



OPEN ACCESS

EDITED BY

Lawrence StLeger,
Deakin University, Australia

REVIEWED BY

Albert Lee,
The Chinese University of Hong Kong, China

*CORRESPONDENCE

Kevin Dadaczynski
✉ kevin.dadaczynski@gw.hs-fulda.de

†These authors have contributed equally to this work and share first authorship

RECEIVED 20 September 2023

ACCEPTED 27 November 2023

PUBLISHED 04 January 2024

CITATION

Leksy K, Gawron G, Rosário R, Sormunen M, Velasco V, Sandmeier A, Simovska V, Wojtasik T and Dadaczynski K (2024) The importance of school leaders in school health promotion. A European call for systematic integration of health in professional development. *Front. Public Health* 11:1297970. doi: 10.3389/fpubh.2023.1297970

COPYRIGHT

© 2024 Leksy, Gawron, Rosário, Sormunen, Velasco, Sandmeier, Simovska, Wojtasik and Dadaczynski. This is an open-access article distributed under the terms of the [Creative Commons Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

The importance of school leaders in school health promotion. A European call for systematic integration of health in professional development

Karina Leksy^{1†}, Grzegorz Gawron², Rafaela Rosário^{3,4,5}, Marjorita Sormunen⁶, Veronica Velasco⁷, Anita Sandmeier⁸, Venka Simovska⁹, Tomasz Wojtasik¹⁰ and Kevin Dadaczynski ^{11,12*†}

¹Department of Social Science, Institute of Pedagogy, University of Silesia, Katowice, Poland,

²Department of Social Science, Institute of Sociology, University of Silesia, Katowice, Poland, ³School of Nursing, University of Minho, Braga, Portugal, ⁴Health Sciences Research Unit: Nursing (UICISA: E), Nursing School of Coimbra, Braga, Portugal, ⁵Research Centre in Nursing, School of Nursing, University of Minho, Braga, Portugal, ⁶Institute of Public Health and Clinical Nutrition, University of Eastern Finland, Kuopio, Finland, ⁷Department of Psychology, University of Milano-Bicocca, Milan, Italy, ⁸Schwyz University of Teacher Education, Goldau, Switzerland, ⁹Danish School of Education, Aarhus University, Copenhagen, Denmark, ¹⁰Regional In-Service Teachers Training Centre Metis in Katowice, Katowice, Poland, ¹¹Department of Health Sciences, Fulda University of Applied Science, Fulda, Germany, ¹²Center for Applied Health Science, Leuphana University Lueneburg, Lueneburg, Germany

School leaders such as principals are key not only for educational and school quality but also for initiating and sustainably anchoring any innovation in schools. Although there is widespread agreement about the importance of holistic approaches to school health promotion, the role of principals has received increased, but not yet systematic, attention. In this context, it is unclear which leadership competencies are needed and to what extent they are taught. Hence, this paper aims to reflect whether and to what extent health promotion plays a role in preservice and inservice training of principals in Europe. Based on the results we call for a more systematic analysis of existing teaching opportunities and teaching needs for health-promoting leadership, the development of a European competence framework for health-promoting leadership, the development and implementation of a European system that monitors and evaluates the effectiveness of those preservice and inservice training programs, and the development of case-studies to stimulate a mutual learning process.

KEYWORDS

school principals, health-promoting leadership, pre-service and in-service training, competence framework, Health Promoting School

Introduction

School principals in school health promotion

School leaders matter for many essential school outcomes, including student achievements, positive school climate, and productive teacher work. However, the size of this influence differs (1) and depends on individual, organizational, and system factors. Grissom et al. argue that effective school principals should orient their practice toward constructive interactions with teachers, build a positive school climate, facilitate collaboration and

professional learning, and have strategic personnel and resource management processes (1). School leaders play a primary role in decision-making, meaning their decision is “a critical component of organizational actions” (2). In line with this, school principals are also crucial for co-creating and supporting a healthy environment for the whole school community.

