



Teachers' Practices Related to Health Education in Moroccan Schools

**Sabah Selmaoui^{1*}, Abdelaziz Razouki¹, Boujemaa Agorram¹,
Salah-Eddine Khzami¹ and Mustapha Arfaoui¹**

¹*Research Team in Education and Training (EREF), Ecole Normale Supérieure, Cadi Ayyad University, Marrakech, Morocco.*

Authors' contributions

This work was carried out in collaboration among all authors. Author SS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors SS, AR and BA managed the analyses of the study. Authors SS, SEK and MA managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

In this study, we are interested in teachers' practices related to health education (HE) in school. In our survey, we used a questionnaire as an investigative tool with a sample of 300 teachers from three levels of education: Primary, middle and qualifying high schools. According to the teachers' statements, our study reveals that the majority practice HE in class despite having no training in this area. They generally practice it in a thematic approach that is limited to pedagogical sequences within the framework of the program. In addition, it appears that teachers' training and seniority have a positive effect on their practice and the self-assessment of their competence in this area. This study also suggests that a school's lack of openness with the family and other external partners. These factors constitute some of the main obstacles that prevent the implementation of HE in class, in addition to training, lack of time and lack of adequate teaching materials.

Keywords: *Health education; school; teacher; practices.*

*Corresponding author: Email: sselmaoui@gmail.com, sa.selmaoui@uca.ma;

1. INTRODUCTION

In our country, young people between 12 and 24 years old constitute about one-fifth of the population [1]. This age group certainly has a promising future, but it is vulnerable to different threats (e.g., alcohol, drugs, tobacco, STIs/AIDS, bad eating habits, violence, dropping out of school). This group of adolescents could be at high risk for a significant health deterioration, something that should be taken into account by educators [2]. In addition, it experiences tremendous disruptions, including economic, social and cultural changes implicated by globalisation. This generation has thus been proven to be sensitive to determinants of health. Now is the right time to engage young people in actions to preserve and even improve their health.

If health is a determining factor of individuals' personal growth and wellbeing, it is therefore necessary to devote even greater resources to care services that have proven insufficient in improving a population's health status. It is essential to implement early educational actions to address dangerous behaviours. In fact, young people and adolescents' urgent need for health education (HE) has been identified in studies and surveys at national and international levels [3-16] among others.

When we discuss educational actions, we think about HE in school. As the second-most influential environment after the family, the school is the best anchor for effective interventions. Both environments work together to form a health approach that allows both the acquisition of skills favourable to health and the creation of an environment that is conducive to their implementation. The school is the ideal place to promote health via programs and educational health actions in the formal sector (class, school) as well as in the non-formal sector (e.g., health clubs, associations). Therefore, it must provide students with objective information and knowledge that can help them better understand psychological, emotional, social and common values. Its mission is to teach, educate and ingrain behaviours of responsibility in students. In particular, school plays a specific role, complementary to that of families, in the individual and social shaping of children and adolescents and in their preparation for future adult life. The goal of this education is not only the transmission of knowledge (scientific notions) but also the inculcation of attitudes (e.g.,

awareness, respect, responsibility) [15]. The HE we conceive of should not only inform young people about the dangers of certain lifestyles or behaviours, but should also instill healthy attitudes and behaviours [17,18].

Therefore, it is imperative that the school system, in collaboration with parents, communities and health professionals, play an important role in educational efforts and the promotion of health. HE needs to be implemented early in primary and secondary school because prevention is effective and can help learners adopt healthy behaviours while curbing their innocent curiosity (e.g., the desire for the first cigarette in children, first sexual intercourse) [19]. HE activities at school can be implemented using a multidisciplinary approach that takes into account teacher availability and timetable constraints [20].

He is a part of education in general because it has the same characteristics and requires learners' active participation [21]. For many years, public health data sources have advocated for the development of prevention and HE [3,22-25]. Many research studies have highlighted the role of schools in improving the health of populations [26] and in guiding students towards freedom and responsibility regarding health concerns.

