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Health literacy of healthcare managers

Differences by type of organisation and correlation with ability to work and burnout risk

Personal health literacy (HL) refers to the ability to find, understand, evaluate and apply health information (Rathmann/László 2024a). Organisational health literacy (OHL) describes the extent to which healthcare facilities take measures to strengthen the health literacy of their patients and employees in order to support them in making health decisions (Dietscher/Pelikan 2023; Rathmann/László 2024a). Study results show that managers and healthcare professionals should be considered a vulnerable group with regard to mental and physical health problems (Raspe et al. 2020; Zeike et al. 2023). Physical and mental stress in the healthcare and nursing professions, high demands in everyday and professional life should be managed by strengthening the OGK (Rathmann/László 2024a). Due to demographic change and the increase in chronically ill, multimorbid patients, the German healthcare system and nursing care are facing major challenges. In the long term, patient care will also be affected by the high workload and staff shortages among managers and specialists. In order to attract and retain skilled staff in the long term and thereby increase the quality of care, healthcare facilities can invest in further training (in line with the OGK), support patients' personal responsibility and strengthen their self-management skills, in addition to improving working conditions.

>> This is where the OGK concept for the development of health-competent facilities comes in, which aims to align structures and processes with personal health literacy and to focus on the health literacy of managers and healthcare professionals as well as patients and their relatives (Pelikan et al. 2023; Rathmann/László 2024a). The international working group HPH & HLO (2019) has developed the SAT-OHL (Self-Assessment Tool for Organisational Health Literacy), a self-assessment tool for health literate hospitals. Based on this tool, the OGK is strengthened along eight standards (Fig. 1)..

Health literate institutions implement measures to strengthen health literacy across all structures of the institution, involve as many stakeholders as possible in the development of health-related materials and services, train their staff in health literacy, provide easy orientation and access to services and materials, strengthen health literate communication within the institution and promote the health literacy of patients, staff and the local population (Rathmann/László 2024e).

While many studies relate to the personal HSC of patients or the general population, the body of research on health professionals (Janson/Rathmann 2021; Schaeffer et al. 2023; Simon et al. 2022) and HSC in the healthcare sector has only grown in recent years. Studies show that the personal health literacy of healthcare professionals is closely linked to a greater willingness to prevent illness, performance, motivation and less absenteeism due to incapacity to work (Gernert et al. 2022; Larsen et al. 2019). In addition, an online survey of nursing staff in outpatient care in Germany showed that nursing staff with a low personal GK are more likely to have high physical demands at work and an increased risk of frequent thoughts of changing careers compared to nursing staff with a sufficient personal GK (Janson/Rathmann 2021, 2023; Rathmann/László 2024a).

The initial results from Germany, Austria and Switzerland make it clear that the healthcare professionals surveyed rate their skills in promoting their patients' or clients' CC highly (Schaeffer et al. 2023). There is a need for improvement in the handling of digital health information and in the transfer of information and knowledge to patients (Schaeffer et al. 2023).

In the area of OGK, there are now numerous international and national study results that report the extent of OGK (e.g. measured using the HLHO-10 instrument) for healthcare facilities (Bonaccorsi et al. 2020; Rathmann et al. 2020). The number of concepts, definitions and instruments for measuring OGK in healthcare facilities has grown steadily in recent years, particularly in German-speaking countries (Rathmann/László 2024b, 2024c, 2024d, 2024e). There are also numerous toolboxes for strengthening (organisational) CC in German-speaking countries (e.g. for the healthcare sector: Rathmann et al. 2021a; 2021b). A survey for integration assistance in Germany indicates that healthcare facilities reported a below-average level of OGK, with the lowest values on the HLHO-10 scale being measured in the area of participatory development of health information (Rathmann et al. 2020). Another study from Italy with hospital managersidentified major needs in the areas of OGK 'integration of GK into quality management measures', 'training of staffon the topic of GK' and 'communication' (Bonaccorsi et al. 2020). By implementing measures, healthcare facilities contribute to the development of CC and strengthen patient self-determination, which leads to lower utilisation of emergency departments, care episodes and a less frequent revolving door effect among patients in care (Bonaccorsi et al. 2020).

Aims of the article

To date, there have been few studies on the extent of personal and organisational health literacy in healthcare facilities (acute inpatient care) in Germany.

The article pursues the following objectives:

1) To report findings on the personal and organisational CC of managers in healthcare facilities in Germany,
2) to analyse differences in the OGK between the types of facility (hospital, nursing care, integration assistance),

3) to illustrate the connection between personal and organisational health and safety as well as the work ability and mental health of managers in healthcare facilities.