Undoubtedly, during the last decades schools have been recognized as a key setting for health promotion. Due to compulsory schooling, a large proportion of children and young people, regardless of their social, economic and cultural background, can be easily reached through school based interventions. Hence, schools provide a window of opportunity to promote health behaviors and health as early as possible in the lifespan (3). This is especially important as research increasingly show that mental and physical health indicators are also related to academic performance, achievement, and school outcomes which highlights health to be a driving force for educational success (4–7). In this context school principals, play an important role in initiating, implementing, and sustaining health promotion and education efforts across the curriculum and integrating them into the school organization and culture. However, research has shown that although school principals view the school as an important arena for health promotion, their support for related school practices lags behind (8, 9). In times of (neo-liberal) school reforms based on different, often conflicting educational principles and approaches, the issue is how much room school principals truly have to facilitate and lead these school and curricular development processes. Moreover, the scope of action of principals depends on various aspects of educational governance, including the political and institutional anchoring of health promotion (10), but also on the available resources, school autonomy, accountability, market orientation, and the influence of other actors and networks (11).

Given their importance, school principals must be equipped with the skills and resources they need to take responsibility for promoting health in their schools. The following perspective aims to shed light on these skills and abilities by raising the question, whether and how health issues are addressed in initial and in-service training of school principals in Europe.

The multiple facets of health-promoting leadership

In many countries, the role of the school principals has undergone intensive changes over the last couple of decades. In today's rapidly changing world, schools face a variety of challenges, which include amongst others the increasing quantity and quality of health information (known as the infodemic), the pressing issue of climate change, or political and economic insecurities. These challenges are not unrelated to health and have led to an increase in health-related problems, not least as a result of the COVID-19 pandemic (12–15). These complex and interconnected challenges necessitate educational leaders who can navigate and address them effectively by also advocating a positive approach of health and wellbeing. This requires a health-promoting leadership which has been defined “[...] as leadership that is concerned with creating a culture for health-promoting workplaces and values to inspire and

motivate the employees to participate in such a development” (16). While the importance of health-promoting leadership in the school setting has been emphasized for quite some time (17, 18) there has been little discussion of what kind of skills should be included here. So far, competencies necessary for health education and health promotion in schools have been discussed specifically for teachers (19–21). While Mikkonen et al. (20) and Moynihan et al. (21) identified knowledge, skills and attitudes as core competences of health education and science, Carlsson (19) synthesized five domains of professional competencies in school health promotion (policy development, organizational development, professional development, development of students' learning, development of health promoting activities). In their recent special issue, Dadaczynski et al. (22) suggested three perspectives of leadership in school health promotion:

- **Self-related health-promoting leadership** concerns the way school principals deal with their own health, especially in light of high professional demands. Increasing evidence show that school principals suffer from high workload and work stress that rised during the COVID-19 pandemic and that is associated with mental health problems (23–26). With increasing work demands, the likelihood of maladaptive coping strategies (e.g., extensification and intensification of work) increases, which in turn can have a detrimental effect on indicators of mental health (24, 25). Considerably less research focuses on deputy principals or members of the school management team. Although inconclusive, study findings from Asia show that deputy principals perceived more stress during the pandemic (25) and were more often affected by symptoms of depression (27). This may be due to the role ambiguities and high workloads to which deputy heads are exposed (e.g., higher teaching duties and leadership tasks). Promoting their health would be equally important, as deputy principals are future principals and health problems could lead them to leave this career path prematurely. Self-centered health-promoting leadership therefore requires school leaders to be able to adequately assess their workloads and demands and to take self-care for the maintenance and promotion of their own health.
- **Staff-related health-promoting leadership** includes activities toward health care and support of teaching and non-teaching school staff. Although research in the school setting is scarce, findings indicate that principal support and specific leadership styles such as transformative or salutogenetic leadership are associated with teacher satisfaction and indicators of mental health (28–30). Principals who pursue a staff-focused health-promoting leadership style demonstrate a high level of interest in the current work situation and its influence on the satisfaction and wellbeing of teaching and non-teaching school staff. They take into account the needs and abilities of the employees and align them with the expectations and work demands. In addition, they enable regular exchange within the whole school team and support systematic cooperation and mutual support.
- **Intervention-related health-promoting leadership** is concerned with activities and management practices that need