Indeed, the school is one of the main places for prevention and HE. However, it must be emphasised that the school is not a public health institution. Its mission is not to influence health indicators but rather to act in complementarity with other social structures involved in HE. In this way, the school could help prevent young people from committing suicide or falling into the drug trap, and instill in them the rules of food hygiene that can save them from obesity, diabetes and help protect them from STIs [15].

The school is therefore a privileged place for public health strategies; it is a place for young people (children and adolescents) who are the target of many actions and a place to reach as many people as possible. Those children and adolescents can in turn spread this information to a wider audience (Moroccan pedagogical guidelines, 1979) [27]. The school is thus an environment to implement preventive initiatives that focus on specific themes concerning young people, offering them the means to avoid risky behaviours and adopt healthy ones that fully legitimise the school's role. The school is called upon to contribute to public health because it

participates in social change and the standardisation of behaviour projects aimed at reducing health expenditures [7]. This is all the more true as the school is one of the tools available to the government to implement its policies, particularly its public health ones.

Moreover, a policy already exists to develop HE in the Moroccan school system starting in kindergarten (Education and Training Charter, 1999) [28]. Curriculum and syllabus analysis shows that HE is a significant part of the missions assigned to the school system, and it has been integrated into school curricula since primary school, as was advocated by the last major reform of the educational system. Indeed, HE was one of the most prioritised issues of this reform. Thus, educational objectives related to this goal were developed in order to build solid foundations, develop behaviours and build values according to a constructivist approach.

Our studies have shown that HE is present in almost all Moroccan textbooks in the form of texts and images [11,29,30]. It is perceived especially in a physiological dimension; textbooks are particularly rich in sentences that fit into the pathological biomedical approach. Attention is given to diseases (pathogens, modes of contamination, symptoms, treatments, prognosis, prevention), especially in secondary school textbooks. On the other hand, primary school textbooks are more closely associated with the health promotion approach; thus, they focus on good health and healthy habits and behaviours of students [11,29-32].

Genuine HE involves teachers who play a key role in raising awareness among young people. Indeed, because of the mission assigned to them in their training, teachers are privileged actors in the prevention of and fight against certain risky behaviours in schools. The teacher is a main actor in educational action whose role must be considered in the choice of the content to be taught. He is one of the central elements in the process of the didactic transposition of this knowledge and can influence students through his beliefs, values and practices, which are in perpetual interaction [33]. The teacher does not transmit knowledge passively, but no doubt a number of the pedagogical choices he makes are shaped by his ideas regarding the content and the methods he uses in teaching [34].

Scientific works [35] have shown that some pedagogical practices are effective, while others

are not. Identifying the nature of the impact of teaching practices thus represents a major educational challenge and involves studying the impact of the context in which teachers operate and identifying the elements that interact with learning in the field of health, in particular to model the phenomena related to the teachers' role [15].

Indeed, Altet [36] has defined professional or teaching practices as a person's special way of doing things; his actual, way of performing a professional activity: Teaching or 'teaching skills'. Teaching practices are not limited to activities inside the classroom and indeed depend on constraints outside it: The syllabi, the school rules, equipment constraints such as location, the didactic material and also the relations among the pedagogical staff as well as those established with the students' parents. It is therefore difficult to describe and analyse professional practices.

He is present in our daily lives and curricula and treated in programs and textbooks, but how is this education practiced in the classroom?

This leads us to wonder how teachers conceive of their role in this education; how do they practice it?

The objectives of this study are therefore:

- To account for and understand the variability of professional practices in HE in Morocco
- To elucidate the difficulties in establishing HE in Moroccan schools.

This work aims to describe reality and highlight the relevance of various approaches in order to suggest trainings in HE.

Our research questions are:

- What are teacher practices in HE?
- What challenges confront its implementation in schools?

2. MATERIALS AND METHODS

This paragraph describe the methodology adopted in this study. As teachers are the main actors in the school system and can influence learning through their beliefs and practices, both subjects merit analysis.