The 'EwiKo' project

In In the cooperation project of AOK PLUS and Fulda University of Applied Sciences 'Development of health literacy in healthcare facilities (EwiKo)' (Head: Prof. Dr Katharina Rathmann), a concept of measures was developed to accompany healthcare facilities (i.e. hospitals, nursing and integration assistance) on their way to becoming health-competent facilities (duration: 01.01.2020 to 30.06.2023). The background for the project was the National Action Plan for Health Literacy, which calls for the healthcare system to be made user-friendly and health literate at all levels. The 'EwiKo' project comprised four work packages (WP) (Fig. 3), operated at the interface between workplace health promotion and workplace health management and was aimed holistically at all standards of OGK as well as the personal health literacy of users (i.e. patients, residents, specialist and management staff) in the facilities. The aim of the 'EwiKo' project was to provide the facilities with user-friendly and practical support to strengthen the CC. An overview of the user-friendly, facility-specific products that were developed as part of the 'EwiKo' project can be found in Online Appendix 1. The 'EwiKo' project was based on theSAT-OHL-HOS concept and took into account eight 'standards' or 'fields of action'

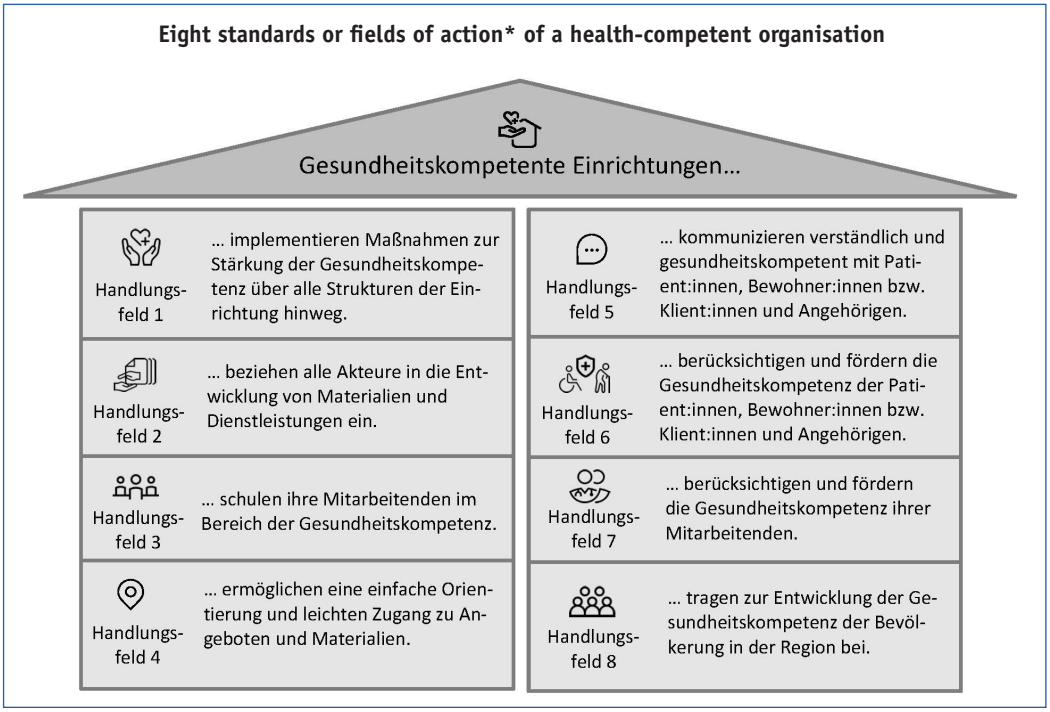


Fig 1: *Eight standards or fields of action* of a health-competent organisation. Source: Own representation based on Working Group HPH & HLO (2019), Rathmann et al. (2021a; 2021b), Rathmann/László (2024a). *Based on experience with practice settings, particularly in the care sector, the term 'standards' can be replaced by 'fields of action' to avoid confusion with 'care standards'.*

