



## Teachers' Concepts and Practices on STIs Risk Education

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### ABSTRACT

Health education (HE) has a major role to play in preventing risky behaviour that may lead to sexually transmitted infections (STIs) and adopting responsible behaviour. Our study aims at analysing the conceptions and practices of biology teachers in relation to HE and STIs risk education (RE).

The study methodology was based on administrating a questionnaire to 253 attached teachers in different regions of Tunisia; in order to understand to which extent teachers, contribute to the sexual health promotion among schoolchildren. The study used mixed method design, by both quantitative and qualitative approaches. Quantitative analysis is performed by SPSS software and a lexical analysis of the content of the responses using Iramuteq software.

The research findings show a confusion between danger and risk concepts in most teacher interviewed. The difficulties to conduct this theme were mainly related to the institutional context (programme load, restricted time) than to be personal factors (beliefs and attitudes).

The difficulty of implementing RE is due to the lack of training for teachers. The study recommends several approaches to improve STIs RE in schools which include in-service training for teachers and the significance of partnership.

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### Introduction

Due to the impact that our individual and collective behaviours have on the health, health education (HE) has a major role to play in preventing risk behaviour hence favouring the adoption of responsible one. However, the development of HE in schools is difficult to implement for numerous obstacles. These obstacles include the problems posed by the interaction with the private sphere, the mobilized nature of the scientific knowledge and the articulation of the purposes of preventive actions with the school's missions and values [1].

The Tunisian History has experienced critical periods (especially the 2011 revolution), where scientific issues coupled with social, political and ethical issues intersected. In this context, the motivation to choose the theme of HE and STIs (sexually transmitted infections) risk education (RE) at school. Moreover, RE has recently become a field of investigation and it is appropriate to analyse in depth the developed tools and the regulatory frameworks that would allow their diffusion and their impacts on the targeted students. STIs RE presents a gateway to HE which focuses on educational lessons and in order to provide an individual or collective learning to maintain a compatible state of health. Thus STIs RE, with a global approach [2,3] among students, especially adolescents, would make it possible to modify their attitudes and behaviours; that's why they must be informed to assess their own risks themselves in order to reduce the infections' transmission.

But when it comes to teaching topics of great vivacity, teachers often find themselves confused. What explain is that teachers, in front of the risks of teaching vivid knowledge, prefer to avoid this and it ends up to be evaded and even removed from the didactic field, considered as a taboo subject and « too hot » one [4].

Health issues are « lively questions » [5]. HE aims to provide information on socially constructed questions and ask socially lively questions or « umbilical questions » [6]. Therefore, essential for the prevention work carried out by those involved in HE. They rely on these representations in order to best lead their mission [7].

Research work has developed over the last decade in order to offer the best possible relationship between HE and schooling. The role of teachers is highlighted and essential to develop the student learnings taking part in an appropriate knowledge approach. Representations, conceptions and teaching practices are indicators for HE researches [8].

The interest to teacher representations is a part of the didactic approach. Like any person, the teacher has representations about the health notion. HE is not only for prevention but also for educating people [9]. Promoting health requires interacting with the actors. For this, it is necessary to know their representations about the subject.

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In curricula or official circulars, there is no explanation of the teacher's role in HE. In fact, RE could induce a reconsideration of this role based on the teacher's specific opinions and representations as personal conceptions influence their practices [10].

Our question research is defined as: How do teachers' conceptions arise as obstacles or points of support for the establishment of STIs RE?

## Methodology

This work targeted 253 biological teachers of middle school and high school, which we interviewed from paper and online questionnaire. We distributed the questionnaire for 11 different cities in Tunisia (from interior and coastal areas). The questionnaire consists of 15 questions addressing the conceptions and practices of teachers on STI RE. The investigation was anonymous.

All questions were written in French. This questionnaire can be found online under the link:

<https://docs.google.com/forms/d/e/1FAIpQLSch75NWopJCFzK-NyeTh337VBFA-XjrKEhprLf1DRsa2MoFA/viewform>

Additionally, items were included to assess background and demographic characteristics of respondents. Teachers' answers were classified into different categories, then each type of answer was counted and then explained. The study utilized a mixed-method approach including quantitative and qualitative methods. Quantitative analysis was performed by SPSS software version 20 (Chicago, IL) and qualitative analysis is performed by Iramuteq software.

