

## Attitudes and perceptions of teacher training students about alternative and complementary medicines. A focus group study

### Introduction

The main objective of this research is to study the perceptions and attitudes that teacher training students have about complementary and alternative medicines (CAM). In Spain, CAM are being questioned and analysed given the absence of hard scientific evidence to support them. Pre-primary and Primary Education Degrees foster the development of scientific competences, critical attitudes and the capacity to understand scientific knowledge and judge the reliability of information. We have investigated the previous ideas of these students in order to implement teaching proposals in which CAM are treated as a socio-scientific issue.

### Methodology

We created six focus groups with seven students in each with an average age of 27 years; females were predominant (85%). We asked which therapies were known and used by the students and we posed questions to the groups based on the CAM Health Belief Questionnaire (CHBQ) (Lie & Boker, 2004):

Do you think physical and mental health is maintained by an energy or vital force? Do you think the placebo effect acts in CAM?

Do CAM stimulate the body's natural therapeutic powers?

Are CAM a threat to public health? Should treatments that are scientifically untested be discouraged?

Do CAM include ideas and methods from which conventional medicine could benefit?



Two students practicing yoga for children

### Results

- Teacher training students do not have an informed knowledge of CAM nor do they use them to a great extent, however, most have a positive perception of them. Acupuncture, massage and herbal medicine are the most well known and credible therapies, as is yoga but this is considered to be a sports practice rather than a therapy.
- Participants identified "energy" or "vital force" (terms used in CAM argumentation and in Vitalism) with emotions.
- Some students don't understand the term placebo, and most state that conventional drugs have similar placebo effects to CAM.
- Students consider that mental and physical health are closely related. They stated that their main health disorders are "psychological": depression, nervousness, stress and anxiety. They consider that CAM can attend to these pathologies. They feel dissatisfied with the conventional doctor who does not take into account their emotional peculiarities and usually applies the same diagnostic tests and treatments: blood tests and X-rays; prescription of drugs, especially ibuprofen and diazepam.
- Participants consider that, unlike conventional medicine, CAM do not use drugs based on "chemistry". In their opinion, drugs are aggressive and produce adverse side effects.
- Students think that CAM are based on patient's beliefs, they are "natural", and with the power of the mind and suggestion heal patients if the latter believe in these practices, except in serious illnesses such as cancer.
- Participants think that CAM include ideas and methods from which conventional medicine could benefit. They don't think that CAM are a threat to public health. Although these therapies should be regulated and controlled by some authority, the endorsement of science is not seen as strictly necessary by some of the participants.



Mavi Corell Doménech  
Florida Universitària

Ramón Camaño-Puig  
Universitat de València

Emilia Hermelinda Lopera-Pareja  
CIEMAT

Yolanda Cabrera  
Universitat de València

### Conclusions

Students are in favour of CAM - although they may not have used them - because these therapies deal with the emotional needs of the patient and their remedies are "natural". Students think that conventional doctors don't pay attention to emotions. Their perception of conventional medicine is so negative that they are willing to give an opportunity to other therapies.

The results of this pilot study show that the level of natural science knowledge of Valencian students can be improved (Cantó, J. C., *et al.*, 2016). We found misconceptions relating "energy" with emotions. As reported in other studies, students also think that the word "natural" is synonymous with harmless (MSPSI, 2011). Other misconceptions we found are related to the role of scientific medicine in society and the word "chemical" as being synonymous with conventional drugs that cause undesirable secondary effects.

CAM offer an interesting socio-scientific topic about which to think critically in science education classes. Science teachers should provide information about CAM as a socio-scientific issue and use this to improve students' scientific literacy (Gil & Vilches, 2006).



Two teachers instructing students in yoga

### For further information

More information on this and related projects can be obtained at:  
[www.scienceflows.com](http://www.scienceflows.com)  
[mcorell@florida-uni.es](mailto:mcorell@florida-uni.es)

### Bibliography

- Cantó, J. C., *et al.* (2016). ¿Qué ciencias se enseñan y cómo se hace en las aulas de educación infantil? La visión de los maestros en formación inicial. *Enseñanza de las ciencias*, 34 (3), 25-50.
- Gil, D. & Vilches, A. (2006). Educación ciudadana y alfabetización científica: mitos y realidades. *Revista Iberoamericana de Educación*, 31-53.

Lie, D. & Boker, J. (2004). Development and validation of the CAM Health Belief Questionnaire (CHBQ) and CAM use and attitudes amongst medical students. *BMC, Complementary and Alternative medicine*, 7 (25).

MSPSI (Ministerio de Sanidad, Política Social e Igualdad) (2011). *Análisis de situación de las terapias naturales*. Madrid: MSPSI.

### Acknowledgements

This work has been developed within the framework of the research project "Study and classification of natural therapies, complementary and alternative through the media and social networks. Ideas and values of transfer to the social imaginary" (CSO2014-57778-R), financed by the Ministry of Economy and Competitiveness and by FEDER funds of the European Union.