Health Literacy at the Elementary School Level

Almut Krapf

Department of Primary and Pre-primary Education Didactics of Physical Education, University of Leipzig, Leipzig 04317, Germany

Abstract: Health literacy measures are well established in school. Nevertheless, the differences between the offers are immense. From individual days for projects to comprehensive programs and codes of practice, such as good healthy school, one can find a broad range of measures in German school settings. Current research results also show that “school” can be a decisive factor to undermine the psychosocial well-being of teachers, students and other school staff. In this contribution, approaches to health promotion and health literacy in elementary schools are presented from different perspectives, which show that the competence modeling for health literacy in elementary schools remains to be investigated. This contribution introduces approaches to health promotion and health literacy, which are relevant for the school setting at the elementary level, from different perspectives.

Key words: Health promotion in school, health literacy, sports related health literacy, mindfulness.

1. Healthy School

Today, school is ascribed a significant value as a space for living and learning for children, as can be seen in the rise in offers of full-time day schools. The increase in social and life skills during childhood is of special preemptive significance to prepare for adolescence with its high range of challenges and risks [1]. Therefore, the establishment of health-promoting and preventive offers is a significant work task for various professional profiles related to schools and education. School as the place where children and adolescents spend most of their time has a considerable responsibility to provide them with a learning environment that promotes health. According to the definition of the World Health Organization (WHO), health does not only include physical health and the absence of physical afflictions and diseases, but also psychosocial well-being. Nevertheless, as a physical component, motoric performance is considered an important resource for health, not only in childhood and adolescence. Survey articles show that the motoric system of children deteriorated by about 10% between 1975 and 2006, however, no representative longitudinal studies were available to date. In the meantime, the nationwide study on child and adolescent health KiGGS (Kinder- und Jugendgesundheitsurvey (Survey on Child and Adolescent Health)) [2], which measures the motoric performance of children and adolescents in a substudy, provides first long-term data. The results of this MoMo-study (Motor skills-Module) are based on nationwide analyses of children and adolescents between the ages of 4 and 17. The data were collected from 2003 to 2006 (initial survey) and from 2009 to 2012 (wave 1). In the course of the study, the kids for instance had to hop, jump, sprint, balance, do push-ups and walk backwards. In total, the results of nearly 5,000 children and adolescents from all over the country are available. They show a slight upward trend in motoric performance in the second survey period [3]. In addition, the BELLA study raised the psychosocial dimension of health in the context of the initial survey of KiGGS. For this purpose, the mental health of children and adolescents in Germany was determined with the help of questionnaires. The results of the BELLA study indicate that 22% of children between the ages of 7 and 14 feature psychological irregularities [4]. With the data from the first follow-up survey (KiGGS wave 1) concerning psychological
irregularities and psychosocial impairments of children and adolescents aged between 3 and 17 years, the research group of Hölling, Schlack, Petermann, Ravens-Sieberer and Mauz [5] states that (in contrast to motoric performance, which shows a slight tendency towards improvement), “all in all, there is no significant change in the frequency of psychological irregularities in the course of time” [5]. With regard to the way children experience stress in the present time, Kaltwasser [6, 7] assumes that kids are exposed to more stressors and external stimuli today and, in turn, they are lacking in the appropriation of adequate coping strategies. “Today, stress is one of the most common terms when it comes to identifying conditions that are detrimental to well-being” [8]. Even though an elevated level of stress may be present, it might not be significant enough to be recorded as a psychological irregularity or a psychosocial impairment. Therefore, with regard to primary prevention the question arises, whether it is much more sensible to detect the experience of stress at an early stage and intervene before it turns into a conspicuity or impairment. “Much of what was formerly rendered in parents’ houses, has been assigned to schools nowadays”, says Kaltwasser [6]. Furthermore, she claims “[…] that many students do not possess an impulse control adequate for their age […]”, and that they are “[…] put under stress […] by an armada of external stimuli” [6]. The dilemma that school can be a source of afflicting situations and stress perception while at the same time committing itself to health promotion and preservation is a major challenge, both in scientific and in school practice.