2.1 Description of the Sample

The sample, chosen randomly, consists of 300 teachers working in three levels of public institutions: 100 in primary schools, 100 in middle schools and 100 in qualifying high schools in different regions of Morocco. The sample consists of 48% women and 52% men (see Table 1). Junior and qualifying teachers are teachers of natural sciences. Our choice to work with elementary, middle and high school teachers is justified by the fact that HE is provided from elementary to secondary school, as mentioned in the previous chapter, and our objective is to compare the beliefs and practices of teachers according to their teaching level, level of education and training.

With regard to teacher training, for each level, the majority of teachers (91%) had training in appropriate centres.

The study sample is thus characterised by heterogeneity in terms of the degrees obtained, seniority and the type of training.

2.2 Investigative Tool

To achieve the objectives of the research, a questionnaire was used as a data collection tool. Some of the questions were taken from the questionnaire used and validated in the framework of the European Biohead-Citizen project 'Biology, Health and Environmental Education for Better Citizenship'; these questions concern health and sexuality. The goal of the questionnaire is to determine teachers' declared professional practices. It is anonymous and written in classical Arabic, and it consists of a series of open-ended, closed and multiple-choice questions.

2.3 Submission of the Questionnaire

The questionnaire was administered in two ways. The first was an on-site handover in subjects' workplaces; the completed questionnaires were immediately collected to achieve maximum returns. We also distributed the questionnaire and collected responses via the Internet; 500 questionnaires were sent and 330 questionnaires were returned, representing a return rate of 66%.

The subjects were informed that they had to answer all of the questions; otherwise, their questionnaire would not be counted. In fact, the

number of incomplete (and therefore unused) questionnaires was low (30/330) (with a margin of less than 3% acceptance of non-response). We proceed to the questionnaire itself, and we first indicate the context of this research and explain purpose and goals of this study. Participants are also informed of the guarantee of the anonymity.

2.4 Method of Analysis

The collected questionnaire data was processed using Microsoft Office Excel 2010. The data are quantitative, and the results are presented in the form of tables and/or graphs. The data were examined in a univariate descriptive way, using the Chi-square test for percentage comparisons in addition to cross-analysis to highlight relationships of dependency between some variables.

3. RESULTS AND ANALYSIS

In this paragraph, the results, their analysis and their interpretation was presented.

3.1 HE Teacher Training

Most of the teachers (90%) in all school levels did not have training in HE. The number of those who did was limited, only (9%), and it was completed as part of an ongoing training.

Almost all surveyed teachers (93%) expressed a need for training in HE; only 6% did not feel this need. The difference observed between the various levels was not significant. This need correlates with the lack of initial training and the importance of this theme. We found that, even among teachers who reported they had training in HE, some (3%) said they needed continuous training in this field.

The topics on which teachers would like to have continuous training include:

- teaching methods and approaches in HE (37%);
- specific themes such as food education, sexuality education and addictive substances (tobacco, drugs, etc.) (23%);
- approaches to setting up and carrying out actions and projects in HE in schools in collaboration with partners (22%); and
- health policy in schools (11%).

Table 1. Characteristics of the sample

Kind	Men	Women
	52%	48%
Seniority	> 15 years	> 20 years
	71%	40%
Teaching level	≥ bac + 2 or 3 years	≥ bac + 5 years
	45%	33%

≥ bac + 2 or 3 years: Two or three years after the baccalaureate
 ≥ bac + 5 years: Five years after the baccalaureate

