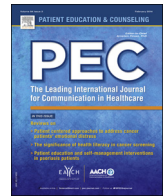




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# Low health literacy and healthcare utilization among immigrants and non-immigrants in Switzerland

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### ABSTRACT

**Objective:** This study aimed at investigating the association between functional health literacy and knowledge on when to seek medical help for potentially harmless (overutilization) or serious (underutilization) situations among immigrants and non-immigrants in Switzerland.

**Methods:** Data was collected among three immigrant groups and the native population ( $N = 1146$ ) in the German- and Italian-speaking part of Switzerland. Health literacy was assessed with the Short Test of Functional Health Literacy (S-TOFHLA) and three Brief Health Literacy Screeners. Over- and underutilization of healthcare services was assessed with items asking participants about when to seek medical help for minor, respectively major, physical symptoms.

**Results:** Immigrants were more likely to seek medical help when unwarranted (overutilization). Health literacy, when assessed with the S-TOFHLA, was significantly associated with over- and underutilization. Yet, once controlled for covariates, the association between health literacy and overutilization was negative. Immigration background and micro-cultural differences emerged as important predictors of utilization.

**Conclusions:** Results suggest that functional health literacy is directly related to healthcare utilization. The effects might be amplified by (micro-)cultural differences.

**Practice implications:** Healthcare providers should be aware of differences in health literacy and utilization patterns among different population groups. Communication between patients and providers should be literacy and culturally sensitive.

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## 1. Introduction

Studies from different countries have shown that immigrants tend to have different healthcare utilization patterns than the native population [1–6]. In Switzerland, for example, it has been found that people with an immigration background are less likely to use preventive healthcare services, such as cancer screening programs [7–9]. Further, immigrants have been found to be more often hospitalized [10–12] and to see more frequently a physician than Swiss natives [11]. Studies on healthcare utilization in immigrants have tried to tease out the influence of other predictors of healthcare utilization that go beyond immigration background, including education and health insurance status [1,4,13–15]. However, research is by far not exhaustive [5] and one possible

predictor that has only received little attention so far in this context has been health literacy.

A number of studies have linked limited health literacy to increased usage of healthcare services [16–20]. Among others, limited health literacy has been associated with increased hospitalizations [21] and emergency room visits [22,23], as well as higher healthcare costs [18,24,25]. On the other hand, limited health literacy has also been linked to decreased usage of preventive healthcare services, such as uptake of cancer screening or flu shots [26–29]. Even though results need to be carefully evaluated, as differences occur between studies and different population groups (e.g. [29]), they still offer sufficient grounds to support the conceptual idea of health literacy being an important predictor of over- and underutilization of healthcare services.

Studies, mainly from the US, have found that ethnic minorities are disproportionately affected by lower levels of health literacy [30–33]. Yet, only few studies have tried to tease out the influence of immigration background on health literacy [34]. Studies that have attempted to do so have mainly focused on language proficiency, and found that in particular those participants who

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were not proficient in the language of the host country and had lower levels of health literacy were most likely to deal with negative health (-related) consequences [35–37]. In Europe research on health literacy has only recently gained currency and studies on the distribution of health literacy among different population groups are still relatively scarce. Most findings have been based on a self-reported measure of health literacy commissioned by the European Union [38]. Among others, it was found that immigrants in Germany had lower levels of health literacy [39]. In Switzerland differences between different immigrant groups and the native population were less clear cut. Whereas Turkish immigrants had lower levels of health literacy as compared to the Swiss population, Portuguese immigrants did not significantly differ [40]. Further, a study from Austria found that immigrants had even higher levels of health literacy as compared to the native Austrian population [41].