2. Health Promotion at School

With the publication of the national health goal of 2010 “Growing up healthily—Life Skills, Exercise, Nutrition” (Federal Ministry of Health), health promotion and health care programs have increasingly been introduced into schools and are anchored in different ways within school settings [9]. The prevention legislation (Präventionsgesetz) [10] adopted in 2015 is another milestone to further expand primary preventive measures. It calls for health promotion to take place directly in the living environment, whereby “living environment” is delineated as social systems “of living, learning, studying” in the legal text [10]. School as an institution is therefore only mentioned indirectly. In 2012, the Standing Conference of Ministers of Education and Cultural Affairs also advocated health promotion and prevention in school. School as an institution is ascribed a tremendous responsibility to fulfill the statutory mandate and to provide the target group of children and adolescents with health education and training—which, de facto, mainly takes place in physical education classes. Health is addressed and accentuated differently in the curricula of the states, usually inaccurately defined, and often restricted to the topics of healthy diet and exercise. Here, too, the subject physical education plays a dominant role in health promotion. Dadaczynski et al. [9] set out the development, implementation and challenges of health promotion in school and include both child and adolescent health as well as teacher health in their contribution. For the past decades, the researchers have identified two different currents within the framework of health promotion in school—one aimed at persons and their behavior, the other focused on school as a system and its development. Combining these approaches appears to be a worthwhile task with regard to a holistic approach to health promotion in school settings. Recent studies (KiGGS and HBSC—Health Behavior in School-aged Children) point to a “shift of the spectrum of diseases”. According to the researchers, the spectrum today is “less characterized by somatic and acute, but rather by chronic and mental illness” [9]. In conclusion, the potential of psychosocial well-being with regard to health promotion should be given more attention, also in the health competency modelling for the elementary sector, which is still pending. Even though it is undisputable that “even if they are consistently designed as preventive training, three
hours of physical education per week [...] cannot provide for the movement stimulus that young people enrolled at school need to maintain their health” [11]. The potential health effects of sports classes are often listed in order to legitimize them, although there are no comprehensive evidence-based findings [12]. On the one hand, due to the complexity of health as a concept, the methodical approach as such is difficult. On the other hand, effects can hardly be attributed to physical education classes at school alone. “Nevertheless, a classic and central task of physical education at school is to promote the health of the students” [13]. Accordingly, the basis for health promotion in educational institutions can be found in sports pedagogy research. For example, the text collection on health promotion in school sports by Balz, Erlemeyer, Kastrup and Mergelkuhl [14], which Knoll, Fessler and Müller [15] summarize as follows in their review:

“Central topics of health promotion in school sports such as e.g. teaching health interdisciplinarily in different subjects are discussed and precise practical examples for the implementation of health promotion are presented in the field of action (e.g. health in school life). The volume shows that the perspective of health is not only an indispensable point of view at the teaching level, but also a significant facet of curriculum and school development (see also Volkmann, 2015).”

The heterogenous structures as well as the difficulty to compare health promoting measures, are, on the one hand caused, by the sovereignty of the federal states in the development of schools, on the other, by the fact that health promotion is “stipulated to varying degrees, and in part quite generally, in the school laws of the federal states” [9]. Collaborations with external partners in health care, such as health insurance funds, tend to occur only temporarily. In addition, the various measures to promote health in the school contexts are “diverse and nontransparent” [9], inconsistent and not sufficiently tested on the empirical level. One challenge to overcome is the lacking consensus on the notion of health, as well as a sustainable theoretical concept for health competence during childhood. According to the definition of the WHO, where “social well-being” plays an essential role, one must question the extent to which this holistic psychosocial aspect is taken into account in school development. According to the Austrian “Health Behavior School-aged Children Study”, school quality is a decisive factor when it comes to subjective health [16]. The researchers analyzed 324 schools with regard to structural quality (infrastructure) and process quality (participation, social climate). They state that school has a partial impact on subjective health, the physical and psychological level of complaints, and the educational success of students. Paulus and Witteriede [17] note that only 14% of all schools in Germany programmatically pursue a holistic approach for health promotion at school. There are few practical examples, in which within the context of health promotion not only physical fitness, but also psychosocial well-being is included. Paulus [18] criticizes the lack of consideration of the findings on a health-promoting school within the pedagogical discussion about the reform of school. The goal of the concept of a health promoting school [18] is to help shape the process of school development and thus, to create a setting that promotes or maintains a framework for health based on the workplace. So far, the integration of health topics by the Standing Conference of Ministers of Education and Cultural Affairs applies to addiction prevention, the promotion of life skills, nutritional education as well as education in and promotion of movement, whereby the success of elementary prevention offers and measures is rarely evaluated. One challenge is the lack of translation of health-related terms into concepts that can be used in education. Furthermore, it has to be possible to test them in their development and put them into long-term practice [19]. In contrast to the work sector, where concepts, programs and collaborations with health insurance funds have been increasingly promoted and established within the framework of occupational health and safety (BGM) in the last few
years, evidence-based health care measures in school settings are still at the very beginning.