We used Reinerd method analysis with Iramuteq software for lexical analysis [11]. Previous studies had shown that this technique of lexical analysis was useful for analysing the content of social representations [12,13] concluding that the emergent results were consistent with those proposed by established studies in this area. We have inspired our question choice regarding conceptions, declared practices and personal questions to the interesting interview grid according to the model of Cardot & Berger [14].

## Results

### Quantitative Data Analysis of Teachers' Conceptions. SPSS Statistical Tool

Our population was composed of 253 teachers, 54.9% were women. The average age of the teachers was 50 years ranging from 31 to 68 years.

Teaching experience starts with 3 years up to 40 years. They were mainly high school teachers in 63.3% and 35.6% of middle school teachers. The majority of teachers obtained master's degree in biology (79.7%), 42 (16.6%) of them had the master's degree and six (2.4%) were doctors in different specialities.

202 teachers (79.8%) did not show difficulties in teaching HE or STIs RE (81%). If there were, they were related to the hourly load and the taboo subject that prevented this teaching. Since there was a real difficulty when it came to talking about people's health bodies and feelings.

HE in schools improves student behaviour, was a proposal that has been chosen predominantly by teachers in 242 (95.7%) of cases. 189 teachers who have taught HE find interest in improving student behaviour in school.

### a) Educational Objectives Linked to Behaviour

Regarding the main goal of HE and STIs RE, the majority of teachers chose the proposal describing the development of behaviours respecting the students' health in 83% of cases compared to 17% of answers regarding the proposal which was only based on the acquirement of knowledge for students. 80.5% of teachers preferred participation in training and had largely sufficient teaching experience to better answer health questions. While 30% of them preferred training previously.

In order to search whether STIs RE can be developed by the teacher alone or escorted by a doctor or psychologist or a family member. Indeed, the partnership was the majority response as 80.2% of teachers support the presence of a doctor or psychologist. Modules on the « partnership » that could be used on HE and STIs RE projects require a collective work dynamic. Regarding the need-to-know student expectations about STIs RE before developing this lesson, teachers confirm this proposition in 88.9% of them. They justify this mainly on improving students' pre-acquis in 42.7% while 12.3% for motivating them.

### b) Obstacles to Setting up the Lesson of HE and STIs RE

The lack of time and the program charge were the arguments frequently given as obstacles to the implementation of this lesson in 27% and 23.4% of cases respectively.

We found the predominance of factors linked to the institutional context, especially the program charge and the lack of time (just one hour recommended in program), which appeared to be the main obstacles in 50.4%. While student pre-acquis and conservative society were also highlighted as obstacles for teaching this type of education in 18.3% and 19.6% respectively.

### c) Drivers to setting up HE and STIs RE

The official curriculum and textbook, information via the media or the internet are the most frequent proposals from teachers for the implementation of this type of lesson. So 38% of teachers referred that HE and STIs RE were part of the curriculum and/or teacher assignments, which may appear as a point of support for providing training.

The declared needs of teachers were firstly linked to the context: programs and pedagogical methods (65%) then personal needs as individual search via internet (35%).

In order to enrich the teaching of this type of lesson regarding pedagogical activities, teachers chose different proposals but they preferred the intervention of a specialist doctor or psychologist in 27.6%. The debates and the contribution of health clubs were also chosen in 20.4% and 18.4% of cases respectively.

The teachers preferred to develop increasingly the acquisition of their students of preventive behaviour with regard to personal and collective health (p4) in 37.5% of cases. Others proposed to develop the prevention concept (p1) and knowledge of contaminating pathways of STIs (p2) in 32.3% of cases. Scientific notions came last for this type of education (p3) (10%). This declared practices of teachers followed the global model of HE as proposed by Cardot & Berger [14] based on acquisition of preventive behaviour for the safety of personal health and that of others.

By comparing the frequencies obtained by analysing the proposals of declared practices and the experience teaching, we obtained the following results: the experienced teachers preferred the p4 in 69.2% versus 58.3% for the new teachers.

In addition, the three proposals p1, p2 and p3 were chosen by the experienced teachers in 26.4% while the new teachers in 33.3% of cases. This suggested that the new teachers preferred learning STIs risk depending mainly on the development of scientific notions of STIs risk rather than to acquire a respective behaviour for their students.