### 1.1. Theoretical background

Ackermann Rau and colleagues [34] conducted a study among immigrants in Switzerland assessing knowledge on when to seek medical help for potentially harmless (overutilization) or serious situations (underutilization). Based on Jordan and colleagues' health literacy framework [42] they argued that knowing when to seek medical help is a key component to sufficiently manage one's health and thus constitutes functional health literacy [34]. Among others, they found that in particular participants from Kosovo and Turkey, compared to Portuguese participants, were more likely to seek medical help for minor symptoms (overutilization). Further, Kosovars were less knowledgeable about when to seek medical help for major symptoms (underutilization). [34] Even though we recognize that knowledge on when to seek medical help is an important dimension of health literacy, this study argues that functional health literacy, operationalized as reading comprehension and numeracy skills in the medical setting, is an antecedent of knowledge, as described in different health literacy frameworks [43–45]. Further, we suggest that the construct of knowledge on when to seek medical help partly reflects individual judgment skills [46]. As laid out by Schulz and Nakamoto [46] judgment skills are based on the capability of an individual to abstract and generalize prior knowledge and experience. In case of an acute health situation for example, individuals will base their evaluation and decisions on their own lay theories that explain potential causes and mechanisms of the experienced symptoms. Based on prior knowledge and experience, as well as individual's level of functional health literacy, individuals will interpret, more precisely, judge the situation and consequently take action [47]. In case of the study at hand, low functional health literacy is likely to influence individual's judgments, which eventually might lead to inappropriate decision-making on when to seek medical help [46,48]. In other words, people with lower levels of functional health literacy are expected to be less likely to accurately judge when a medical situation requires medical attention either leading to over- or underutilization of healthcare services [49].

### 1.2. Objectives

The first objective of the study was to provide a more nuanced investigation of how functional health literacy might be related to utilization of healthcare services by investigating knowledge on when to seek medical care. It was hypothesized that limited functional health literacy would be negatively associated with knowledge on when to seek help for a medical condition that would either translate into over- or underutilization of healthcare services. The second objective of the study was to identify in how far immigration background, operationalized as language

background, would influence this relationship. Based on results of a previous study [50], it was hypothesized that health literacy, when assessed with a self-reported measure, would interact with immigration background.

## 2. Methods

Data for this study came from a larger cross-sectional survey study that was conducted among three different immigrant groups and the native population in Switzerland. The study was commissioned by the Swiss National Accident Insurance Fund (SUVA) and was approved by the Ethics Committee of the University of Lugano, Switzerland. For more detailed information on data collection and health literacy measures, please see [50].

### 2.1. Sample

Data was collected in the German- and Italian-speaking part of Switzerland. Included in the study were first generation immigrants from the three largest immigrant groups to Switzerland that do not speak one of the official Swiss languages as their mother tongue: (1) Albanian-, (2) Portuguese- and (3) Serbian-speakers. Data was also collected among the Swiss non-immigrant population, who either lived in the German- or Italian-speaking part. For more information, please see [50].

### 2.2. Measures

#### 2.2.1. Independent variable: health literacy

Health literacy was assessed with two different measures. The first measure was the Short Test of Functional Health Literacy in Adults (S-TOFHLA) [51], which assessed health literacy in participants' native languages. The second measure of health literacy consisted of three Brief Health Literacy Screeners (BHLS) [52,53]. The BHLS are self-reported measures of health literacy and ask participants about their confidence in understanding and filling out medical information in the language of the host country/region (German or Italian). For more information on phrasing and scoring, please see [50].

#### 2.2.2. Dependent variable: over- and underutilization

Based on Ackermann Rau and colleagues' study [34] possible over- and underutilization of healthcare services was assessed with six items asking participants about when to seek medical help for either minor or major symptoms. Answer options included "yes", "no" or "don't know". The items were grouped into two different categories: (i) three items representing overutilization and (ii) three items underutilization. Items included for example: "Do you think someone your age should seek medical help if he/she experiences one of the following problems?" – "Shortage of breath even after light exercise", or "A sore throat or a head cold with fever up to 38°C for 1 or 2 days". Each correct answer was scored with zero points and each incorrect answer (including "don't know") with one point in order to build a summative score with higher scores indicating either a tendency to over- or underuse healthcare services.

#### 2.2.3. Covariates

Analyses were controlled for socio-demographic variables, including gender, age and education, as well as presence of a chronic condition and general health status. In addition, analyses were controlled for self-efficacy and social support. Self-efficacy is an important predictor for health behaviors, and health literacy and self-efficacy have frequently been associated with one another [54–56]. Analyses were also controlled for social support, as it was

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