3. Health Literacy in Childhood

In the course of the paradigm shift in the context of educational policy from input-output control towards an orientation on competences, different research flows deal with the modelling of specific competency models, which provide the basis for evidence-based research. According to Weinert [20], competences are the abilities which allow individuals to solve certain problems. Those competences are either already available to or can be learned by the individuals and, in addition, are associated with the motivational, volitional, and social readiness and ability to use problem solutions in variable situations. Although different research disciplines pursue health promotion, the development of a competence model for health literacy at the elementary school level is still pending. Under this assumption, three concepts are presented in the following, which approach competences in the context of health from different perspectives: (1) health literacy, (2) sports-related health literacy, and (3) mindfulness.

3.1 Health Literacy

The coping strategies that children choose to deal with school requirements and burdens are as complex as the feeling of stress itself. Resource-oriented approaches, concepts for resilience, but also more recent approaches to “health competency” address the question of which conditions are decisive for children to develop in a healthy manner. In the current debates in politics and society, more and more voices call for a reform of the German school system. An example is the clear demands of the petition Children’s well-being against school stress in Saxony—learning bulimia? No, thank you, which 794 citizens signed. Even if this appeal appears to be just a drop in the ocean, it should be taken into account for school development, especially when it comes to teaching competences that are beneficial to health, and to promote the development of adequate stress resistance. The concept of health competence is at the forefront. The term “Health Literacy” (HL) has also prevailed in German-speaking countries.

“Health Literacy’ [comprises] the necessary knowledge, motivation and competences people use to find, understand, evaluate and apply relevant health information in a variety of ways, in order to make decisions in everyday life concerning disease management (health care), disease prevention and health promotion that preserve or improve their quality of life throughout their life.” [21]

In its paper on “Health Literacy in Childhood and Adolescence” (“Health Literacy im Kindes- und Jugendalter”) the research association (HLCA-Forschungsverbund) around Zamora et al. [21] for the first time describes an interdisciplinary approach for the modelling of a health competence model specifically for children and adolescents. The research group is taking the desideratum that there are no “age-specific explanatory models and data, and thus, no basis for evidence-based interventions for the improvement of HL and health outcomes for children and adolescents” [21]. Regarding HL in the adult age, Germany has an average performance: “Low HL is, among other factors, associated with a reduced use of curative offers” [21] and further it is

“[...] plausible to assume that the reported barriers [author’s note: e.g. navigation of information systems, conducting doctor-patient interviews] to the usage [author’s note: unfortunately] have to be regarded as effective not only in the context of health care but also in the field of health promotion and elementary prevention” [21]

To date, research on HL has mainly focused on adulthood, while childhood and adolescence as phases of life are considered of central importance for “health development” and “the sustainability of offers for prevention and health promotion” [21]. The development or modeling of a health competence
model for childhood (i.e. the elementary school level) would provide a basis to introduce evidence-based findings concerning a health-promoting environment in the further school development (also on the political level).

3.2 Sports-Related Health Literacy (SHL)

There is a research branch in sports pedagogy, which deals with health literacy in childhood. The construct of “competences taught in physical education” [22] and the subsequent competency modelling of sports-related health literacy [23] “[…] make the competences taught in sports lessons tangible in theory-based models and verifiable by means of suitable test methods” [23]. Töpfer and Sygusch [23] take the following definition of sports-related health competence (SHC) as a basis for their model design for health literacy in physical education:

“Sports-related health literacy is comprised of the totality of the knowledge, skill and willingness students must have at their disposal in order to act in such a way in physical education for sports to have a positive effect on health.”

The order grid in Fig. 1 shows the dimensions of the decision-making and responsibility:

For the model design the authors give an “Overview of the content-related intersections of the conceptual derivation of sports-related health literacy from the following theoretical approaches: (1) Discussion on health in sports pedagogy (health-related capacity to act), (2) health-scientific discussion (health literacy in the sense of the public health approach), and (3) discussion on competence in the field of educational research (decision-making and responsibility in the sense of a broad concept of competence)” [23].

