Scientific Foundation SPIROSKI, Skopje, Republic of Macedonia
Open Access Macedonian Journal of Medical Sciences. 2022 Apr 10; 10(E):570-575.
https://doi.org/10.3889/oamjms.2022.8918
eISSN: 1857-9655
Category: *E - Public Health*
Section: *Public Health Education and Training*

OPEN ACCESS

Conditions and Challenges for Healthy School Staff in the Republic of Macedonia

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Edited by: Sasho Stoleski
Citation: Kjosevska E, Stefanovska VV, Memeti S, Prosheva S. Conditions and Challenges for Healthy School Staff in the Republic of Macedonia. Open-Access Maced J Med Sci. 2022 Apr 10; 10(E):570-575. https://doi.org/10.3889/oamjms.2022.8918
Keywords: Conditions; Challenges; Health; School staff
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Received: 07-Feb-2022
Revised: 17-Feb-2022
Accepted: 31-Mar-2022

Funding: This research did not receive any financial support
Competing Interest: The authors have declared that no competing interest exists

Abstract

BACKGROUND: Schools can contribute to improving the health and well-being of children and school staff.

AIM: The aim of paper is to present the current conditions in the schools regarding the health of the school staff and the challenges for improvement.

METHODS: Authors conducted a cross-sectional study in 320 primary schools – urban and rural, during 2019/2020. They used the Rapid Assessment Tool for data collection. Total scores were compared for school staff, in relation to current situation and priority. Several tests were used: Shapiro–Wilk W test, Mann–Whitney U-test, etc. A significance level of $p < 0.05$ was used.

RESULTS: The best current situation has the indicator (2.80 ± 0.48) which refers to the fact that "The new school staff receives mentors and education that helps them in their professional development." The second best current situation is the indicator (2.55 ± 0.57) which states that "The school supports staff in achieving and maintaining a healthy lifestyle." Evaluated with a high priority of about 60% are indicators: "There are sufficient resources for school staff to provide materials related to health topics that include mental health promotion" – 63.75%, "The school has a protocol for dealing with periodic staff leave as well as assisting in returning to work and re-engaging and adjusting after a period of sick leave" – 61.25% and "School promotes work-life balance, a reasonable workload and an open environment in which problems and stress at work can be discussed" – 60.94%.

CONCLUSION: School staff needs appropriate school measures, which will contribute to the promotion of better health in the school environment.

Introduction

Education and health affect each other, both individually and globally. The schools that promote health of both – students and staff that work there, contribute to the achievement of their main goals – providing good education and upbringing in a healthy school environment. They offer a structured and systematic plan for the health, well-being, and development of all students and teaching and non-teaching staff [1]. Promoting health in the school environment is important because health and education are intrinsically linked which means:

- Healthy children are more likely to learn effectively;
- Education plays an important role in economic prosperity and remains healthy prosperity later in life;
- Promoting the health of school staff can lead to greater job satisfaction and reduced absenteeism;
- Actively promoting school health can help schools and policy-makers achieve their academic, social, and economic goals.

Working together to make their schools better places to learn and work, students and school staff take action to enhance their physical, mental, and social health. In the process, they acquire knowledge and skills that improve educational outcomes [2].

According to the laws on primary, secondary, and faculty education in the Republic of Macedonia (RM), health promotion was implemented in every educational institution. Health promotion is included in the curriculum, but there is no specific national plan and strategy for school promotion [3]. The Schools for Health in Europe Network (SHE) was established in 2018. It is a non-profit organization supported by the WHO Regional Office for Europe, the Council of Europe, and the European Commission. The network aims to support the development and implementation of the concept of health promotion in schools in the European region. The five basic principles of the SHE network are *Equality, Sustainability, Inclusion*, *Participation,* and *Democracy.* Globally, schools are recognized as learning and teaching environments as suitable places for health promotion and prevention, which include a large number of children and young