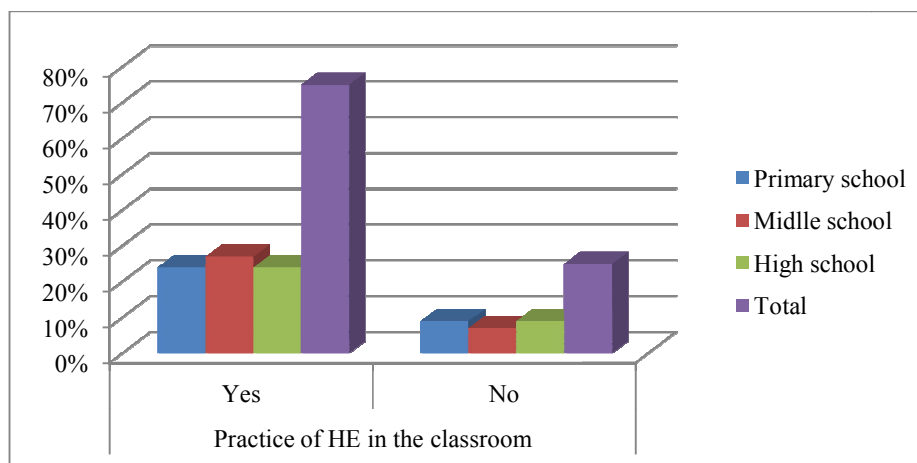


Fig. 1. Distribution of teachers according to their practices regarding HE in class

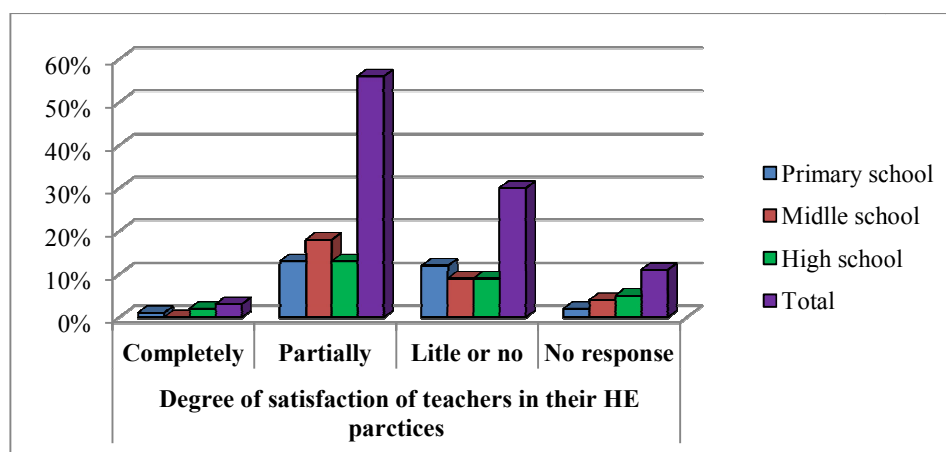


Fig. 2. Distribution of teachers according to their level of satisfaction with their practices of HE

3.2 HE Practices in Class

Overall, 75% of teachers (for the three levels) surveyed in all educational levels reported that they teach HE. In contrast, 25% of teachers did not implement HE activities with their students. The difference between the different teaching levels was not significant (see Fig. 1).

3.3 Teachers' degree of Satisfaction with their HE Practices

Regarding the degree of satisfaction (Fig. 2), the majority of teachers in all levels (56%) were partially satisfied with the way they teach HE, and 30%, the majority of whom were primary school teachers, had little or no satisfaction. Only