Balz warns, however, that on the one hand the health perspective “should not be too much in the center” and refers to the achievement-orientation in physical education.

**Fig. 1** Order grid for a model design for sports-related health literacy and important related areas [23].

![Diagram of Sports-related Health Literacy](image-url)
during the 70s, on the other hand, the health perspective should “not be narrowed to test- and measurable aspects of physical health, that is, fitness” [23]. Furthermore, the (1) development and (2) assessment of competences are still to be ascertained at the elementary school level.

3.3 Mindfulness

Mindfulness as an attitude at school has particular potential when it comes to cultivating health-promoting competences. Acquiring rational, analytical knowledge is still a priority in the current school system. Feelings and emotions are seen as “irrelevant’ aspects to be overcome [6], which are “assigned to the subjects of German, art and religion in the sense of a division of labor”, whereas “physical education is responsible […] for the body” [6]. However, findings in brain research show that physical and mental processes are closely interwoven and, consequently, can have reciprocal effects on learning. Studies show that knowledge is not preserved as well under pressure and stress as it is outside of performance situations [24, 25].

With regard to preventive health promotion, the subjective perception or subjective health definition is considered to be the most important factor when it comes to the conceptual design of intervention programs. For adolescent girls, aspects of “well-being” tend to play an important role, whereas adolescent boys often focus on “functionality” [26]. While adolescents’ views on subjective health definitions have already been researched, findings for childhood in this context are rare. With regard to psychosocial wellbeing, however, there are studies that uncover processes of disregard in physical education [27], which indicate negative psychosocial well-being. Kaltwasser postulates:

“School cannot “only” take care of students’ knowledge in the rational area, because this area can only be successfully developed, if the student’s entire personality is involved. And this, after all, includes his or her emotions and body.” [6]

Mens sana in corpore sana!—The approach in which learning is based on the inclusion of the triad of body, mind and soul is not new. Nevertheless, it is criticized that the findings are insufficiently integrated into the design of everyday school life. Kaltwasser [6] puts this in a nutshell in the following example:

“You ask the students how they are doing?”, a flabbergasted colleague asks the peer who allows his students to take turns expressing their mental state at the beginning of some classes. “But school isn’t therapy”, is often added skeptically. What counts are the numbers, the report cards, the calculable knowledge, which can later be exchanged for wages and salaries in professional life. […] The more the pressure grows, which comparative studies (Vergleichsarbeiten) and the central examinations to enter university (Abitur) put on teachers and pupils, the more replete the curriculum, the louder get the voices who remind us that besides all the efforts to evaluate and collect data on quality development, it must not be forgotten that creativity and zest to experiment, sensuality and pleasure cannot be measured easily, but provide the ground for successful learning. It is clear that schools will have to assume tasks in the future, which they did not fulfil up to now” [6]

Amberg [28] depicts mindfulness in the face of research and notes that many neuroscientific studies have been published in recent years, dealing with the effects of mindfulness and meditation on the brain [29, 30]. However, it remains questionable whether randomized controlled trials can be extended to holistic systemic approaches [31]. Furthermore, approaches that combine both body and mind in school settings are rare. Established and evaluated programs are, for example, Good Healthy School (Gute gesunde Schule) [18], Mind Matters [32] or Mindfulness at School (Achtsamkeit in der Schule) [6], as well as unpublished projects (e.g. Happy Panda Project—Mindfulness Training for Children). Among other things, these approaches allow an access to cognitive, emotional,
and volitional factors, and promote a holistic approach, which focuses on the perception of body and mind as a unit. This approach seems unavoidable to the author when it comes to modeling health literacy at elementary school level.

4. Preliminary Conclusion & Outlook

With regard to health competences at the elementary school level, respectively, health literacy and the modelling of competence models for this area, research is still at its very beginning. In this article, different perspectives on health and school were used and the potential of a holistic approach to further research—especially for the elementary school level—was shown. With regard to preventive health promotion, the subjective perception or the subjective definition of health is one of the most important building blocks when it comes to designing competence models in the elementary school sector and the consequential development of intervention programs. Aspects of “well-being” more often play a role for female adolescents, whereas male adolescents tend to focus on “functionality” [26]. While adolescents’ views on subjective definitions of health have already been empirically researched, findings for childhood in this context are rare.