to be taken to support health-promoting change processes in the school (17, 31, 32). Findings from a very recently published systematic literature review revealed e.g., that principals's attitudes, beliefs, knowledge, general involvement and support were important aspects of implementing activities on school health promotion (32). Indeed, findings from Germany show that positive attitudes toward the Health Promoting School (HPS), their perceived competencies to support HPS implementation, but also their decision latitude and their perception that health promotion result in educational benefits were positively associated with the actual implementation status (33, 34). Moreover, their ability to find, understand, critically evaluate and apply health information (i.e., health literacy) was linked with HPS implementation, which in another study from Switzerland was moderated by positive attitudes toward HPS (35). Particularly in the field of educational research, the specific styles and factors underlying successful leadership are being discussed. With regard to educational leadership research, there is much discussion about the specific styles or factors that underlie successful leadership and how these are linked to desirable school outcomes (36). Research suggests that a visionary, i.e., a transformative leadership style is associated with a positive and innovation-friendly school culture as perceived by teachers (37, 38). However, it is important to emphasize that leadership directed toward health-promoting or educational change processes is not limited to principals alone. Depending on varying educational policies and structures in each country, this may also include mid-level management and specialized health managers. As highlighted by Samdal and Rowling (39) and others, successful change process are based on a balance of leadership and management practices. This requires distributed leadership, a leadership practice in which responsibilities are shared across many shoulders and groups and which can have beneficial effects on school improvement (40).

As emphasized by Dadaczynski et al. (22) these three dimensions are highly interconnected and influenced by political and infrastructural conditions at the school, local and national levels.

School principals' professional development in health promotion

In most European countries, school principals start their educational career as teacher with main focus on teaching. There is widespread agreement that the transition from teacher to school principal or deputy principals, however, requires specialized skills due to e.g., decentralization, i.e., shifting responsibilities and power to the school level, increasing complexity of school tasks and contexts as well as the expansion of the roles and tasks of school principals (41, 42). Hence, principalship is seen as an occupation in itself which demands continuous professional development and skill acquisition. Findings from the OECD Teaching and Learning International Survey (TALIS) show that 85% of teachers

completed a training or educational programme before starting their principalship, while 5% received training in teaching after becoming a school principal and 10% had no preparation at all (43).

As pointed out by Sahlin (42), unlike preservice training, largely little is known about the professional development of school leaders with work experience (in-service training).

Although school health promotion and prevention have been high on the agenda of Public Health research, practice and policy for many years, it is not yet known whether and to what extent prospective and experienced school leaders are prepared with regard to the three dimensions on health-promoting leadership outlined above. Without claiming to be exhaustive, we have conducted an initial screening for six European countries (Germany, Poland, Finland, Italy, Portugal, and Switzerland) to determine whether health promotion and prevention play a role in the preservice and inservice training of school principals.

Regarding the structure and organization of initial training and in-service training for school principals, there is a great deal of diversity among and within the countries. Due to the federal structure, the qualification of school principals is not regulated nationwide, but at the level of the federal states in Germany. All except two German federal states require mandatory training for prospective school principals, which takes between 5 and 37 days in total (44). In Switzerland, training for principals are organized in a decentralized manner by teacher training colleges in the German speaking part and more centralized in French-speaking Switzerland. In some countries, specialized Master programmes on advanced studies (Switzerland), management in education (Poland), or school administration and management (Portugal). The same situation applies to in-service training for school principals that is often regulated on a national or federal level but organized by regional or local stakeholders. In Italy, principals have no obligation to undergo in-service training. However, a wide range of trainings are offered on a regional level that also includes activities provided by the Health Promoting School network. While in Switzerland there are common standards for the further training of school principals, the landscape in Germany is very diverse with training activities provided by variety of stakeholders at the federal state level (45). For Finland, the Ministry of Education and Culture has defined six focus areas for educational training that do not directly address health promotion but are indirectly related to health (e.g., Promoting welfare, safety and social skills in learning communities, promoting a sustainable lifestyle, equality, and non-discrimination). Concrete educational training activities are organized by the Finnish Regional State Administrative Agencies, but several other in-service training providers and content for principals are also available. A similar situation is found in Portugal, where in-service training encompasses diverse areas of knowledge that are relevant to teaching and educational practice and that are approved and accredited by a National Council.