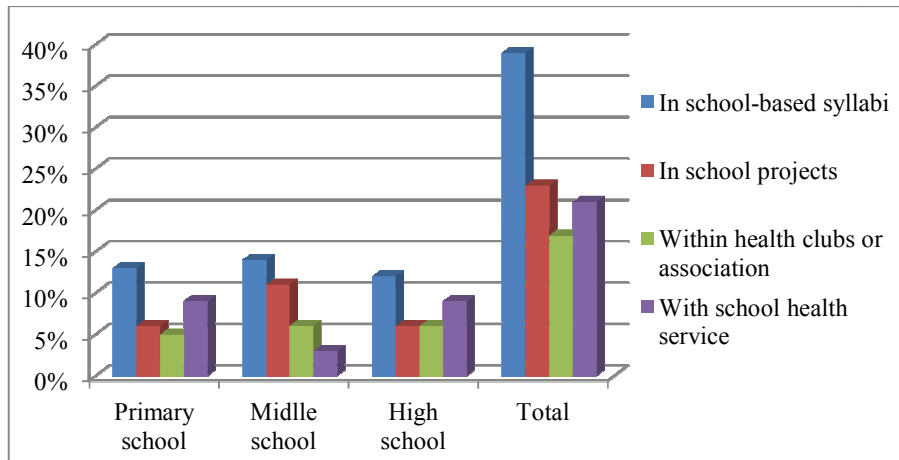


Fig. 3. Distribution of teachers according to the HE practices framework

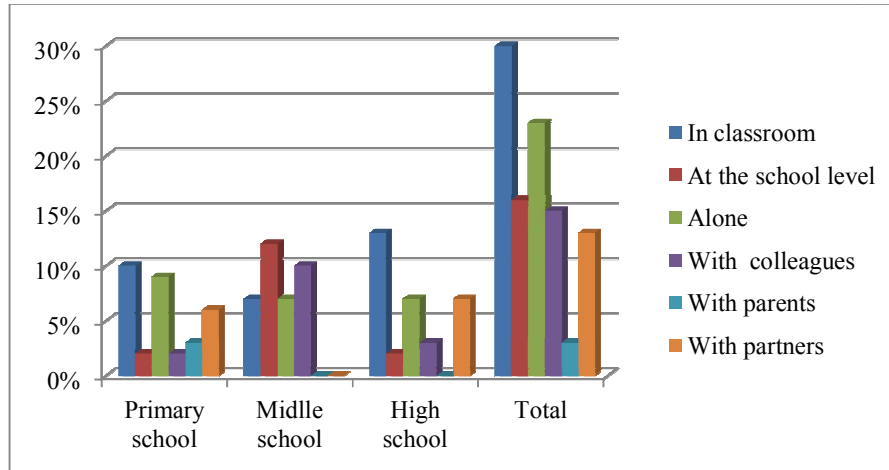


Fig. 4. Distribution of teachers according to the choice of the HE practices environment

3%, the majority of whom worked in qualifying secondary schools, were completely satisfied, while 11% did not express their opinion. It must be noted that it is difficult to express total satisfaction concerning existing activities, just as it is difficult to express little or no satisfaction for the fear of being devalued. Thus, it is easier to express a state of intermediate satisfaction, i.e., being 'partially satisfied'. From the results obtained, we conclude that there is a difference between teachers' responses at different educational levels, but it is not significant.

3.4 HE Practices Framework

Among teachers who reported teaching HE, 39% did so in school-based syllabi, and 23% did so in school projects. Further, 17% have taught HE within scientific clubs (health clubs) or within the

framework of an association such as the AESVT¹ or the ALCS.² 21% reported doing so as part of the school health service. The difference observed between teachers' responses from different educational levels is not significant (see Fig. 3).

3.5 The HE Practices Environment

According to the results (Fig. 4), among those who claim to teach HE,

- 30% did so in their classrooms as part of teaching some of the syllabus sections in a regular way;

¹ AESVT : Teachers of Life and Earth Sciences Association

² ALCS : Association fight against AIDS

- 16% did so at the school level, usually as part of a school project or as part of celebrating national or international days;
- 15% did so with their colleagues; the majority of these were middle school teachers;
- 23% worked alone, some of whom worked with external partners (mainly the school health service or associations such as AESVT and ALCS); and
- Only 3% worked with parents, and all of them were primary school teachers because, at this age, teachers need parents to reinforce certain healthy behaviours and habits developed in class.

Only a very small minority of the interviewed teachers cited pupils' parents as partners in HE action. A small percentage reported working with external partners. This can be explained by the school's lack of openness to the external environment or by the fact that it is not sufficiently organised or interested in participating in HE.

Almost 23% of teachers said they work alone on HE, which can be interpreted in many ways. It could indicate a difficulty in working in groups that amounts to an individualistic trait of refusing to collaborate with others, it could signal that it is difficult to find external partners ready to collaborate or it could demonstrate that these teachers believe that HE does not require collective work. In all three cases, this may

reveal a lack of training and awareness among teachers with respect to collaborative work.