In a current study by the author on stress, health and sports from the perspective of elementary school students, \(N = 56\) elementary school students were, inter alia, asked about their individual implications for stress, health and sports via guided interviews. The central questions are: (1) What does stress mean to you? (2) What does health mean to you? and (3) Does sport have anything to do with health? Further control questions led the children to dive into deeper narrations. The aim of this exploratory study is to assess, which meaning the term “health” has for children in elementary school. Another goal is to clarify whether children in elementary school already establish a link between health and exercise and if so, how they construct this connection. First, to be able to draw possible parallels to research on adolescents in this context. Second, to get first results on children’s perspectives, which are essential for the design of a sports-related health competence model for the elementary school level. This model would also be an important basis to be able to conceptualize health-promoting competencies—not only in physical education. First results show that elementary school students are aware of the link between sports and health. Furthermore, they consistently make statements on exercise and nutrition in their narratives. In only five cases, the children included psychosocial well-being in their definition of health [33]. Raising the children’s awareness for the psychosocial dimensions of primary prevention should be taken into account for the design of a competency model for the elementary school sector.

References

[1] Hurrelmann, K., and Baumann, E., eds. 2014. Manual Health Communication. Bern: Verlag Hans Huber. (in German)
[2] Bös, K., Worth, A., Opper, E., Oberger, J., and Woll, A. 2009. Motor Module: A Study on Motor Performance and Physical Activity of Children and Adolescents in Germany. Final report of the Research project. Forschungsreihe Band 5 (1. Auflage). Baden-Baden: Nomos. (in German)
[3] Albrecht, C., Hanssen-Doose, A., Bös, K., Schlenker, L., Schmidt, S., Wagner, M., Will, N., and Worth, A. 2016. “Motor Performance of Children and Adolescents in Germany.” Sportwissenschaft 4: 294-304. (in German)
[4] Ravens-Sieberer, U., Wille, N., Bettge, S., and Erhart, M. 2007. “Mental Health of Children and Adolescents in Germany.” Bundesgesundheitsblatt-Gesundheitsforschung-Gesundheitsschutz 50 (5): 871-8. (in German)
[5] Hölling, H., Schlack, R., Petermann, F., Ravens-Sieberer, U., Mauz, E., and KiGGS Study Group. 2014. “Mental Saliences and Psychosocial Impairment of Children and Adolescents in the Age of 3 to 17 Years in Germany—Prevalence and Temporal Trends of 2 Inquiries (2003-2006 and 2009-2012).” Bundesgesundheitsblatt-Gesundheitsforschung-Gesundheitsschutz 57 (7): 807-19. (in German)
[6] Kaltwasser, V. 2008. Awareness at School. Calm-Islands in Class. Beltz: Weinheim und Basel. (in German)
[7] Kaltwasser, V. 2016. Practical Book. Awareness at School. Selfregulation and Relational Ability as Base of Education. Beltz: Weinheim und Basel. (in German)
[8] Ahnert, L. 2010. How Much Mother Does a Child Need.
Health Literacy at the Elementary School Level

Bond-Education-Care: Public and Private. Heidelberg. (in German)

[9] Dadaczynski, K., Paulus, P., Nieskens, B., and Hundeloh, H. 2015. “Health in Context of Education and Educating—Development, Implementation and Challenges of Educational Health Promotion in Germany.” Zeitschrift für Bildungsforschung 5 (2): 197-218. (in German)

[10] Federal Law Gazette. 2015. Law for Reinforcement of Health Promotion and of Prevention. (Präventionsgesetz - PrävG) vom 17. Juli. Accessed September 27, 2017. https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBI&jumpTo=bgbl115s1368.pdf (in German)

[11] Kurz, D. 2000. “Educational Gym Class: How University Can Prepare Thereon.” In Schulsport auf neuen Wegen. Herausforderungen für die Sportlehrerausbildung, edited by Beckers, E., Hercher, J., and Neuber (Hrsg.), N. Butzbach-Griedel: AFRA, 36-53. (in German)

[12] Prohl, R. 2011. “About the Potential of Education in Gym Class.” Education in Sports 165-78. (in German)

[13] Balz, E. 2016. “Contributions of Sports towards Health.” In Gesundheitsförderung im Schulsport. Grundlagen, Themenfelder und Praxisbeispiele, Aachen: Meyer & Meyer, 28-37. (in German)