people, teachers and non-teaching staff working in the school [4], [5]. The approach to health-promoting schools has emerged as a holistic intervention strategy since the adoption of the Ottawa Health Promotion Charter [6] favored by the World Health Organization (WHO) and represented by SHE, this approach focuses on changes throughout the system, for example, strengthening the physical and social environment, including interpersonal relationships, school policies, and learning and teaching conditions [7]. The network also defines five key pillars that define the approach of schools that promote health, and they are *the whole school approach to health*, *participation,* e*vidence, school and community, and* s*chool quality* – health-promoting schools create better learning processes and outcomes, with healthy students learning better and *healthier staff working better.* The aim of the paper is to present the current conditions in the schools regarding the health of the school staff (teachers and non-teaching staff) and the challenges for improvement of the situation.

Methods

Design of the research

The research was a prospective study conducted as a quantitative cross-sectional study, which covered 320 primary schools in the country. The permission was get from the Ministry of Health and Ministry of Education and Science before the starting the survey. Out of total 989 central and regional primary schools, the feedback rate in the survey was 32.40%, which is a solid response for this type of study. For a start, in the first phase, a pilot research was conducted in five primary schools, with two of these schools already implementing the concept of a healthy school as a project, while the other three were not part of that project. In these five schools, "The Rapid Assessment Tool" was tested as a research tool used in this study. After the pilot research, the questionnaire underwent minimal changes to adapt to the situation and conditions in our country and to be easier to understand for all who will complete it further during the research. In the second phase of the study, the survey was conducted.

Inclusion/exclusion criteria

The research was offered to all primary schools specifically, to the management staff (principal, pedagogue, or psychologist). The school was included with the prior consent of the representative of the management staff who was offered participation. Only schools where the management staff did not want to participate in the research or did not want to fill in the Rapid Assessment Tool were excluded from the study. All schools whose representatives answered with an incomplete questionnaire were excluded from the research.

Research instrument

The required data were collected through the use of the Rapid Assessment Tool prepared by the SHE, through thematic units processed from two aspects (a) current school situation – with a 3-point Likert-type scales of possible answers (does not exist, exists partially, and fully) and (b) priority school work – with a 3-point Likert-type scales of possible answers (low/no priority; medium priority; and high priority).

Healthy school staff was one of the thematic unites and was consisted of the following indicators/ statements:

U1. Our school offers regular teacher training and capacity building related to promoting health and well-being of the school community.

U2. There are sufficient resources available to provide the school staff with up to date materials on health topics including mental health promotion.

U3. Our school promotes a balance between work and private life, a reasonable workload and provides an open environment to discuss work problems and stress.

U4. New school staff at our school receives mentoring and training to assist them in their professional development.

U5. The school has a protocol for dealing with recurring staff absenteeism and in helping returning school staff to reintegrate and adjust after a period of sick leave.

U6. Our school supports school staff in achieving and maintaining a healthy lifestyle, for example, by creating a healthy enhancing environment.

Place and time

The research was conducted in urban and rural environment, during the academic year 2019/2020.

Statistical analysis

The data obtained during the research were statistically processed using SPSS software package, version 22.0 for Windows (SPSS, Chicago, IL, USA). The analysis of the attributive (qualitative) series was done by determining the coefficient of relations, proportions, and rates. Numerical series were analyzed using central tendency measures (mean, median, minimum values, maximum values, and interactive rankings) as well as dispersion measures (standard deviation and standard error). The Shapiro–Wilk W test was used to determine the correctness of the frequency distribution of the

examined variables. Non-parametric tests were used for two independent samples (Mann–Whitney U-test) and for several independent samples (Kruskal–Wallis H test). *Post hoc* – Tukey significant difference (HSD) test was used in the analysis of more than 2 numerical series. A consistent Wilcoxon test was used to analyze two dependent samples with incorrect distribution. Risk factors were quantified using probability ratios (Odds ratio – OR) and confidence intervals (CIs). A significance level of $p < 0.05$ was used to determine the statistical significance.