3.6 The Main Obstacles to the Establishment of HE

Among the main obstacles HE implementation faces (Fig. 5), 35% of the interviewed teachers cited a lack of time and equipment. Some think that HE is not part of their teaching mission, while 33% of subjects cited the fear and difficulty of finding committed, collaborative partners in the school setting; 30% highlighted the lack of training that impedes HE implementation. The difference between the levels is not significant.

According to teachers, the topics addressed in HE are mainly related to the hygiene of hands and teeth, food, the prevention of diseases, smoking, drugs, STIs and AIDS. The school health service addresses most of the themes, or they are approached within the framework of school projects or club activities.

3.7 Cross-statistical Analysis

In order to highlight the relations of independence between the different variables, a cross-statistical analysis was conducted. It's restricted to analysing the answers to the questions that we considered the most discriminating.

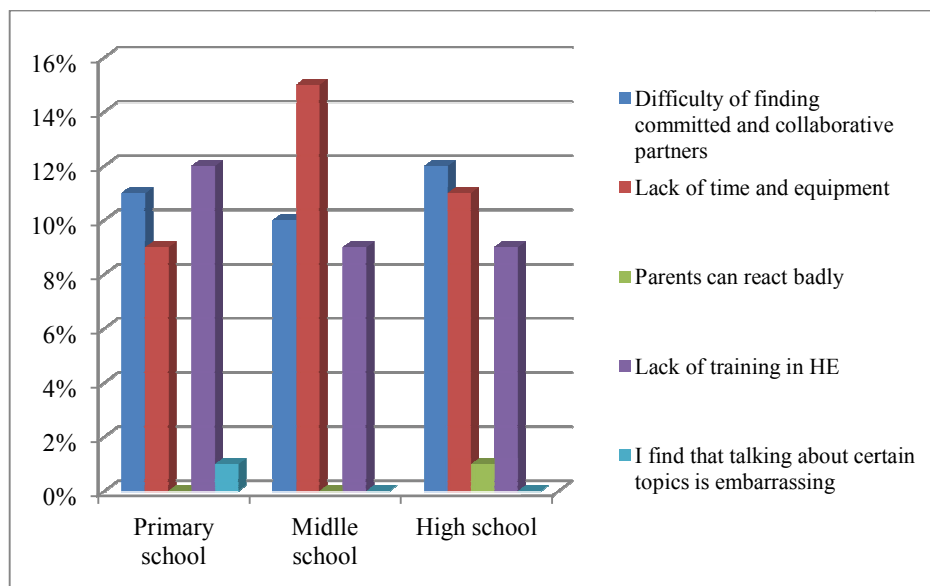


Fig. 5. Distribution of teachers according to the main obstacles to HE implementation

3.7.1 HE practice and training

The results (Fig. 6) show a correlation between teachers' training in HE and teaching HE, since 24% of teachers without training do not teach HE in their classrooms. This means that the training has an effect on teachers' practices.

The responses obtained in our study sample show that, in general, teachers' lack of training in this area results in limited, insufficient HE teaching practices.

Although most of the interviewed teachers had no training in HE (90%), 66% reported teaching it in their classrooms as part of extracurricular activities. This can be explained by the fact that these teachers are aware of HE's importance and have compensated for their lack of

institutional training through personal training (self-training or exchanges with others). The dependence between training and HE teaching is not significant.

3.7.2 Practice and seniority

Based on the results of the correlation between teaching HE and seniority in the profession (Fig. 7), we can deduce that the more seniority teachers have, the more they report teaching HE in their classrooms. 67% of teachers with equal to or more than 10 years of seniority declared that they teach HE, and 21% of the 25% who teach HE in class have fewer than 10 years' seniority. We thus conclude that seniority has an effect on teaching HE, but this dependence is not significant.