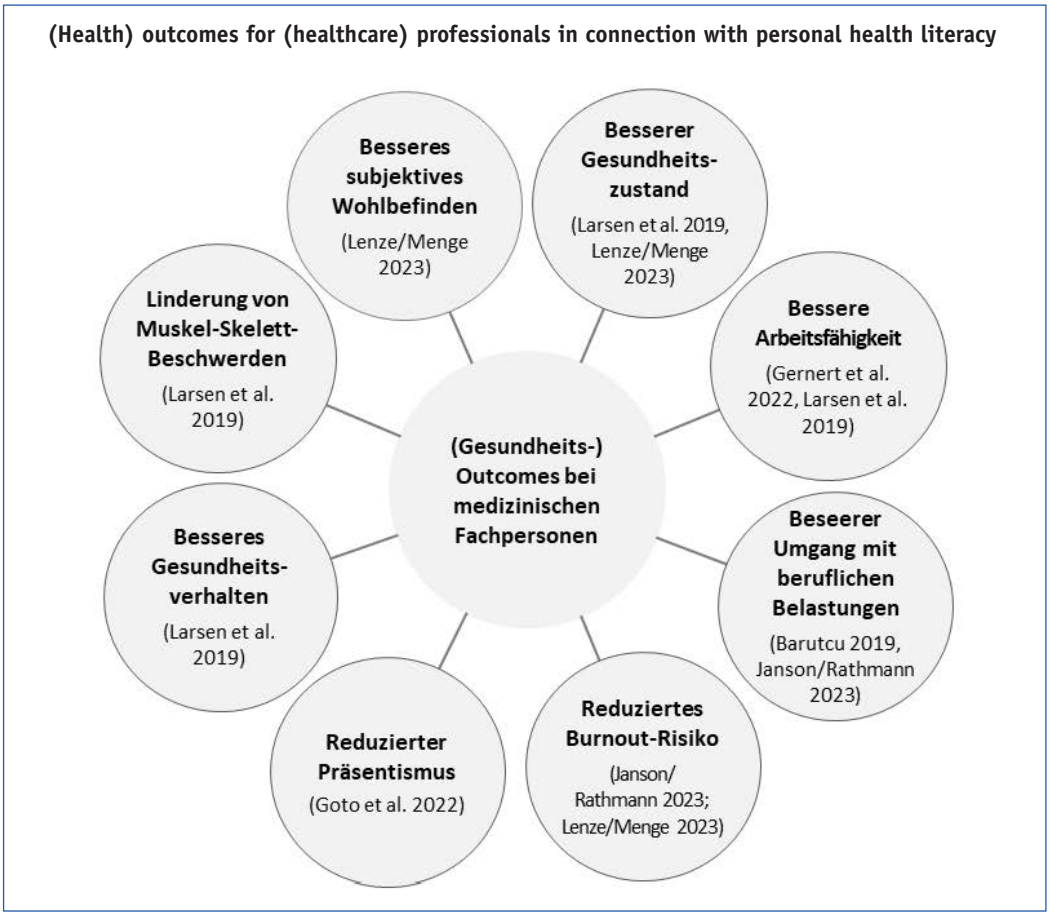


Fig. 2: *(Health) outcomes for (healthcare) professionals in connection with personal health literacy. Source: own illustration. The source references can be found in Online Appendix 2*

of the OGK the cooperation project of AOK PLUS and Fulda University of Applied Sciences 'Development of health literacy in healthcare facilities (EwiKo)' (Head: Prof. Dr Katharina Rathmann), a concept of measures was developed to accompany healthcare facilities (i.e. hospitals, nursing and integration assistance) on their way to becoming health-competent facilities (duration: 01.01.2020 to 30.06.2023). The background for the project was the National Action Plan for Health Literacy, which calls for the healthcare system to be made user-friendly and health literate at all levels. The 'EwiKo' project comprised four work packages (WP) (Fig. 3), operated at the interface between workplace health promotion and workplace health management and was aimed holistically at all standards of OGK as well as the personal health literacy of users (i.e. patients, residents, specialist and management staff) in the facilities. The aim of the 'EwiKo' project was to provide the facilities with user-friendly and practical support to strengthen the CC. An overview of the user-friendly, facility-specific products that were developed as part of the 'EwiKo' project can be found in Online Appendix 1. The 'EwiKo' project was based on theSAT-OHL-HOS concept and took into account eight 'standards' or 'fields of action' of the OGK.