Results

The general characteristics of the sample referred to the urban/rural distribution, the representation of the urban or rural area in Skopje, same representation of the urban or rural schools but for the whole country, as well as the distribution by the eight statistical regions. In the sample, urban schools are 156 (48.75%) and rural 164 (51.25%). The percentage difference between urban and rural schools is not statistically significant for $p > 0.05$ (Difference test: Difference 2.5% [(−5.22–10.18) CI 95%]; Chi-square = 0.399; df = 1; p = 0.527). The urban area of Skopje covers 56 (35.90%) schools compared to 137 (83.54%) schools from other urban parts of the country. From the rural area of Skopje, the number of covered schools is 27 (16.46%), while the number of schools from other rural areas is 137 (83.54%). The representation according to the division according to the eight statistical regions indicated the following distribution: (a) 24 (7.50%) – Vardar; (b) 26 (8.13%) – Eastern; (c) 35 (10.94%) – Southwest; (d) 31 (9.69%) – Southeast; (e) 43 (13.44%) – Pelagonija; (f) Polog – 48 (15%); (g) Northeast – 26 (8.13%); and (h) Skopje – 87 (27.19%). The characteristics of the primary schools covered by the sample are shown in Table 1.

Table 1: Characteristics of the sample primary schools from Republic of Macedonia according to selected parameters

Parameters	Sample of primary schools from RM, n (%)
Total	320 (100)
Urban/rural (n = 320)	
Urban	156 (48.75)
Rural	164 (51.25)
Urban schools (n = 156)	
Skopje city	56 (35.90)
RM cities	100 (64.10)
Rural schools (n = 164)	
Skopje rural	27 (16.46)
RM rural	137 (83.54)
Statistical regions (n = 320)	
Vardar	24 (7.50)
Eastern	26 (8.13)
Southwestern	35 (10.94)
Southeastern	31 (9.69)
Pelagonija	43 (13.44)
Polog	48 (15.00)
Northeastern	26 (8.13)
Skopje	87 (27.19)

RM: Republic of Macedonia

Current situation

The evaluation of the current situation for healthy school staff in primary schools indicated the following order of performance of indicators from best to worst: U4, U6, U5, U3, U2, and U1.

The highest average score, that is, the best current situation, has the indicator/statement – U4 (2.80 ± 0.48) which refers to the fact that "The new school staff receives mentors and education that helps them in their professional development." For a total of 269 (84.06%) of the schools, this statement is fully fulfilled, followed by 39 (12.19%) with partial fulfillment and 12 (3.75%) where it is not fulfilled at all (Table 2).

The second best current situation is the U6 indicator (2.55 ± 0.57) which states that "The school supports staff in achieving and maintaining a healthy lifestyle (for example, by creating an environment that supports a healthy life)." This indicator is fully met by consistently 188 (58.75%) schools followed by 121 (37.81%) who answered that their fulfillment is partial (Table 2). For indicator U5 – "The school has a protocol for dealing with periodic staff absences as well as assisting in returning to work and re-engaging and adjusting after a period of sick leave" which is the third largest average score of the current situation for healthy school staff (2.28 ± 0.72), it is seen that in contrast to the schools with full occupancy 140 (43.75%), there is a large proportion of schools where this indicator is not established at all – 50 (16.62%). The lowest average score for the current state of healthy school staff is registered for the indicator U1 (1.99 ± 0.67) – "Our school offers regular training for teachers and capacity building related to the promotion of health and well-being of the school community" followed by indicator U2 (2.11 ± 0.68) – "There are sufficient resources for school staff to provide materials related to health topics that include mental health promotion" and U3 (2.24 ± 0.70) – "School promotes work-life balance, a reasonable workload and an open environment in which problems and stress at work can be discussed." These three indicators were not met at all by U1-73 (22.81%), U2-57 (17.81%), and U3-49 (15.31%) of the schools in the sample.

Priority

The evaluation of the priority (low, medium, and high) for healthy school staff indicated the following sequence of indicators/statements – U3 (2.52 ± 0.65), U1 (2.52 ± 0.60), U5 (2, 53 ± 0.64), U2 (2.58 ± 0.60), U6 (2.62 ± 0.60), and U4 (2.72 ± 0.62) (Table 2).