Comparing the current situation across the six European countries, it becomes clear that health promotion and prevention are not systematically anchored in the initial and in-service training of school principals. With regard to **self-related health-promoting leadership** there are several further training offers available in only a few German federal states that focus on mental health-related topics such as stress and coping and are

voluntary. The same can be seen in Poland with emphasis on stress management and burnout prevention but also on broader topics of self-management and development. All other countries do not explicitly address health topics on an individual level, but stress individual skills in a more generic perspective (e.g., self- and time-management, professional identity as a school leader). In Portugal, initial-training includes determinants of healthy lifestyles such as physical activity which however aims at school children. Even more rarely addressed are topics of the **staff-related health-promoting leadership** dimension. While for Finland and Portugal no specific activities could be found, for all other countries health is not directly mentioned in available training documents and catalogs, but implicitly addressed through a number of activities that focus more broadly on staff and team development, communication and feedback skills or social support provision. Only in two out of 16 German federal states healthy leadership or salutogenic leadership is included in voluntary training offers with the last approach focusing on the three dimensions of the sense of coherence concept (comprehensibility, manageability and meaningfulness) and how they can be implemented in information and communication processes of the school (46). Finally, aspects on **intervention-related health-promoting leadership** (e.g., development of health promotion policies and organizations) are not explicitly addressed in most of the countries examined. As for the other dimensions, although health is not mentioned directly, the issues addressed here have implicit relevance for school health promotion. These include general change management, project development, quality development and management or cooperation with parents and the surrounding school community. For Switzerland, the Schwyz University of Teacher Education explicitly addresses the importance of health in the organization of work, while in two German federal states training offers cover issues on health management and healthy school climate. Moreover, in some countries (e.g., Italy, Finland) school principals are supported in developing a strategic action plan on school improvement and development and in setting up start-up projects.

A need for action: concluding remarks

Worldwide, the educational system has undergone a substantial crisis during recent years. In addition to the COVID-19 pandemic, other crises include climate change, war, economic and energy crises, and the related refugee movement. All these crises are associated with immense educational and also health-related costs, not only for children and adolescents, but also for teaching and non-teaching school staff. For school staff in particular, these crises result in new demands that are often accompanied by work stress and increase the likelihood of long lasting health problems (14, 23, 24). On the one hand, the health of teachers is related to the quality of instruction and schooling (47), and it is to be expected that the increase in health-related stress and strain will further reduce the attractiveness of the teaching profession. For years, there has been a worldwide shortage of teachers and school principals, and it is reasonable to assume that this trend will continue and worsen (48). Investments in health promotion in schools therefore have a double added value: they not only contribute to the healthy growth of children and adolescents, but also strengthen the attractiveness

of the educational profession and promise positive effects on the quality of teaching and education through the promotion of health. However, this requires school principals to consider health promotion not as an additional task, but as an integral part of their educational core mission and their leadership responsibility. In order to achieve this, they need health-promoting leadership skills that are continuously taught both before they take up their position as a school principal (or deputy principal) and during their principalship. However, the initial examination of preservice and inservice training offers in six European countries carried out here shows that none of the three dimensions of health-promoting leadership has been systematically addressed so far. With this in mind, we see a clear demand:

- for a systematic and in-depth analysis of preservice and inservice training programs for school principals regarding the different facets of health-promoting leadership (self-related health-promoting leadership, staff-related health-promoting leadership, and intervention-related health-promoting leadership),
- to explore the needs for continuous competence development in the area of health promotion and prevention among prospective and existing school principals,
- to develop a European competence framework for health promoting-leadership that takes into account the political and structural characteristics of the educational systems in the European countries,
- to develop and implement a monitoring and evaluation system that provides evidence regarding the effectiveness of health-related training programs for school principals on the implementation of health-promoting interventions in schools, and
- to develop case studies that illustrate how health promotion has been incorporated in preservice and inservice training programs for school leaders that can serve as a practical inspiration and as a basis for mutual learning.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

KL: Conceptualization, Funding acquisition, Investigation, Resources, Writing—original draft, Writing—review & editing. GG: Resources, Writing—original draft. RR: Formal analysis, Investigation, Resources, Writing—original draft, Writing—review & editing. MS: Formal analysis, Investigation, Resources, Writing—original draft. VV: Formal analysis, Investigation, Resources, Writing—original draft. AS: Formal analysis, Investigation, Resources, Writing—original draft. VS: Formal analysis, Resources, Writing—original draft, Writing—review & editing. TW: Investigation, Resources, Writing—original draft. KD: Conceptualization, Investigation, Resources, Supervision, Writing—original draft, Writing—review & editing.

Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. This research activities were co-financed by the funds granted under the Research Excellence Initiative of the University of Silesia in Katowice.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships

References

- Grissom JA, Egalite AJ, Lindsay CA. *How Principals Affect Students and Schools: A Systematic Synthesis of Two Decades of Research*. The Wallace Foundation (2021). Available online at: <http://www.wallacefoundation.org/principalsynthesis> (accessed March 31, 2023).
- Hariyati N, Tarma T, Fajarwati D, Setiawan AC. Identifying school principal candidates' perception on teacher's appointment as school principal. *J Pendidikan dan Pengajaran*. (2021) 54:220–229. doi: 10.23887/jpp.v54i2.33186
- Weare K, Nind M. Mental health promotion and problem prevention in schools: what does the evidence say? *Health Promot Int*. (2011) 2:29–69. doi: 10.1093/heapro/dar075
- Dadaczynski K, Schiemann S. Welchen Einfluss haben körperliche Aktivität und Fitness im Kindes- und Jugendalter auf Bildungsergebnisse? *Ger J Exerc Sport Res*. (2015) 4:190–9. doi: 10.1007/s12662-015-0381-0
- Long SJ, Littlecott H, Hawkins J, Eccles G, Fletcher A, Hewitt G, et al. Testing the “Zero-Sum Game” hypothesis: an examination of school health policies and practices and inequalities in educational outcomes. *J Sch Health*. (2020) 90:415–24. doi: 10.1111/josh.12889
- Morinaj J, Hascher T. On the relationship between student well-being and academic achievement: a longitudinal study among secondary school students in Switzerland. *Z Psychol*. (2022) 230:201–14. doi: 10.1027/2151-2604/a000499
- Schmid A, Morinaj J, Hascher T. On the relation between school alienation and social school climate. *Swiss J Educ Res*. (2021) 43:451–63. doi: 10.24452/sjer.43.3.8
- Simovska V, Prosch AK. Global social issues in the curriculum: perspectives of school principals. *J CurricStud*. (2016) 5:630–49. doi: 10.1080/00220272.2015.1114150
- Velasco V, Coppola L, Veneruso M, Lombardian HPS, Coordinators. COVID-19 and the Health Promoting School in Italy: Perspectives of educational leaders. *Health Educ J*. (2022) 81:69–84. doi: 10.1177/00178969211049377
- Darlington EJ, Violon N, Jourdan D. Implementation of health promotion programmes in schools: An approach to understand the influence of contextual factors on the process? *BMC Public Health*. (2018) 18:163. doi: 10.1186/s12889-017-5011-3
- Verger A, Fontdevila C, Parcerisa L. Reforming governance through policy instruments: How and to what extent standards, tests and accountability in education spread worldwide. *Stud Cult Polit Educ*. (2019) 40:248–70. doi: 10.1080/01596306.2019.1569882
- Cosma A, Bersia M, Abdrahmanova S, Badura P, Gobina I. *Coping through crisis: COVID-19 pandemic experiences and adolescent mental health and well-being in the WHO European Region. Impact of the COVID-19 pandemic on young people's health and well-being from the findings of the HBSC survey round 2021/2022*. Copenhagen: WHO Regional Office for Europe (2023).
- Khraisshah H, Alahmad B, Ostergard RL, AlAshqar A, Albaghdadi M, Vellanki N, et al. Climate change and cardiovascular disease: implications for global health. *Nat Rev Cardiol*. (2022) 19:798–812. doi: 10.1038/s41569-022-00720-x
- Minihan E, Begley A, Martin A, Dunleavy M, Gavin B, McNicholas F. Examining COVID-19 related occupational stress in teachers in Ireland through a qualitative study using a thematic analysis approach. *IJEDRO*. (2022) 3:100183. doi: 10.1016/j.ijedro.2022.100183
- Residori C, Kőlto A, Várnai DE, Nic Gabhainn S. *Age, gender and class: how the COVID-19 pandemic affected school-aged children in the WHO European Region. Understanding the impact of the COVID-19 pandemic on young people's health and well-being from the findings of the HBSC survey round 2021/2022*. Copenhagen: WHO Regional Office for Europe (2023).