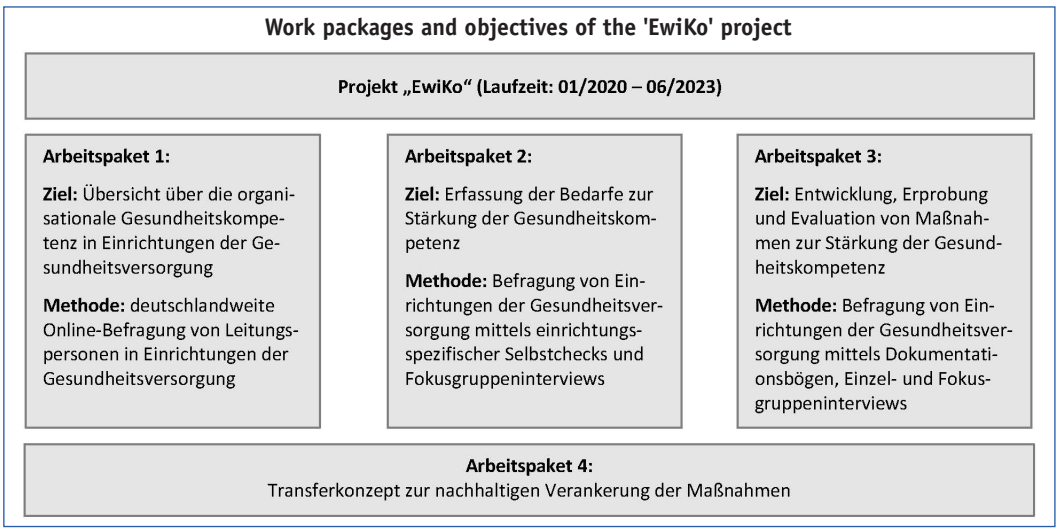


Fig 3: *Work packages and objectives of the 'EwiKo' project. Source: own illustration based on László/Spatzier/Rathmann (2024).*

Data basis and methodology (WP1: online survey)

As part of the 'EwiKo' project, a nationwide online survey (WP1, Fig. 3) was conducted in order to record the current status of the OGK, the willingness of the organisations to prevent and the structures of workplace health promotion in healthcare organisations within Germany. Managers and specialists with management functions from hospitals, care facilities and integration assistance in the area of living and working took part in the survey.

The survey was conducted using a quantitative online questionnaire between March and July 2021. A total of N = 13,160 healthcare facilities were invited to take part in the survey. N = 621 people took part in the survey and completed the questionnaire in full (response rate: 4.72%). An overview of the survey instruments used and the distribution of the scales can be found in Online Appendix 3.

Of the N = 621 healthcare facilities, 10.0% were hospitals (N = 62), 31.4% were care facilities (N = 195), 49.4% were integration assistance facilities (N = 307) and 9.2% were other facilities (N = 57).

Data analysis

Descriptive analyses were carried out using frequency evaluations and bivariate evaluations using cross-tabulations (Pearson's Chi2test) with a 5% significance level (α= 0.050). Binary-logistic regression models were used to analyse the associations between personal and organisational GK in connection with the respondents' ability to work and their mental and physical health. The regression parameters were interpreted using odds ratios (OR) with 95% confidence intervals (CI). All statistical analyses were calculated using the statistical software IBM SPSS Statistics Version 28t.

Results

In the area of personal GK, 22.9% (n = 140) of the 621 managers and specialists surveyed reported difficulties in dealing with health information (Fig. 4). The most frequent difficulties were found when assessing information on health risks from the media (32.2%; n = 198), when making decisions on disease prevention based on information from the media (29.1%; n = 179) and when researching support options for mental stress (26.8%, n = 163). In addition, 23.0% of respondents (n = 141) found it difficult to judge when they should seek a second opinion from medical professionals. 16.4% (n = 100) of respondents found it difficult to understand information on health promotion from the media.

50.3% (n = 276) of respondents reported a below-average level of OGK in their organisation. The most common needs (59.3%; n = 331) were for the 'existence of communication standards', the provision of 'information for patients/clients via various media' (58.0%; n = 321), the 'use of individualised health information' (53.7%; n = 296) and the 'consideration of health literacy in quality management measures' (51.8%; n = 301) (Fig. 5). Just under half (48.9%; n = 276) reported a below-average level of OGK in 'developing health information with the involvement of patients/clients', 42.5% (n = 233) in 'making efforts to help clients find their way around easily' and 39.7% (n = 225) in 'training staff on health literacy'.

An analysis of the extent of OGK (sum index) differentiated according to the type of facility showed that 50.8% (n = 30) of respondents from hospitals, 46.3% (n = 88) from inpatient (elderly) care and 52.2% (n = 154) from integration assistance facilities

reported a below-average extent of OGK (Fig. 6). Even if the differences in the extent of OGK between the facilities were not statistically significant, they nevertheless provided an initial indication of the need to strengthen OGK.

For managers with a low personal GK (Tab. 1), the results indicated a 2.16-fold increased chance of low physical work ability (95% CI: 1.33-3.51; p = 0.002), a 1.89-fold increased chance of low mental work ability (95% CI: 1.25-2.86; p = 0.002) and a 1.57-fold increased chance of an above-average risk of burnout (95% CI: 1.05-2.35; p = 0.028) compared to managers with a sufficient personal GK.