50.6% of teachers considered that the scientific and pedagogical content in the textbook could not change the previous ideas of students and their actions towards education about HE and STIs RE. However, 48.6% agreed with the content of the school textbook. Information resources on STIs RE can be the textbook, a received training course, the internet, the paramedical and medical specialists, the personal experiences of others... Teachers firstly preferred the internet (37.1%) then the textbook (22.6%) and finally the paramedical and medical specialists (20.2%).

For attitude aspect, the most relevant behaviour favoured in STIs RE, teachers chose to have sexual intercourse only in a stable relationship in 84.8% (p1) while 15.2% suggested the second proposal (p2) to have safe sexual practices, by using a condom for example. Which showed the conservative nature of the Tunisian society.

This study's context evaluation of teachers' attitude and their experience teaching found no significant differences for p1 as 87.5% for new teachers versus 84.6% for experimented ones. However, for p2 more experienced teachers chose this proposal in 13.6% versus 4.16% for new teachers ( $p < .04$ ) suggesting that experience teaching makes teachers more willing to communicate freely on issues of STIs risk.

Regarding the coastal areas, where we received more answers, the frequency of proposal 1 was 81.8% and 18.2% for proposal 2. While for the interior areas, the frequencies obtained were as follows: 92% and 8% for proposals 1 and 2 respectively. Which suggested that teachers living in interior areas developed more conservative ideas.

To improve STIs RE, it is best to reinforce in the student knowledge transmission and several psychosocial skills such as self-esteem, critical thinking, responsibility, respect for others. Among these proposals teachers prefer to emphasize responsibility (p4) in the student in 38.8% and respect for others (p5) in 20.4%. The other' proposals were less in frequency.

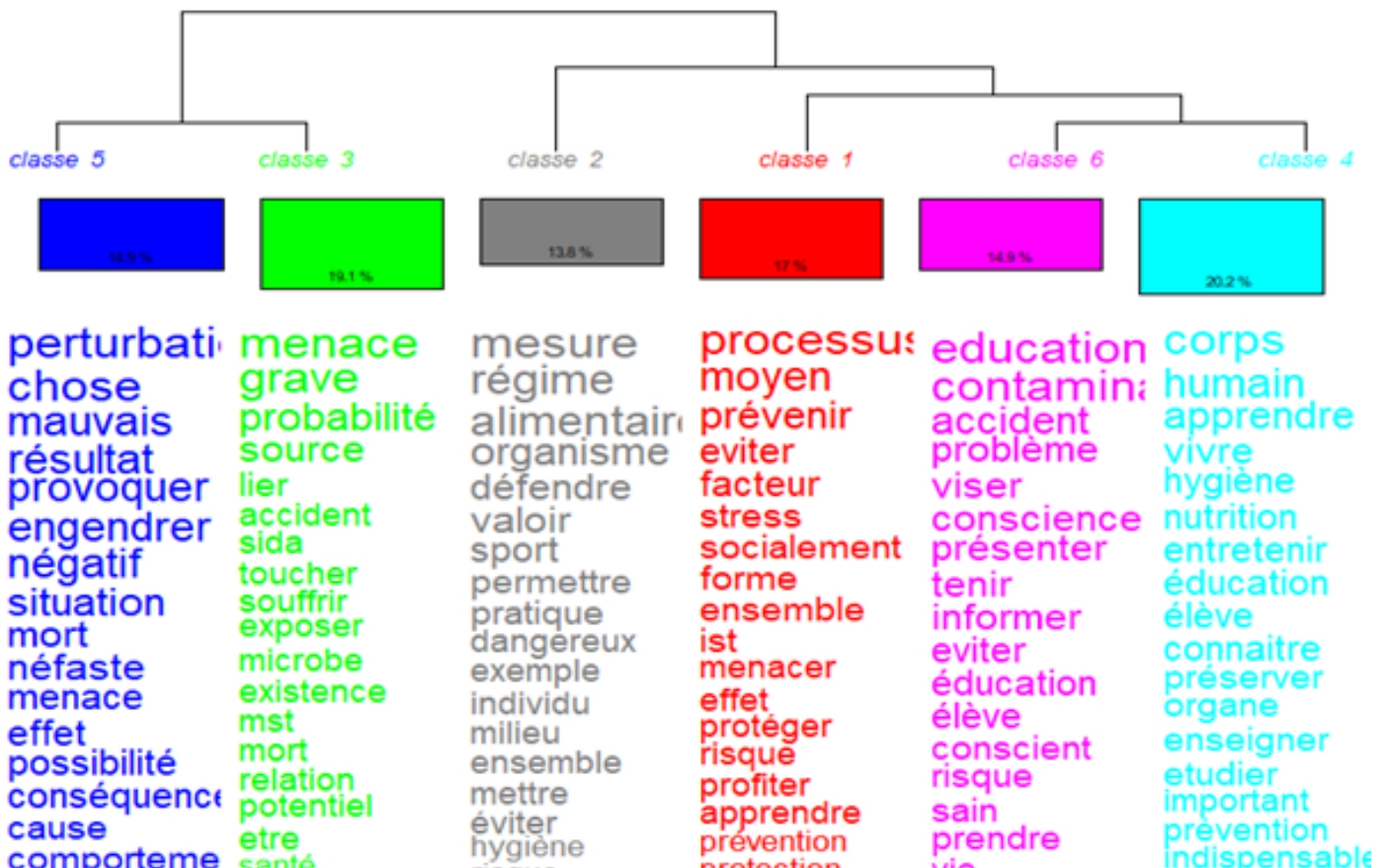
**Qualitative Data Analysis of Teachers' Conceptions. Iramuteq Statistical Tool**

