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## SUPPLEMENT

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#### ABSTRACT SUPPLEMENT

**Guest editors: Reinhard Busse, Verena Vogt, Dineke Zeegers Paget**

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### Introduction:

Health care organizations (HCO) are increasingly required to provide health literate structures and processes to strengthen organizational health literacy (OHL). So far, little is known about the extent of OHL in HCO in Germany. Aims are therefore 1) to examine the level of OHL in health care organizations, and 2) to investigate the impact of organizations level of health prevention and workplace health promotion on the level of OHL.

### Methods:

Analyses are based on a nationwide cross-sectional study (online survey) among management staff (N = 564) in HCO (hospitals, nursing homes, facilities for disabled people). OHL was measured by the German version of the 'Health literate health care organization 10 item questionnaire' (HLHO-10). Health prevention and workplace health promotion were operationalized by the "Worksite Health Promotion Capacity Instrument" (WHPCI). Uni- and bivariate analyses were carried out, on an item-basis and as an index (median-split).

### Results:

Regarding OHL, 55.1 % of the health care organizations reported below-average levels of OHL. On an item-basis, the highest below-average levels were given for the standard 'communication' (59.1 %) and the 'provision of information to patients/residents via various media' (57.4 %). Regarding the level of health prevention (51.8 %) and the existence of workplace health promotion structures (55.7 %), more than half of HCO reported a below-average level. In addition, results showed that HCO that indicate a below-average level of prevention and few structures of workplace health promotion also revealed a below-average level of OHL.

### Conclusions:

There is need to strengthen OHL in German HCO.

### Key messages:

- HCO are required to strengthen HLO, particular in communication and participatory approaches.
- A higher level of prevention and workplace health promotion on HCO can contribute to the implementation of OHL initiatives.

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#### Assessing sun protection practices for children: knowledge and behaviours of parents

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### Background:

The development of melanoma in adulthood is strongly associated with sunburns during childhood. Parental knowledge and behaviours play a key role in sun protection behaviour from which children can acquire general and integrated learning patterns. With this being known, numerous positive preventive health behaviours can be initially shaped in the family, with children having parents as a model.

### Methods:

A cross-sectional approach (web-based questionnaire) was conducted to gather information regarding parents' knowledge and behaviours of children's sun protection, alongside the predictors that might influence the adoption of these behaviours, between April and May 2021. The survey was disseminated to 53 primary school teachers from 9 schools in Cluj-Napoca Romania, and the data set included 355 valid surveys (parents with at least one child aged between 0 to 12 years old) out of 476 total surveys. Descriptive statistics, Chi-square tests of association and logistic regressions were computed.

### Results:

The study showed differences in children's sun exposure patterns, their sunburn and parental sun protection behaviour. Overall, parents reported fair sun protection behaviours and children's sunburn frequency was overall moderate among all children in the previous summer season. However, an increase in children's age generates an increase in parents' sunscreen application for their children in both planned and incidental situations. There were statistically significant associations between parents' sex and their knowledge about the fatal consequences of skin cancer or their level of education and the damage produced by tanning bed usage or sunscreen efficiency measures.

### Conclusions:

These results are a starting point for various program interventions that can be done for parents in order to increase their knowledge on sun protection practices for their children.

### Key messages:

- Skin cancer is substantially preventable if unprotected exposure to ultraviolet radiation is reduced during the first years of a child's life.
- Parental knowledge and behaviors play a key role in sun protection behavior from whom children can acquire general and integrated learning patterns.

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#### Health Literacy, Covid-19 and risk perception: a cross-sectional survey in Prato in the 2nd wave

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During the Covid-19 pandemic, individual and collective public health measures were undertaken to control the spread of the virus. Their effectiveness relies on people's abilities to understand and adopt the correct behaviors. This study aims to evaluate the role of Health Literacy (HL) in influencing the adherence to Covid-19 preventive measures and risk perception of a sample of workers employed in various activities involving close contact with the population in the province of Prato (Tuscany, Italy) in the second pandemic wave (November-December 2020). A cross-sectional survey was conducted on a sample of public workers (e.g., teachers, educators, assistants/aides, other health personnel). Data on knowledge, attitudes and practices towards (KAP) Covid-19 preventive measures and risk perception were collected. HL was measured with the HLS-EU-Q6 tool. Spearman correlation analysis was used to assess the correlation between HL and KAP and Covid-19 risk perception. Multivariate linear regression analyses were performed to evaluate the role of HL in predicting KAP and Covid-19 risk perception, adjusted for sex, age, comorbidity, educational level, country of birth. A total of 402 people participated in this study; 47.8% had a problematic HL level. The HL level was correlated with KAP and practices towards Covid-19 prevention measures; no significant associations were found with Covid-19 risk perception. In multivariate models, HL significantly and positively predicted a higher level of knowledge of Covid-19 preventive measures (B = 0.413 for problematic HL; B = 0.542 for sufficient HL). Confirming a previous study conducted in Prato in the first pandemic wave, HL did not predict adherence to Covid-19 infection control measures, probably due to fear of the disease and attention towards prevention behaviors being still higher in the second pandemic wave.