Respondents from facilities with below-average OGK levels (Tab. 1) had a 1.65-fold higher chance of low physical work ability (95% CI: 1.05-2.60; p = 0.030), a 1.82-fold higher chance of low mental work ability (95% CI: 1.252.67; p = 0.002) and a 1.46-fold increased chance of an above-average risk of burnout (95% CI: 1.05-2.03; p = 0.027) compared to respondents from organisations with an above-average level of OGK (Tab. 1).

Overall, the results of the online survey in healthcare facilities impressively indicated that the OGK in healthcare facilities should be strengthened in the areas of 'communication standards', 'multimedia information' and 'ensuring understanding of health information in critical situations'. The results from the 'EwiKo' project also showed how closely organisational health literacy is associated with the aspects of work ability and burnout risk of the managers surveyed.

Discussion

The aim of the article was to survey personal and organisational health-related factors from the perspective of managers in healthcare facilities (hospital, nursing and integration assistance) and to analyse them in connection with health indicators. The results showed 1) that one in five managers surveyed stated a low level of personal health. With regard to the extent of OGK, 2) it was shown that managers from integration assistance most frequently reported a below-average extent, followed by respondents in hospitals. Based on the items, the survey results indicated that the greatest need to strengthen the OGK lies in the areas of communication and the provision of information for patients/clients via various media. Finally, the results showed 3) a significant association between the personal and organisational OGK with a low ability to work and an increased risk of burnout among the managers surveyed.