In this part, we applied the Iramuteq software for the qualitative analysis for teachers responses.

We determine the underlying patterns of teachers' conceptions of HE, RE, risk, danger and prevention. We obtained the following results. by Reinert method analysis [11] (Figure 1).

Our top-down cluster analysis revealed the main definitions addressed by the participants through free association. We characterized each definition of a set of typical words and segments, which we call a class. First, the results revealed two main branches or themes (composed of different classes), which we call main clusters. The first main cluster was more closely related to formal information about education and prevention (composed of classes 1, 2, 4 and 6). The second

**Figure 1:** Hierarchical clustering dendrogram of free association with the most frequent words and the high association words X2 (1),  $p < 0.001$ .



main cluster was more closely related to the risks and dangers of STIs (composed of classes 5 and 3). Following the division of the cluster analysis, the representation of formal information was first composed of the fifth class, called "Risk". Teachers defined them as a disturbance, a bad thing that causes negative results. It is a threat, a possibility... This definition was clearly consistent with the representation of a high risk of a situation or disease.

The third class called "Danger" where teachers defined it as a serious threat, a probability related to accidents, AIDS, microbes, death... The association of classes 3 and 5 in the same cluster indicated that these two notions of risk and danger were very close.

What is interesting to note from this statistical representation (Reinert method) is that the definition of HE proposed by teachers was based on the human body, learning, knowledge, organs.... Which shows that the model proposed by teachers is a biomedical one.

### Discussion

Nowadays, STI risk education contributes to public health not only with regard to the prevention of HIV/AIDS, other sexually transmitted infections and sex abuse, but it is also related to aspects such as interpersonal relationships and psychosocial implications.

El Kazdoui et al. [15] identified five themes seemed to influence risky sexual behaviours in adolescents as risky sexual practices and STIs, the adolescent's social domain, the role of school, media, including internet and social media, and sociocultural norms.

STIs RE is directly conditioned by school teaching practices, by the social context, but also by the representations that teachers have constructed on questions of health, STIs RE and their mission [16]. Indeed, the personal conceptions of teachers acts on their practices [10]. Moreover, there is often a gap between what teachers think should be taught and what actually is taught [17].

Most teachers especially those who taught Biology seemed to be knowledgeable about STIs, including recognizing that some infections are asymptomatic. However, some teachers had misconceptions on how STIs are transmitted [18].

The data of our study shows that overall teachers (81%) have positive attitudes towards teaching all elements of comprehensive STIs RE. Teachers expressed confidence in their ability to teach this topic but indicated that the hourly load and the taboo subject prevent this teaching. Since there is a real difficulty when it comes to talking about people's health, person's body and feelings. Moreover, Chirawu et al. [19] suggest that professional preparation and materials are not adequate to provide accessible sexuality education to their learners. This study highlights the need to develop appropriate materials and to build teachers' capacity to deliver sexuality and HIV education to learners.