The highest priority is U4 – "New school staff receive mentors and education that helps them in their professional development" and U6 – "The school supports staff in achieving and maintaining a healthy lifestyle (for example, by creating an environment that supports healthy living)."

Table 2: Analysis of indicators for healthy school staff according to the current situation and priority

Healthy school staff	Proportion and average individual/total score							
	Current				Priority			
	Not, n (%)	Partially, n (%)	Completely, n (%)	$\bar{x}$ ± SD	Low/no, n (%)	Medium, n (%)	High, n (%)	$\bar{x}$ ± SD
U1. Our school offers regular teacher training and capacity building related to promoting health and well-being of the school community	73 (22.81)	176 (55.00)	71 (22.19)	1.99 ± 0.67	17 (5.31)	119 (37.19)	184 (57.50)	2.52 ± 0.60
U2. There are sufficient resources available to provide the school staff with up to date materials on health topics including mental health promotion	57 (17.81)	170 (53.12)	93 (29.06)	2.11 ± 0.68	19 (5.94)	97 (30.31)	204 (63.75)	2.58 ± 0.60
U3. Our school promotes a balance between work and private life, a reasonable workload and provides an open environment to discuss work problems and stress	49 (15.31)	1445 (45.31)	126 (39.37)	2.24 ± 0.70	28 (8.75)	97 (30.31)	195 (60.94)	2.52 ± 0.65
U4. New school staff at our school receive mentoring and training to assist them in their professional development	12 (3.75)	39 (12.19)	269 (84.06)	2.80 ± 0.48	29 (9.06)	32 (10.00)	259 (80.94)	2.72 ± 0.62
U5. The school has a protocol for dealing with recurring staff absenteeism and in helping returning school staff to reintegrate and adjust after a period of sick leave	50 (16.62)	130 (40.62)	140 (43.75)	2.28 ± 0.72	25 (7.81)	99 (30.94)	196 (61.25)	2.53 ± 0.64
U6. Our school supports school staff in achieving and maintaining a healthy lifestyle, for example, by creating a healthy enhancing environment.	11 (3.44)	121 (37.81)	188 (58.75)	2.55 ± 0.57	21 (6.56)	78 (24.37)	221 (69.09)	2.62 ± 0.60
Total	$\bar{x}$ ± SD = 2.33 ± 0.42				$\bar{x}$ ± SD = 2.58 ± 0.50			

SD: Standard deviation.

Consequently, 259 (80.94%)/32 (10.00%) versus 221 (69.09%)/78 (24.37%) of the schools indicated high/medium priority for them. It is noticeable that the full fulfillment of the U4 indicator is 11.85% higher than that of U6. Evaluated with a high priority of about 60% are three more indicators for healthy school staff:

- U2 – "There are sufficient resources for school staff to provide materials related to health topics that include mental health promotion" – has a high priority of 204 (63.75%), but is not a priority of 19 (5.94 %) from schools.
- U5 – "The school has a protocol for dealing with periodic staff leave as well as assisting in returning to work and re-engaging and adjusting after a period of sick leave" – has a high priority of 196 (61.25%), but is not a priority for 25 (7.81%) of the schools.
- U3 – "School promotes work-life balance, a reasonable workload and an open environment in which problems and stress at work can be discussed" – has a high priority of 195 (60.94%), but is not a priority for 28 (8.75%) of the schools.

The lowest average score for priority has the indicator U1 (2.52 ± 0.60) – "Our school offers regular training for teachers and capacity building related to the promotion of health and well-being of the school community." Only about half of the primary schools in the sample rated this indicator as a high priority, 184 (57.50%), while for 17 (5.31%), it is not of priority importance at all (Table 2).