**Key messages:**

- HL skills are linked to understanding of public health measures.
- HL skills should be improved to favor the adherence to correct behaviors.

**Abstract citation ID: ckac131.363****Living Lab: Design a digital health intervention for healthy diet of ethnic minority adolescents**

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Eating habits cultivated during adolescence continue through adulthood, and can widen the health gap in adulthood for vulnerable ethnic minority adolescents (EMA). Living Lab is a methodological approach through which stakeholders co-create innovations as citizen scientists in real-life settings. This study aimed to design a digital health intervention (DHI) for enhancing the healthy diet of EMA using the Living Lab approach. The DHI's content and strategies were derived through literature reviews and focus group interviews. The Living Lab was structured by using 5 principles: real-life setting, user engagement, multi-stakeholder participation, multi-method, and co-creation. It has four activity phases of discovering problems, exploring solutions, solving problems, and disseminating solutions putting more emphasis on the use of digital device and multiple stakeholders such as peers and teachers in co-ideation. DHI participants were grouped into equal proportions of EMA and Korean-ethnic peers. The DHI operates for 2 hours once a week for 4 weeks, with orientation and wrap-up sessions before and after the DHI. Each activity of the co-working process is designed by applying behavior change techniques such as prompts/cues, framing/reframing, and credible sources in a digital educational environment: creating content using Google Jamboard and Padlet, and working on the metaverse platform ZEP. The responses and feedback from the participants are received through an online reflection diary weekly. Usability and acceptability of digital technology are assessed by an online survey on completion of the DHI. The efficacy of DHI is assessed through the change in dietary behavior and food literacy. This study was designed to enable EMA recognize the harmful effects of an unhealthy diet and co-create solutions through dynamic activities in a digital environment. Further, it may serve to change the cultural sensitivity of native peers that influence the health choices of EMA.

**Key messages:**

- Digital-based intervention would be an effective way for vulnerable ethnic minority adolescents to engage in healthy diet.
- The Living Lab approach was used as an essential strategy to develop a digital health intervention to improve the healthy diet of ethnic minority adolescents.

**Abstract citation ID: ckac131.364****Appraising the quality of guidelines for caries management using AGREE II: a systematic review**

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**Background:**

Caries is one among the most prevalent dental disease and its prevention and treatment are crucial from both dental care and public health perspectives. Yet, caries' management greatly varies across contexts according to the availability of specific Clinical Practice Guidelines (CPGs). Here, we present the results of a systematic review aimed at the appraisal of the current available CPGs on caries prevention and treatment.

**Methods:**

A literature search was performed in PubMed, EMBASE, SCOPUS, and seven relevant guidelines databases up to March 2022, exploring CPGs published from 2012. The literature review was conducted in accordance with PRISMA guidelines. The Appraisal of Guidelines, Research and Evaluation (AGREE) II checklist was used to measure the methodological rigour and quality of the retrieved CPGs.

**Results:**

The systematic search resulted in a total of 1403 records, and 21 CPGs met the inclusion criteria. Overall, these considered different aspects of caries prevention and treatment. Regarding the appraisal through the AGREE II tool, the overall median score was 60.2% and 11 out of 21 CPGs were classified as "Recommended", while the others as "Recommended with modification". The domain analysis showed that the highest median scores were reached for Scope and Purpose (88.9%), Clarity of Presentation (86.9%), and Rigor of Development (67.8%), while the lowest were seen for Stakeholder Involvement (63.3%), Applicability (17.5%), and Editorial Independence (50%).

**Conclusions:**

This systematic review showed that the rigor of CPGs for caries prevention and treatment remained suboptimal according to AGREE II evaluation, and highlighted that more efforts are needed to improve their quality. The AGREE II checklist is a comprehensive and easy-to-use tool for the development of CPGs, and its use ensures that evidence-based approaches are incorporated into consistent recommendations for the translation of evidence into practice.

**Key messages:**

- The rigor of CPGs for caries prevention and treatment is suboptimal according to AGREE II evaluation, however, more efforts are needed to improve their quality.
- The AGREE II checklist is a comprehensive and easy-to-use tool for the development of CPGs.

**Abstract citation ID: ckac131.365****Exploring behavior change motivation in an outpatient sample with more than one health risk behavior**

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**Background:**

Evidence from western countries shows that the majority of adults have two or more health risk behaviors. The motivation to engage in a health behavior change (HBC) is the most proximal determinant of behavior change in the future. The aim of this study was to investigate the intention to increase physical activity and to quit smoking in an outpatient sample that show both health risk behaviors.

**Methods:**

We used baseline data (n = 109) of an intervention study (Germany, 2016-2019) on physical activity and smoking cessation. Eligibility criteria were: aged 40 to 65 years, systolic blood pressure  $\geq 130$  mmHg, no history of cardiovascular event or vascular intervention. We collected information on HBC motivation, sex, age, and self-rated health (SRH) and