Following on from previous studies, the present results indi-

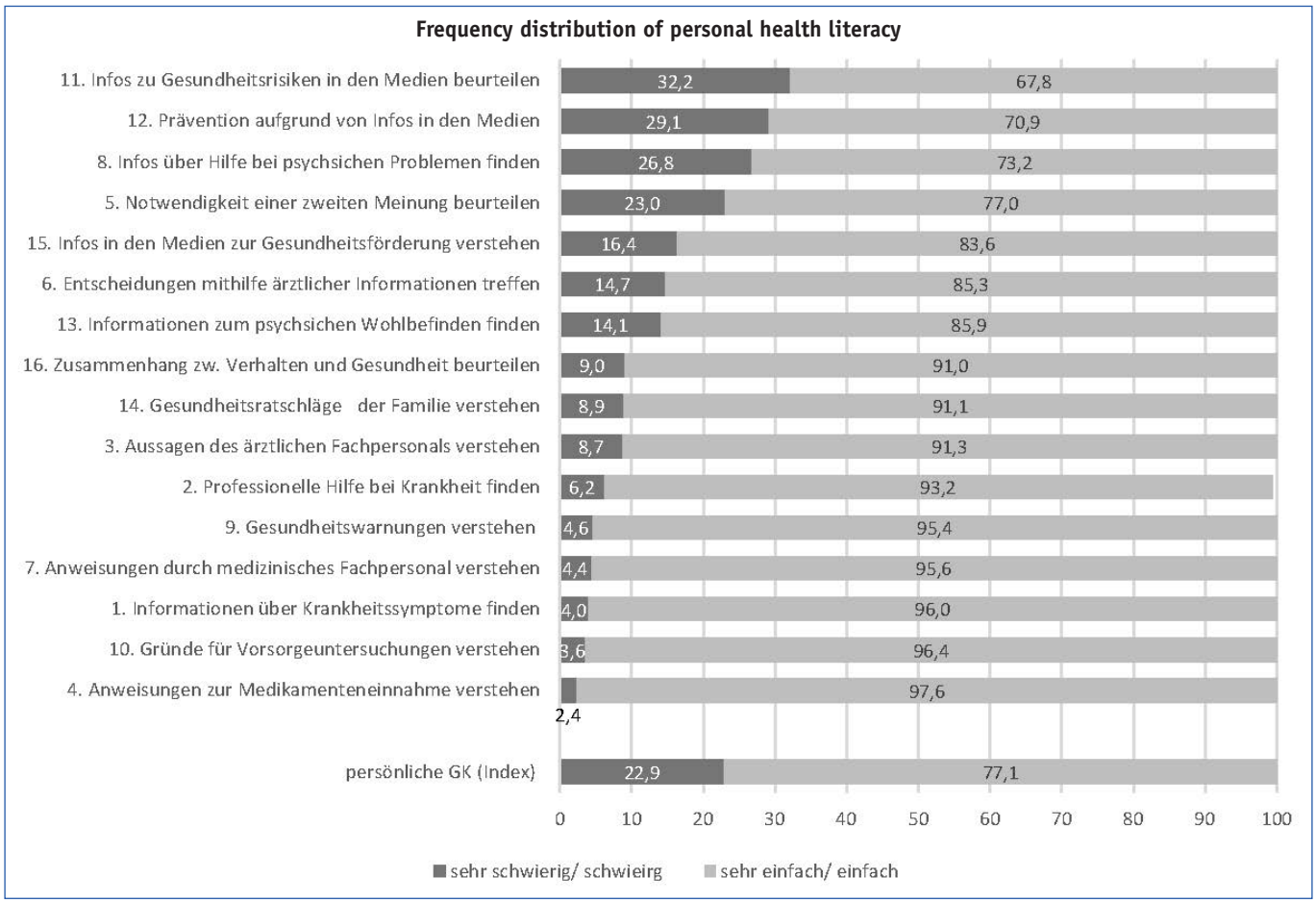


Fig. 4: *Frequency distribution of personal health literacy (in %, n = 609-620). Source: own representation. Note: GK = health literacy; Md = median; SD = standard deviation; Min.=minimum; Max.=maximum. Cut-off according to median split per individual item and index: Md (SD), all individual items Min.Max.=1 -4; Item 1=2 (0.577), Item 2=2 (0.622), Item 3=2 (0.622), Item 4=2 (0.553), Item 5=2 (0.739), Item 6=2 (0.647), Item 7=2 (0.589), Item 8=2 (0.838), Item 9=1 (0.582), Item 10=1 (0.571), Item 11=2 (0.841), Item 12=2 (0.810), Item 13=2 (0.683), Item 14=2 (0.667), Item 15=2 (0.750), Item 16=2 (0.650); personal GK Index=3 (0.592); Min.-Max.=1-3*

