

# Is menopause present in school? An analysis of Greek secondary education biology textbooks

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# Introduction

- Menopause is a period of women's life arguably associated with negative stereotypes.
- Stereotypes, stigma, and misunderstandings of menopause can affect the psychology of women in many ways.
- Does the menopausal transition make women seem older than men of the same age?
- Textbooks determine largely what is taught and learned about science.
- Is menopause present in Greek secondary education biology textbooks?
  - ✓ if yes, what kind of information are there?

# Methods

- For the purposes of this study, we reviewed two biology textbooks currently used in Gymnasium and four biology textbooks currently used in Lyceum.
  - ✓ Biology for the 1st grade of Gymnasium (textbook-1).
  - ✓ Biology for the 2nd and 3rd grade of Gymnasium (textbook-2).
  - ✓ Biology for the 1st grade of General Lyceum (textbook-3).
  - ✓ Biology for the 2nd Grade of General Lyceum - General Education (textbook-4).
  - ✓ Biology for the 2nd and 3rd Grade of General Lyceum - volume 1 (textbook-5).
  - ✓ Biology for the 3rd Grade of General Lyceum - Health Studies Orientation Group, volume 2 (textbook-6).

# Methods

- We analysed
  - ✓ the main text
  - ✓ appendices
  - ✓ illustrations' captions
    - of the biology textbooks investigated
- Analysis concerned the presence of information in regards to menopause
  - ✓ what it is
  - ✓ conditions related to it

# Results

- In four out of the six textbooks we reviewed there are no references in menopause
  - ✓ only textbook-3 and textbook-4 include relevant information.
- In textbook-3 the word 'menopause' is mentioned in the section about the menstrual cycle
  - ✓ In authors own words: 'This cycle is repeated every 28 days or so, from adolescence to menopause (between the ages of 45 and 50)'.

# Results

- In textbook-4 the word 'menopause' is not mentioned, but in the section of egg production there are information concerning the number of eggs available to women and the age when the last egg matures.
- ✓ In authors own words: 'Since birth, a woman has in her ovaries about 200,000 premature germ cells, which are in the prophase stage. Under the influence of female sex hormones (estrogen and progesterone), around the age of twelve, she begins to have a menstrual cycle (period) every twenty-eight days. This means that each month one of the premature germ cells completes the cycle of meiosis for egg production, which is ready for fertilization. During woman's lifetime, a total of about four hundred immature germ cells mature into eggs. The immature germ cell that will mature last, remains in the prophase for about fifty years.'

# Results

- Finally, in textbook-3 'menopause' is also mentioned in the section concerning bone formation and growth
- It is mentioned that osteoporosis appears to women in menopause
- ✓ In authors own words: *'Osteoporosis is a decrease in bone mass, due to reduced bone formation, increased degradation, or both. It is more common in the elderly, postmenopausal women, and bedridden patients. Factors that contribute to the occurrence of osteoporosis can be gender, lack of calcium and vitamin D, early menopause, sedentary lifestyle, smoking and certain substances such as alcohol, cortisone, etc.'*

# Conclusions

- Despite calls for more education in this particular area from clinicians and policymakers since the 1990s, clearly little progress has been made.
- It seems that menopause in school textbooks is not adequately elaborated.
- Too many women are ashamed of and embarrassed by reproductive and other aspects of their bodies. Too many men and women absorb negative attitudes toward menopause from popular culture, and those negative attitudes can affect broader attitudes toward women.



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