitation recommendation	1	-
Further diagnostic examinations	1	3
Treatment enhancement (Medicines, care instructions)	34	22
Certificate of work ability	1	3
Referral to specialist health care	4	3
Medical rehabilitation recommendation	1	1
Referral to professional other than physician	9	17
Referral to basic health care	1	-
Referral to work ability assessment	-	2
New appointment with occupational health nurse	1	3
Necessary work ability support measures already under way	7	6
Advice on a known health problem (e.g. lifestyle counselling)	31	23
Investigations of a suspected occupational disease	-	-
Occupational health negotiation	4	5
Occupational health-related counselling and guidance	9	3
Referral to physician	25	31
Sick leave periods	20	14
Persons on sick leave	13	4
Disability or partial disability pension application	2	4
Other measures	3	1

A total of 1283 clients attended health check-ups, of which 683 responded to the questionnaire. The response rate was 53%. Almost all the questionnaire respondents agreed that the health check-up addressed issues relevant to their health and work ability (99%, n=678). Almost all the respondents also felt that after the check-up they had a clear idea of the goals set for promoting their health and work ability (96%, n=676) and how and when the agreed issues would be followed up (99%, n=676). In addition, slightly fewer (87%, n=670) reported that after the check-up they had a clear idea of the personal measures to improve own health and work ability.

#### **4. Conclusion**

According to Good Occupational Health Practice (2014), developing personal health plans has been part of the work of occupational health professionals since 1997. In addition, a Government Decree (2014) has required that they be drawn up since 2013 [24, 25]. There was a great deal of variation in how the occupational health nurses draw up the health plans. In most cases, the entries did not cover the whole structure of the health plan. Health and work ability needs, and the follow-up and assessment of the plan's implementation were often not entered. However, follow-up had been discussed with the client, as almost everyone had some idea of how and when the issues agreed upon during the health check-up would be followed-up. In contrast, goals, planned implementation and methods were most often documented in the health plan.

In this study, the occupational health nurses were trained to draw up personal health plans that promote work ability, but the impact of the short training on the content of the health plans, especially in work- and management-related matters, remained limited. Needs were identified but no entries were found of their follow-up and assessment. A similar result was obtained in a previous study which found that work- and workplace-related issues were not documented, even though they are discussed in the health check and were even implemented [22]. Based on the patient history data, the health check-ups found people with health problems and sick leaves. The entries were mostly related to lifestyle and examinations, and care measures and their follow-up, rather than to work or work ability support. Although a broad concept of work ability has long been emphasized in Finland, the medical concept of work ability seems to continue to prevail in practice [26].

The occupational health nurses were using an electronic personal health plan system. Significantly fewer electronic personal health plans were made in the control group, apparently because the electronic health plan system had just been introduced. The low use of the new system may have been due to its poor design and complexity, or because it was too time consuming to use [27]. The willingness of professionals to use these systems is thus also affected by their experience of the system's usefulness and ease of use [28] and whether the new method or technology helps in patient work [29].

It is important for the monitoring of work ability that all health and work ability data is carried by the person themselves. The structure of the OHS personal health plan is in line with the national health and care plan on the level of its titles and therefore fits in well as part of it. Thus, it is also possible to gain a work ability perspective to support the planning and coordination of overall patient care in health care everywhere. However, the platform for documenting health plans should be developed so that they also support the documenting of work ability data in occupational health services' information systems.

The study produced new information on health check-ups and personal health plans. In summary, occupational health nurses' documentation of health check-ups and personal health plans has little work and work ability-related content, although these issues are discussed at appointments. The study is useful for the development of occupational health nurses' work. It highlighted the need for better documentation of work ability and supporting actions in the personal health plans and strengthening of occupational health nurse's expertise. The study also provided additional information for developers of occupational health services' information systems and digital services. In the future, it will be important to investigate factors related to electronic personal health plans that influence the willingness of occupational health service professionals to use them, as well as persons' commitment to perform and maintain changes to improve health and work ability.

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