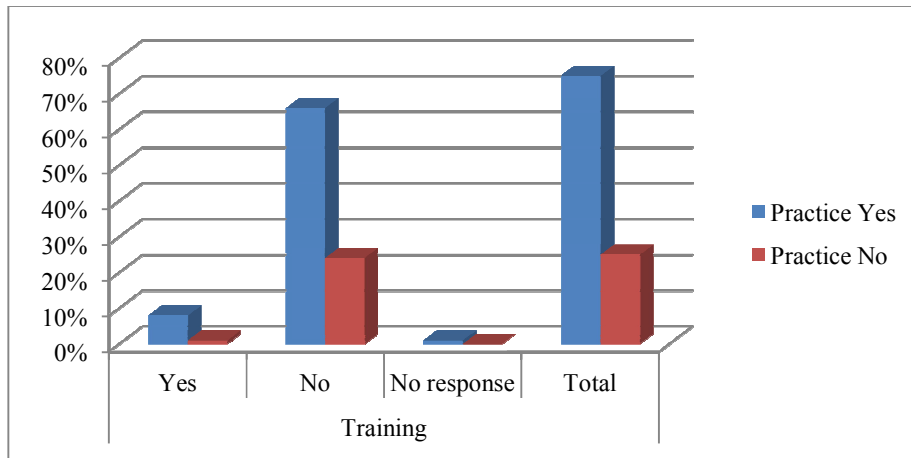


Fig. 6. Teacher allocation for HE training based on HE teaching

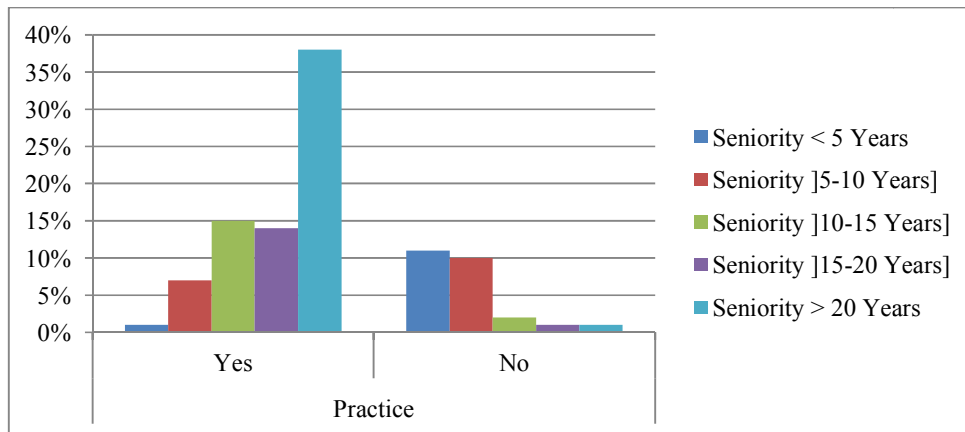


Fig. 7. Distribution of teaching HE based on seniority

According to cross-statistical analysis, the following conclusions can be drawn:

- There is a link between teachers' training in HE and whether it is taught in classrooms. All teachers who reported having training in the field reported teaching HE in their classes and most of those who did not have any training did not do so. Teachers' lack of training in HE results in limited, insufficient practices.
- Seniority has an effect on teaching: The more seniority teachers have in the profession, the more they report teaching HE; they also report feeling more competent in this area, and vice versa. In addition, the more competent they feel, the more they teach HE in their classes.

4. DISCUSSION AND CONCLUSION

Regarding HE teaching practices in classrooms, this study allows us to infer that, despite the fact that most of the teachers interviewed (90%) had no related training, the majority (75%) reported teaching it in their classes. This could be explained by the fact that these teachers are aware of the crucial role of HE teaching and make personal efforts to achieve it. Among these teachers, 23% reported working alone in teaching formal syllabus sequences. We can interpret this fact in light of either the difficulty of collaborating with other colleagues or of finding external partners. This in turn could be related to a lack of training, which this study highlights.

The themes teachers frequently suggest are related to hygiene, food, disease prevention, drug addiction and STI/AIDS. These topics are treated by the school health service or proposed as part of a school project, or they are treated as part of health club activities [37]. Teachers prefer to address HE in a preventive and thematic approach, as other works have mentioned [38].

In addition, this study sheds light on the effect of training on teaching practices. The responses obtained from teachers in our sample show that a lack of training in HE produces limited and insufficient HE practices. Conversely, those who receive training practice such education more. Indeed, teachers' training inevitably entails a modification of professional skills and thus the inclusion of HE. Teachers' professional development is therefore rooted in adequate

initial training that is supplemented by continuous training [15].