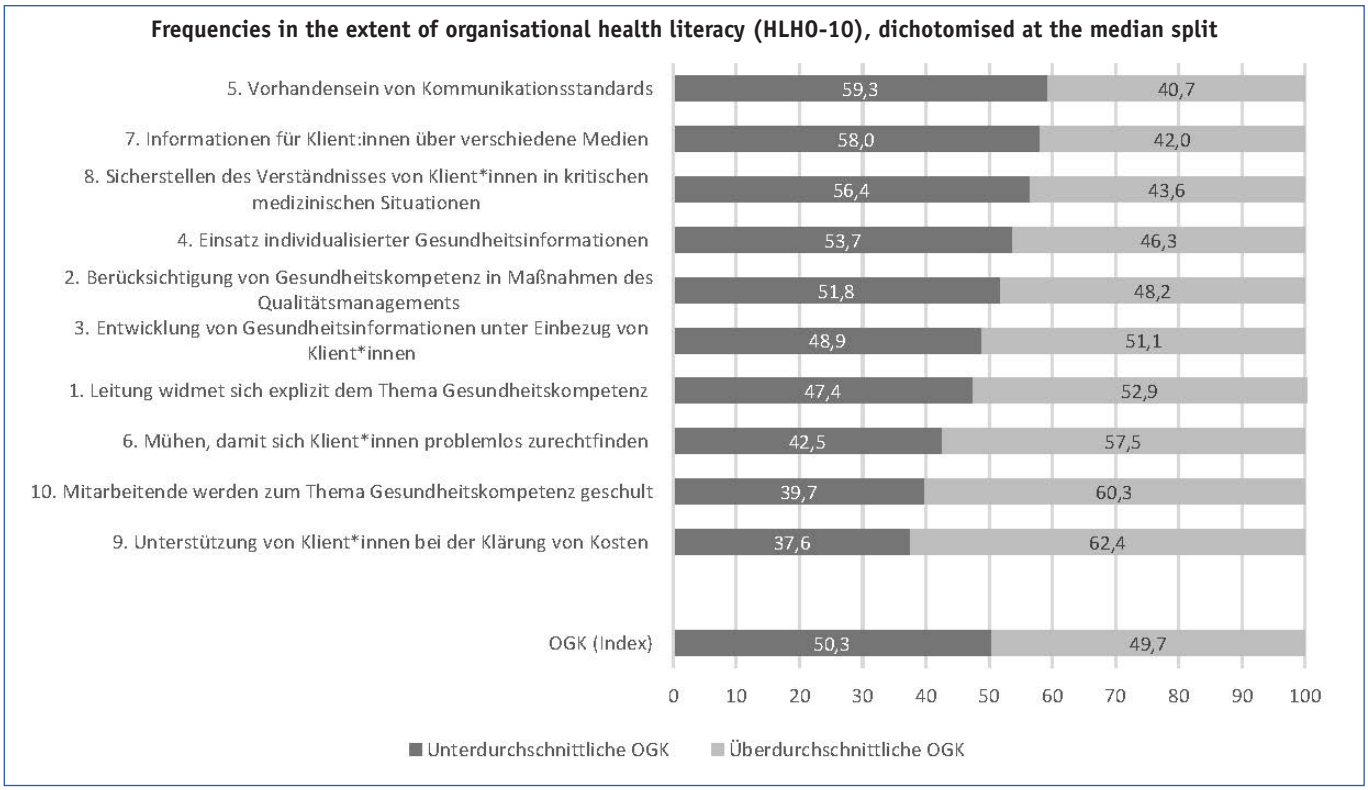


Fig. 5: *Frequencies in the extent of organisational health literacy (HLH0-10), dichotomised at the median split (in %, n = 613-620). Source: own representation. Note: OGK=organisational health literacy; Md=median; SD=standard deviation; min.=minimum; max.=maximum; cut-off according to median split per individual item and index: Md (SD), all individual items min.Max.=1-7; Item 1=6 (1.288), Item 2=5 (1.466), Item 3=5 (1.668), Item 4=4 (1.824), Item 5=5 (1.633), Item 6=6 (1.341), Item 7=4 (1.735), Item 8=5 (1.433), Item 9=6 (1.480), Item 10=5 (1.615); OGK-Index= 49 (10.72); Min.Max. 14-70.*

cated that the frequency of sufficient personal health and safety among managers was significantly higher (77.1%) than in the general population, which was to be expected due to the professional background of the respondents and the coronavirus pandemic. In comparable studies, 69.9% of young job candidates in the healthcare sector had a lower personal GK (Simon et al. 2022). Survey results from professionals in (outpatient) geriatric care showed that almost 40.0% of the nursing professionals surveyed reported a low personal GK (Janson/ Rathmann 2021).

At 50.3%, the managers surveyed as part of the 'EwiKo' project rated the extent of OGK in their facility as below average. In a comparable study in facilities for people with disabilities, the The strengthening of OGK in healthcare facilities brings benefits for the facilities, employees and patients. Manuals and collections of methods (Rathmann/László 2024a), such as those used in the 'EwiKo' project, offer support for the implementation of measures to strengthen OGK in healthcare facilities. These so-called toolboxes for strengthening the OGK (for healthcare facilities: Rathmann et al. 2021a, for integration assistance: Rathmann et al. 2021b)also show thatmore than half

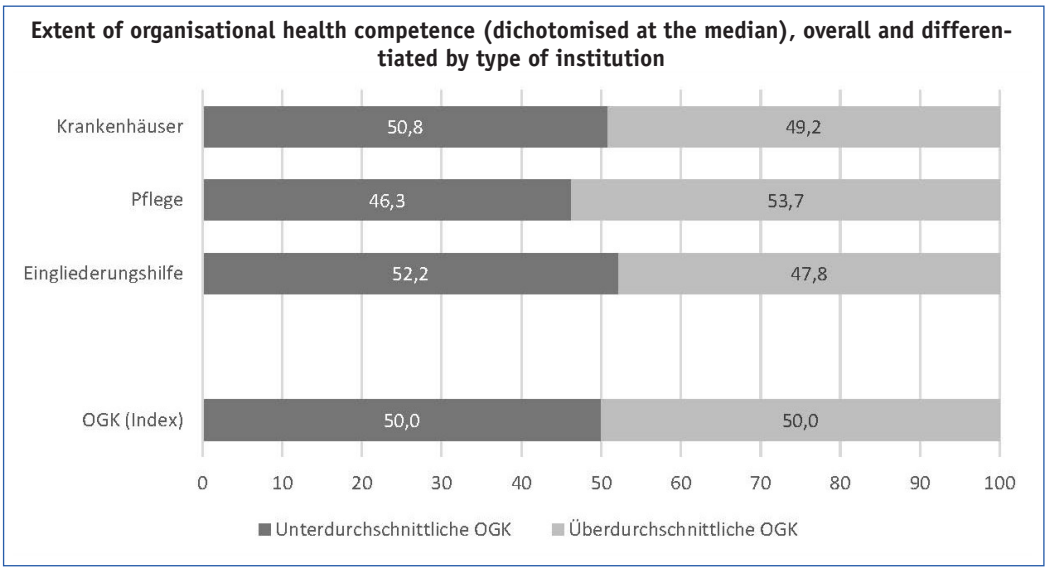


Fig. 6: *Extent of organisational health competence (dichotomised at the median) overall and differentiated by type of institution (in %, n = 597-620). Source: own illustration. Note: OGK = organisational health literacy. Cut-off of the sum index of all OGK items (cut-off at the median): Md=49.50; SD=10.66; OGK Index: min.-max.=14-70.*