- Eriksson A, Axelsson R, Axelsson SB. Development of health promoting leadership – experiences of a training programme. *Health Educ*. (2010) 110:109–123. doi: 10.1108/09654281011022441
- Rowling L, Samdal O. Filling the black box of implementation for health-promoting schools. *Health Educ*. (2011) 111:347–62. doi: 10.1108/09654281111161202
- Dadaczynski K, Paulus P. Healthy principals–healthy schools? A neglected perspective to school health promotion. In: Simovska V, McNamara P, editors. *Schools for Health and Sustainability: Theory, Research and Practice*. Dordrecht: Springer Netherlands (2015). p. 253–273. doi: 10.1007/978-94-017-9171-7_12
- Carlsson M. Conceptualizations of professional competencies in school health promotion. *Health Educ*. (2016) 116:489–509. doi: 10.1108/HE-07-2015-0022
- Mikkonen K, Ojala T, Sjögren T, Piirainen A, Koskinen C, Koskinen M, et al. Competence areas of health science teachers—A systematic review of quantitative studies. *Nurse Educ Today*. (2018) 70:77–86. doi: 10.1016/j.nedt.2018.08.017
- Moynihan S, Paakkari L, Välimaa R, Jourdan D, Mannix-McNamara P. Teacher competencies in health education: results of a Delphi study. *PLoS ONE*. (2015) 10:e0143703. doi: 10.1371/journal.pone.0143703
- Dadaczynski K, Carlsson M, Gu Q. Guest editorial: Leadership in school health promotion. The multiple perspectives of a neglected research area. *Health Educ*. (2022) 122:261–266. doi: 10.1108/HE-04-2022-138
- Klusmann U, Aldrup K, Roloff-Bruchmann J, Carstensen B, Wartenberg G, Hansen J, et al. Teachers' emotional exhaustion during the COVID-19 pandemic: levels, changes, and relations to pandemic-specific demands. *Teach Educ*. (2023) 121:103908. doi: 10.1016/j.tate.2022.103908
- Leksy K, Wójciak M, Gawron G, Muster R, Dadaczynski K, Okan O. Work-related stress of polish school principals during the COVID-19 pandemic as a risk factor for burnout. *IJERPH*. (2023) 20:805. doi: 10.3390/ijerph20010805
- Lau SS, Shum EN, Man JO, Cheung ET, Amoah PA, Leung AY, et al. A cross-sectional study of the perceived stress, well-being and their relations with work-related behaviours among Hong Kong school leaders during the COVID-19 Pandemic. *IJERPH*. (2022) 19:15777. doi: 10.3390/ijerph192315777
- Van Duong T, Nguyen MH, Lai C-F, Chen S-C, Dadaczynski K, Okan O, et al. COVID-19-related fear, stress and depression in school principals: impacts of symptoms like COVID-19, information confusion, health-related activity limitations, working hours, sense of coherence and health literacy. *Ann Med*. (2022) 54:2064–77. doi: 10.1080/07853890.2022.2101688
- Nitta T, Deguchi Y, Iwasaki S, Kanchika M, Inoue K. Depression and occupational stress in Japanese school principals and vice-principals. *Occup Med*. (2019) 69:39–46. doi: 10.1093/occmed/kqy149
- Hascher T, Waber J. Teacher well-being: a systematic review of the research literature from the year 2000–2019. *Educ Res Rev*. (2021) 34:100411. doi: 10.1016/j.edurev.2021.100411
- Harazd B, van Ophuysen S. Transformationale Führung in Schulen. Der Einsatz des “Multifactor Leadership Questionnaire” (MLQ 5 x Short). *J Educ Res*. (2011) 3:141–67. doi: 10.25656/01:4686
- Stang-Rabrig J, Brüggemann T, Lorenz R, McElvany N. Teachers' occupational well-being during the COVID-19 pandemic: the role of resources and demands. *Teach Educ*. (2022) 117:103803. doi: 10.1016/j.tate.2022.103803
- Hung TTM, Chiang VCL, Dawson A, Lee RLT. Understanding of factors that enable health promoters in implementing health-promoting schools: a systematic review and narrative synthesis of qualitative evidence. *PLoS ONE*. (2014) 9:e108284. doi: 10.1371/journal.pone.0108284