The idea that HE aims to improve behaviour appears crucial in our study (83%). HE and STIs RE is often considered as a contribution of knowledge to the detriment of skills development but this is the opposite case of our results as psychosocial skills were enhanced.

To improve STIs RE in schools, which include training for teachers, providing relevant teaching and learning facilities. Moreover, it is concluded that the contribution of the partnership (specialist

doctor, psychologist) on STIs RE. An open discussion among parents, pupils, religious leaders and policy makers [20] should be carried out so as to develop a guideline on what should be included in the syllabus for STIs risk and sexuality education topics.

DiClemente et al. [21] propose an integrated strategy that addresses the STIs epidemic among adolescents by promoting a socio-ecological perspective in both basic research and intervention design.

Most of our teachers felt that they needed more information as training course on HE including STIs. These results were in line with findings obtained by Marzin [22] and Wanje et al. [18].

According to our results, the declared practices of teachers are enrolled in the global or holistic model of STIs health and RE focused on people's health and health promotion as proposed by Cardot [23].

Teachers prefer mainly to develop for their students, the acquisition of preventive behaviour with regard to their health and others. This is in agreement with most previous studies [20,24-26]. On the other hand, context assessment of the practice aspect is seen as a difference in experience. Our study found a difference in frequencies where experienced teachers had better practices than new teachers. This findings are in line with Butti Al Maktoum's study [27], which also found the gap between experienced teachers and new teachers in the aspect of practice evaluation. Also, there is a different effect for experienced teachers and new teachers where aspects of new teachers' practice are at a low level and require special guidance [28]. Although our study found a slight difference, an appropriate action must be taken to ensure that there are no gaps based on experience in the fundamentals of STIs RE. Internet was chosen as a self-training for teachers. This is in agreement with findings of Daneback [29].

The most relevant behaviour favoured in STIs RE and characterizing the attitude of teachers is that the majority chose to have sexual intercourse only in a stable relationship which underlines the conservative nature of Tunisian society.

Furthermore, context assessment of the attitude aspect is seen as a difference in location as the interior areas of Tunisia support strongly the proposition as the most relevant behaviour favoured in STI risk education which is to have sexual intercourse only in a stable relationship. Other studies [30,31] argue that teaching experience influences the attitude of teachers in the implementation of sexual education without taking into account the location where the teacher teaches.

In our study, teachers wanted to emphasize responsibility in their students in order to improve STIs RE. Darroch et al. [17] are in agreement with our results where most teachers' messages based on acquiring mainly responsibility.

Our findings show a clear confusion between the two concepts risk and danger. The examination of common sense has shown that this confusion is quite common [32]. It is important, with classes, to overcome the obstacle of confusion of terms, to construct the precise meanings of the concept.

There is no agreed definition of the concept of risk. If we study the literature, we find a number of different ways of understanding the risk concept. Some consider risk as subjective and epistemic, dependent on the available knowledge, whereas others grant risk an ontological status independent of the assessors [33].

We conclude that understandings of risk emerge from various sources of information, values, or social conventions that articulate everyday understandings. Queiroz et al. [34] understand the relationship between the social representation of risk and danger is a relationship of “nested crossing”. Moreover, according to Legardez [35], in the social representation, the robust elements as the elements located in the central core, are concrete. The more difficult it is to reduce this representation to abstraction. This is the case for the social representation of our teachers regarding both risk and danger. Our research aligns with El meddah et al. [36] findings where the social representation of a sample of Tunisian teachers about human reproduction and sexuality would be based on concrete elements with a mechanoscientific aspect.

### Behavioral Health

The nature of knowledge is complex since it articulates scientific data and social components [10]. However, if teachers are rather favourable to the teaching of biophysiological components relating to scientific knowledge, they are more reluctant to address content related to the development of psychosocial and social skills, psychological and emotional aspects of HE. This is a new professional posture for teachers which is emerging here to teach scientific knowledge and at the same time promote, for their students, a healthy personal and collective behaviour. This change in professional posture requires initial and professional training of teachers.

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