The comparison of the average scores of the six indicators for healthy school staff according to the current situation and priority indicated that for only one indicator, the priority has a lower average score compared to the current situation for U4 "New school staff gets mentors and education that helps their professional development." Overall score for healthy school staff is analyzed in relation to four selected parameters. An analysis was made from the aspect of the current situation and the priority of this problem in the sample of primary schools (Table 3).

Table 3: Overall score for healthy school staff according to selected parameters – current situation and priority

Parameters	Healthy school staff-average total score					
	Current			Priority		
	n	$\bar{x}$ ± SD	p	n	$\bar{x}$ ± SD	p
Urban/rural						
Urban	156	2.35 ± 0.42	Z = 1.2003;	156	2.60 ± 0.51	Z = 0.7144 ;
Rural	164	2.31 ± 0.42	P = 0.2301	164	2.56 ± 0.51	P = 0.4749
Urban – Skopje/RM						
Skopje city	56	2.40 ± 0.42	Z = 1.0529;	56	2.72 ± 0.39	Z = 1.8361;
RM cities	100	2.33 ± 0.42	P = 0.2924	100	2.54 ± 0.54	P = 0.0663
Rural – Skopje/RM						
Skopje rural	27	2.40 ± 0.42	Z = 1.0996;	27	2.71 ± 0.44	Z = 1.7869;
RM rural	137	2.29 ± 0.42	P = 0.2715	137	2.54 ± 0.50	P = 0.0734
Statistical regions						
Vardar	24	2.37 ± 0.35	H = 3.7844;	24	2.29 ± 0.59	H = 20.9754;
Eastern	26	2.34 ± 0.44	P = 0.8042	26	2.47 ± 0.51	P = 0.0038*
Southwestern	35	2.31 ± 0.41		35	2.71 ± 0.35	
Southeastern	31	2.26 ± 0.53		31	2.30 ± 0.69	
Pelagonija	43	2.25 ± 0.43		43	2.24 ± 0.51	
Polog	48	2.36 ± 0.38		48	2.64 ± 0.39	
Northeastern	26	2.28 ± 0.44		26	2.64 ± 0.48	
Skopje	87	2.39 ± 0.42		87	2.71 ± 0.40	

H: Kruskal–Wallis, Z: Mann–Whitney U-test, *significant for P<0.05. RM: Republic of Macedonia, SD: Standard deviation.

The current situation as well as the priority in terms of meeting the indicators of healthy school staff is without significant difference between urban and rural schools (Mann–Whitney U-test: Z = 1,2003; p = 0,2301 vs. Z = 0.7144; p = 0.4749). The average total score for healthy school staff is significantly higher for priority compared to the current situation

individually for both rural and urban schools (Wilcoxon signed-rank test – City M/P: Z = −6.558; p = 0.0001 vs. Village M/Q: Z = −6.339; p = 0.0001) (Table 3). Urban and rural schools significantly recognize the importance of improving indicators of healthy school staff. There is no significant difference between the schools in the urban area of Skopje and other urban schools across the country in terms of current occupancy and priority of indicators for healthy school staff (Mann–Whitney U-test: Z = 1.0529; p = 0, 2924 vs. Z = 1.8361; p = 0.0663). The average total score for healthy school staff is significantly higher for the priority compared to the current situation individually for the two groups of schools (Wilcoxon signed-rank test – City M/P: Z = −6,339; p = 0.0001 vs. Village M/P: Z = −5.231; p = 0.0001) (Table 3). The schools from the rural area of Skopje compared to the schools from other rural areas do not differ significantly in terms of the current situation and priority of the indicators for healthy school staff (Mann–Whitney U-test: Z = 1.0996; p = 0.2715 vs. Z = 1.7869; p = 0.0734) (Table 3). The average total score for healthy school staff is significantly higher for the priority compared to the current situation individually for the rural area of Skopje and for other rural schools across the country (Wilcoxon signed-rank test – Skopje village M/P: Z = −2.595; p = 0.009 vs. RSM village M/P: Z = −5.845; p = 0.0001). There is a significant recognition of the priority of improving the indicators for healthy school staff in both groups of rural schools. There is no significant difference between the eight statistical regions in the average total score of the current situation for healthy school staff (Kruskal–Wallis: H = 3.7844; p = 0.8042). Insignificantly, the best current fulfillment of the indicators is registered in the Skopje region (2.39 ± 0.42) and the Vardar region (2.37 ± 0.35), and the worst fulfillment is in the Pelagonija region. The analysis of the overall score for priority of the indicators for healthy school staff did not indicate a significant difference (Kruskal–Wallis: H = 20.9754; p = 0.0038). Significantly highest average overall score for priority was registered in Skopje (2.71 ± 0.40) and Southwest region (2.71 ± 0.35). In the Pelagonija and Southeast region, where the worst current situation is registered (2.25 ± 0.43 vs. 2.26, 5.0.53); at the same time, it is registered and significantly lower priority compared to all other regions (2.24 ± 0.51 vs. 2.30 ± 0.69). According to the multiple regression analysis, the three parameters together affect the variability of the total score of healthy school staff for: (a) Current situation with 0.07% (R2 = 0.007) [F (3.316) = 0.718]. For p < 0.05, the parameter statistical region was determined as an independent significant predictor, which independently affects the variability of the total priority score for healthy school staff by 0.43% (R2 = 0.043).