that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

32. Adams D, Lok Tan K, Sandmeier A, Skedsmo G. School leadership that supports health promotion in schools: a systematic literature review. *Health Educ J.* (2023) 82:693–707. doi: 10.1177/00178969231180472
33. Dadaczynski K, Rathmann K, Hering T, Okan O. The role of school leaders' health literacy for the implementation of health promoting schools. *IJERPH.* (2020) 17:1855. doi: 10.3390/ijerph17061855
34. Dadaczynski K, Hering T. Health promoting schools in Germany: mapping the implementation of holistic strategies to tackle NCDs and promote health. *IJERPH.* (2021) 18:2623. doi: 10.3390/ijerph18052623
35. Betschart S, Sandmeier A, Skedsmo G, Hascher T, Okan O, Dadaczynski K. The importance of school leaders' attitudes and health literacy to the implementation of a health-promoting schools approach. *IJERPH.* (2022) 19:14829. doi: 10.3390/ijerph192214829
36. Gumus S, Bellibas MS, Esen M, Gumus E. A systematic review of studies on leadership models in educational research from 1980 to 2014. *Educ Manag Adm Leadersh.* (2018) 46:25–48. doi: 10.1177/1741143216659296
37. Atasoy R. The relationship between school principals' leadership styles, school culture and organizational change. *Int J Progress Res Educ.* (2020) 16:256–74. doi: 10.29329/ijpe.2020.277.16
38. Park J-H. The effects of principal's leadership style on support for innovation: evidence from Korean vocational high school change. *Asia Pac Educ Rev.* (2012) 13:89–102. doi: 10.1007/s12564-011-9182-9
39. Samdal O, Rowling L. Theoretical and empirical base for implementation components of health-promoting schools. *Health Educ.* (2011) 111:367–90. doi: 10.1108/09654281111161211
40. Heck RH, Hallinger P. Assessing the contribution of distributed leadership to school improvement and growth in math achievement. *Am Educ Res J.* (2009) 46:659–89. doi: 10.3102/0002831209340042
41. Bush T. Preparation and induction for school principals: global perspectives. *Educ Manag.* (2018) 32:66–71. doi: 10.1177/0892020618761805
42. Sahlin S. Professional development of school principals—how do experienced school leaders make sense of their professional learning? *Educ Manag Adm Leadersh.* (2023). doi: 10.1177/17411432231168235
43. OECD. *TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners, TALIS.* Paris: OECD Publishing (2019).
44. Tulowitzki P, Hinzen I, Roller M. Die Qualifizierung von Schulleiter*innen in Deutschland. *Ein bundesweiter Überblick Die deutsche Schule.* (2019) 111:149–69. doi: 10.31244/dd.2019.02.04
45. Klein ED, Tulowitzki P. Die Fortbildung von Schulleiter*innen in Forschung und Praxis. *Ein Systematisierungsversuch Die deutsche Schule.* (2020) 112:257–76. doi: 10.31244/dd.2020.03.02
46. Paulus P, Hundeloh H. School heads as change agents. Salutogenic management for better schools. In: Bollmann U, Boustras G, editors. *Safety and Health Competence. A Guide for Cultures of Prevention.* Boca Raton, FL: CRC Press (2020). doi: 10.1201/9780429465253-14
47. Klusmann U, Aldrup K, Roloff J, Lüdtke O, Hamre BK. Does instructional quality mediate the link between teachers' emotional exhaustion and student outcomes? A large-scale study using teacher and student reports. *J Educ Psychol.* (2022) 114:1442. doi: 10.1037/edu0000703
48. Craig CJ, Hill-Jackson V, Kwok A. Teacher shortages: what are we short of? *J Teach Educ.* (2023) 74:209–13. doi: 10.1177/00224871231166244