Persönliche und organisationale Gesundheitskompetenz im Zusammenhang mit niedriger physischer Arbeitsfähigkeit, niedriger psychischer Arbeitsfähigkeit und überdurchschnittlichem Burnout-Risiko		
	Persönliche GK	**Organisationale GK**
Niedrige physische Arbeitsfähigkeit (RK: hohe psychische Arbeitsfähigkeit)	2,16 (1,33-3,51)**	1,65 (1,05-2,60)*
	p = 0,002	p = 0,030
Niedrige psychische Arbeitsfähigkeit (RK: hohe psychische Arbeitsfähigkeit)	1,89 (1,25-2,86)**	1,82 (1,25-2,67)**
	p = 0,002	p = 0,002
Überdurchschnittliches Burnout-Risiko (RK: Unterdurchschnittliches Burnout-Risiko)	1,57 (1,05-2,35)*	1,46 (1,05-2,03)*
	p = 0,028	p = 0,027

Tab. 1: Persönliche und organisationale Gesundheitskompetenz im Zusammenhang mit niedriger physischer Arbeitsfähigkeit, niedriger psychischer Arbeitsfähigkeit und überdurchschnittlichem Burnout-Risiko (Odds Ratio, 95%-KI). Quelle: Eigene Darstellung. Anmerkung: GK=Gesundheitskompetenz; KI=Konfidenzintervall; OR=Odds Ratio; RK=Referenzkategorie; Signifikanz: * p< 0,05; ** p< 0,01; *** p< 0,001. Die binär-logistischen Regressionsmodelle für die persönliche GK und die organisationale GK wurden jeweils unter der Kontrolle von Alter, Geschlecht, Bildungshintergrund und Einrichtungsart berechnet.

of the managers and professionals rate the extent of OGK as below average, with the lowest values of HLHO-10 in the area of 'Participatory development of health information' (item 3) and 'Use of individualised health information' (item 4) (Rathmann et al. 2020). In a study in hospitals in Italy, the majority (65.0%) of managers surveyed reported a below-average level of OGK (Bonaccorsi et al. 2020). A below-average level was most frequently found for the area of 'Consideration of health literacy in quality management measures' (item 2 of HLHO-10) and above-average Note: With regard to the correlations between (Bonaccorsi et al. 2020), it was found that respondents with low personal health literacy have an increased risk of having poor physical and mental work ability and an above-average risk of burnout compared to respondents with sufficient personal health literacy. Previous studies have shown that healthcare professionals should be considered a vulnerable group in terms of mental and physical health problems (Raspe et al. 2020; Zeike et al. 2023). In addition, nursing staff in outpatient care with a low personal GK showed an increased risk of more frequent thoughts of changing careers (Janson/Rathmann 2021; Raspe et al. 2020). The authors therefore consider personal CC as a personal resource for coping with work-related stress (Janson/Rathmann 2023).

Conclusion

The findings from the 'EwiKo' project provide initial evidence for Germany that the OGK can have a positive effect on the well-being of healthcare professionals by creating a health-competent environment. Previous studies have indicated that the extent of OGK is not only positively associated with patient outcomes, but also with employee outcomes (Gernert et al. 2022; Lindert et al. 2023). In this context, it is pointed out that targeted promotion of OGK in the overall concept of the institution has positive associations with the work ability and health of professionals (Farmanova et al. 2018; Lindert et al. 2023; Rathmann et al. 2022). <<

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Author declaration

The authors declare that there are no conflicts of interest.

Ethics vote/ethical aspects

The study was conducted in accordance with the Declaration of Helsinki. The ethical review and approval of the study was carried out by the Ethics Committee at Fulda University of Applied Sciences (approval numbers: Ref.: 3.1.9.2 - kkm- ; approval date: 13.05.2020). A declaration of consent was obtained from all persons involved in the study.

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Addendum

The authors have made the following appendices available online:
Anlage 1: https://t1p.de/mhx98
Anlage 2: https://t1p.de/12oek
Anlage 3: https://t1p.de/gzbby

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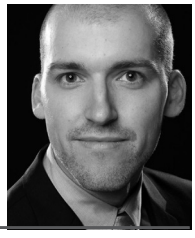
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