As mentioned above, the majority of teachers (three out of four) report having conducted HE tasks in their classrooms. However, the approach used is generally thematic and limited to pedagogical sequences because only 23% of the cases are part of a project. This result is relevant to those in other studies [13]. Indeed, the start of the task is generally conditioned not by a collective approach or an external event, but rather by the teachers' individual decisions regarding syllabi [24]. Teachers rarely work with partners; if they do, it is mainly with the school health service (particularly nurses and doctors in the school health service).

Other studies have already highlighted the fact that HE essentially takes an informative dimension in the form of class sequences rather than a global one in the context of a project [13,23,38]. Indeed, Denman [39] has noted the limitations of an informative approach and shown that occasional, fragmented thematic activities are ineffective in instilling behavioural changes [40]. The methods must be diversified and involve students' active, interactive participation in order to engage them in the learning process [35].

Parents are not usually involved in HE tasks. As our study mentions, only a minority of teachers (3% of cases) cited the family as an external partner in HE action. This result is relevant to those found in studies focused on HE at the primary school level (11 and 5). Some teachers have worked within the framework of scientific clubs, mainly health clubs that are still active [37], or in partnership with associations (mainly AESVT and ALCS). Moreover, one-third of teachers justified the lack of partnership by citing the fear of finding committed and collaborative partners. This could be explained by the school's lack of openness with the family and with other external partners. Most teachers reported working alone and, occasionally, in formal teaching sequences; they rarely worked with colleagues or within a school project framework.

It is therefore a priority to establish partnerships and ongoing collaborations with other school and community stakeholders. The expanded vision of school-based HE necessitates openness from teachers. In this sense, as Mérini et al. [41] have mentioned, their role should change and evolve

and not to be limited to classroom teaching in formal syllabi.

The lack of partnership can be also explained by a lack of training in this area. Training has an important influence; nearly all of the 9% of teachers who have received HE training conduct related activities in their classes, compared to only 66% of those who have not received any training. These findings highlight the effect of training on HE teaching practices. This is also confirmed by teachers' statements about the main elements that hinder HE implementation.

Teachers' training in this field is therefore a major issue, and it appears to be one of the determining factors on which many authors agree [9,10,38,39,42-45]. In fact, the vast majority (93%) has suggested the need for continuous training in this area. On the other hand, teachers, especially primary school ones, do not think they are able to provide this education because they believe they lack the competence to do so. Moreover, most teachers (37%) expressed the need for a methodological assistance and know-how (methods and pedagogical approaches in HE). It seems that teachers are interested in classroom interventions. Others (23%) are interested in training in specific topics such as food, sexuality, drug abuse education and project development support (22%).

It is worth mentioning that, in addition to the development of professional skills in this field, this training should target the evolution of teachers' beliefs in relation to health and HE. It should be preceded by identifying the nature of the impact of teaching practices that present an important educational challenge and allow the modeling of the phenomena that interfere with teachers' involvement, as Berger [15,46] has mentioned.

It was also found that teachers who did not implement HE activities with their students cited the lack of time and materials as the main obstacles (35%). The issue of the lack of time is directly related to HE representation as an additional discipline or as being outside the teachers' mission. Moreover, the time devoted to HE must be sufficient [47] and the duration of the arrangements has a significant impact [48].

However, this study pointed the teacher training effect on their practices. In addition, there is a strong demand for training in this area, with

specific expectations for this training. It is therefore becoming important to consider training in HE. The implementation of appropriate training, which should aim to develop professional skills in this field. Training that integrates both work on teachers' conceptions to make them evolve and allows them to take teachers into consideration as the main actors in health education. It is therefore important to reassure them in their function and to indicate to them the potential external partners to collaborate with them (health professionals, associations, families) whom they will have to call upon to help and accompany them in this education. Also provide teachers with adequate documentation to help them carry out their actions in the classroom.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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