Discussion

The approach to health-promoting schools has been adapted in many European countries, including Australia, New Zealand, the United States, and Canada, and more recently, the “whole school, whole community, whole child” model has been used. While countries may differ in nomenclature and structure to varying degrees, similar principles of support apply to all, and the World Health Organization’s definition of a School of Health Promotion characterizes them as “a school that continually strengthens its capacity as a healthy environment for living, learning, and working” [8]. Regarding the analysis of the last part from the questionnaire healthy school staff, it can be seen that in relation to the current situation in the schools in Republic of Macedonia, a lot of attention is paid to the new school staff receiving mentors and education that will help them in their professional development. This indicator is also the most important priority for most of the schools. There are not enough resources to provide school staff with materials related to health topics in which include the promotion of mental health. However, the fact that many schools identify this as a problem and a shortcoming and want to improve these facilities in the future is gratifying. The lack of health topics related to the promotion of mental health among school staff is also reflected in the research on Teacher Health conducted by German teachers. In this research, several international scientific papers were analyzed and it was concluded that teachers have a healthier lifestyle and less cardiovascular diseases, but teachers are most pronounced mental and psychosomatic diseases such as exhaustion, fatigue, headache, and tension. According to this research, 3–5% of teachers suffer from “burnout.” A high percentage of German teachers retire prematurely due to mental and psychosomatic illnesses, accounting for 35–50% of cases [9]. Teachers and other education staffs emphasize that training is crucial so that teaching can be conducted in a variety of educational settings without discrimination on any ground [10]. Regarding the total score for healthy school staff that is analyzed in terms of four selected parameters (urban/rural, Skopje in relation to other cities throughout RM, Skopje villages in relation to all others, as well as the division by statistical regions), there are no significant differences. In general, the indicators for healthy school staff have a low full fulfillment, and at the same time, a small part of them recognize this as a priority problem that they would work on. It can be concluded that in RM, very little attention is paid to the health of school staff, it is considered more as an individual obligation of each teacher, and not as a whole on which the whole school should work together, pay attention and is promoted. When school staff health improves, there is improvement in productivity and performance [11]. For example, one study found that school staffs who met the recommended levels of

exercise, sleep, and fruit and vegetable intake reported higher job performance and fewer absences [12]. In another study, employees did not make any changes to their health – they had lower levels of job success [13]. It is easier for people to make healthy choices when the environment around them supports them. For example, school staffs are more likely to eat a healthy and nutritious lunch if they have the opportunity to provide it at their school workplace [14], [15], [16].

Conclusion

Building a school culture is a key to effective, sustainable change in children's behavior. To work on this, teachers need school leaders and appropriate measures which will contribute to the promotion of health in the school environment, both for students and for school staff.

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