

# Service Personalization in IT-Supported Finnish Healthcare

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**Abstract.** This paper reports a case study on the spontaneous personalization discussions emerged from interviews with healthcare professionals when asked about their work practices and the role of information technology (IT) during consultations. We thematically analyzed the personalization elements using an existing personalization framework to provide insights on the service personalization. Our results contribute to the better design of IT solutions that can support health services' personalization.

**Keywords.** Personalization, Healthcare, Service Design, Case Study

## 1. Introduction

As the Healthcare User's (HU) characteristics, medical condition, and personal preferences vary, they should be treated individually making Health Service personalization (HSP) important. HS often take place between the healthcare professional (HP) and HU, supported by IT [7]. IT can act as facilitator for HSP, providing data about HU's particular characteristics [2] to be used by HP and HS during HS delivery [5,7]. In service design, the users and their context are at its core [1]. This paper provides insights to the personalization field from a service design perspective [4] by presenting personalization elements, emerged by the analysis of an interview study [6] with a personalization framework [5].

## 2. Methods

We conducted 60 min semi-structured interviews with 6 HP working for more than 10 years in different levels in the Finnish primary care on behavioral change. It was a convenience sample of 1 nurse, 2 medical doctors, and 3 nutritionists. They described their practices, and the IT support in HS. The interview guide had 3 areas: HP background, work practices, and IT use. The guide did not include personalization-related questions. Authors independently thematically analyzed and later discussed the data related to personalization. To interpret our results, we used a personalization framework [5] related to the automation level IT provides for service personalization.

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### 3. Results

**Coercive personalization** refers to predetermined regulations influencing the HS personalization e.g. different IT-solutions offered in Finnish primary healthcare. Within the interviews, HP referred to the coercive personalization elements implicitly as the support systems and restrictions that were placed on their daily work.

**Data display personalization** refers to IT enabled personalized data for the stakeholders to interpret and make personalization related decisions. The HP used digital and none-digital types of data display support to illustrate cases of optimal behavior (e.g. a good meal portion image) which they discuss with the HU in comparison to their data. Data display support used also for progress monitoring during the behavioral change. The HU's (digital or paper-based) diary inputs lead to constructive discussions during consultation, helping HP to better understand and support their HU.

**Collaboration-based personalization** refers to IT supported personalization between stakeholders, HP and HU. In this case, it was mainly generated verbally during the consultation but counted with the support by technologies. HP and HU discussed to provide information and create understanding on HU's current and past behavior, context, life situation, motivation, and social circle.

### 4. Discussion & Conclusion

The need for personalized solutions is frequently presented in the literature [3]. We applied the service design approach in healthcare setting, which is uncommon [4] as quantitative approaches are more valued than qualitative [8]. The use of a personalization framework [5] resulted in a better understanding of the HP views, which may help improve IT solutions design. **Limitations.** The study conducted in Finland, the results may differ in a country with different culture and socioeconomic environment. The sample was small, but due to HP's different specialties and longtime experience, was considered representative of a primary healthcare setting.

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