[14] Balz, E., Erlemeyer, R., Kastrup, V., and Mergelkuhl, T. 2015. Promotion of Health in Gym Class: Essentials, Topics and Practical Examples. Meyer & Meyer Verlag. (in German)

[15] Knoll, M., Fessler, N., and Müller, M. 2016. “Effects of Physical Activity on Health—Review of German-Speaking Publications in Years 2012-2015.” Accessed September 27, 2017. https://www.sport.kit.edu/rd_download/Personal/Review%20GUS%202016%20Knoll%20Fessler%20M%C3%BClle%20Teil%202%20deutsch.pdf. (in German)

[16] Griebler, R., Dür, W., and Kremser, W. 2009. “Quality of School, School Success and Health. Results of the Austrian ‘Health Behaviour in School-Aged Children’-Study.” Österreichische Zeitschrift für Soziologie 34 (2): 79-88. (in German)

[17] Paulus, P., and Witteriede, H. 2008. School-Health-Education: Balance and Perspectives. Dortmund: Bundesanstalt für Arbeitsschutz und Arbeitsmedizin. (in German)

[18] Paulus, P. 2003. “Educational Promotion of Health—Placed from Head to Foot. From the Health-Promoting School to a Good Healthy School.” In Health-Promoting School—An Utopia. Arau: Sauerländer, 93-114. (in German)

[19] Kolip, P., Ackermann, G., Ruckstuhl, B., and Studer, H. 2012. Promotion of Health in a Systematic Way. Quality Development in Projects of Promoting of Health and Prevention. Bern: Huber. (in German)

[20] Weinert, F. E. 2001. “Comparative Assessments in School—A Controversial Self-evidence.” In Leistungsmessungen in Schulen. Beltz, 17-32. (in German)

[21] Zamora, P., Pinheiro, P., Okan, O., Bitzer, E. M., Jordan, S., Bittlingmayer, U. H., and Bauer, U. 2015. “Health Literacy in Childhood and Adolescence.” Prevention and Promotion of Health 10 (2): 167-72. (in German)

[22] Gogoll, A. 2014. “The Model of Sport- and Movement Competencies and Its Implication for Tasks in Gym Class.” In Aufgabenkultur im Sportunterricht. Wiesbaden: Springer Fachmedien, 93-110. (in German)

[23] Töpfer, C., and Sygusch, R. 2014. “Health Literacy in Gym Class.” In Aktiv und Gesund? Wiesbaden: Springer Fachmedien, 153-79. (in German)

[24] Arnold, D. 2017. Challenge School: What Does Movement Deal with Successful Learning? BoD-Books on Demand. (in German)

[25] Roth, G. 2017. “How Does ‘hirngerechtes’ Teaching and Learning Look?” Padua 12 (3): 163-5. (in German)

[26] Kolip, P. 2000. “Subjective Definition of Health in Adolescent: Sexual Dimorphism and Coherences to Health Relevant Behaviour.” Zeitschrift für Gesundheitspsychologie 8 (4): 180-9. (in German)

[27] Grimminger, E. 2012. “Processes of Recognition and Contempt in Gym Class.” Sportwissenschaft 42 (2): 105-14. (in German)

[28] Amberg, M. 2016. “Awareness in View of Research.” In Führungs- und Achtsamkeits. Wiesbaden: Springer Fachmedien, 35-9. (in German)

[29] Singer, T., and Bolz, M., eds. 2013. Compassion: In Daily Routine and Research. Leipzig: Max-Planck-Institut für Kognitions- und Neurowissenschaften. (in German)

[30] Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., and Ott, U. 2011. “How Does Mindfulness Meditation Work? Proposing Mechanisms of Action from a Conceptual and Neural Perspective.” Perspectives on Psychological Science 6 (6): 537-59.

[31] Nitsch, M., and Waldherr, K. 2011. “Evaluation of Health-Promoting Schools.” Prevention and Promotion of Health 6 (4): 249-54. (in German)

[32] Dadaczynski, K., Witteriede, H., Nieskens, B., and Paulus, P. 2015. “Holistic Quality Development of Psychosocial Health Promotion. The Program MindMatters.” Prevention and Promotion of Health 10 (3): 247-52. (in German)

[33] Krapf, A. 2016. “Health and Sports from the Perspective of Elementary School Children.” Presented at the 2016 International Wingate Congress of Exercise and Sport Sciences, June 2-5, 2016 at the Academic College at the Wingate Institute, Netanya, Israel.