EFFECT OF A BRUCELLOSIS PREVENTION COURSE AT SHEPHERD’S POPULATION

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INTRODUCTION

- Brucellosis is an anthropozoonosis of great magnitude because human infection is related with direct or indirect contact to infected animals, being mostly an occupational disease.

- At Serra da Estrela (Portugal), Brucellosis is related with the reversion of normal period for sheep’s parturition (lamb’s birth) because the milk is essential for cheese production during the winter till the spring.

- An community-based intervention was launched in 2002 to identify the main factors related with the maintenance of Brucellosis at Serra da Estrela. They were:
  - Good relationship between veterinarian services and shepherds
  - Lack of knowledge about Brucellosis dissemination
  - False believes about responsibilities with brucellosis control
Ampliação da articulação coxo-femural direita com lesões de brucelose

Bruceloma intervertebral
BRUCELLOSIS: Prevention

Eradicate the animal disease

• To fulfil National Plan of Brucellosis Eradication
• Good conditions of hygiene into the corrals
• Not acquiring animals without control (blood test)
• To destroy the remaining portions of abortions and lamb births
• Not share grass and corrals with different flocks
• Not loan males for reproduction
• Report any suspicion of abortion or sickness
• Avoid lamb births at the corral with the flock
BRUCELLOSIS: Prevention

To prevent the human transmission

- To boil or pasteurize milk to make fresh cheese
- Not drink or eat unpasteurized milk or fresh cheese
- Not taste curd during cheese production
- To wash vegetables and fruits

Use gloves:
- To help in the parturition
- To deal with sick animals

Personal hygiene after work
- Cover hand’s wound before milk
THEORY OF FREEING

• This theory is focused on the lack of the person’s ability to perceive, respond and act with the power to change. Consciousness is influenced by and influences the culture, so their consciousness is a producer of culture.

• Education is the key to becoming critically conscious. But not the traditional education! Education occurs through dialogue, not through lecture. All those involved in the educational process learn from one another.

THE FREIRE’S THEORY INCLUDES 3 STAGES:

– **Listening stage** to share their thoughts, identify the problems and set the priorities.
– **Dialogue process** to discuss around a code who helps the people to move from a personal to a social analysis and action level.
– **Action stage** in which those people involved try out the plans that came from the listening and dialogue stages.
As the people put their plans into action, they reflect on their new experiences and create a thinking-acting cycle.
OBJECTIVES

• Applying the preventive model PRECEDE_PROCEED to reduce the risk of Brucellosis contamination at shepherd’s population related with lack of knowledge and unconsciousness of risk conduct.

• Targets for change were:
  – Increase knowledge/consciousness about Brucellosis contamination and shepherd’s safety behaviour
  – Improve adherence to preventive measures related with animal brucellosis control
  – Improve safety behaviour related with human contact with animals and their products
METHODS

Health education was retained as the main intervention strategy

- We developed a quasi-experimental research based on PRECEDE-PROCEED model (Green, 1990)
  - A 32 hours course was designed from a previous ethnographic study
- The aims were to stimulate discussion on health and safety issues related with the pasturing and cheese production
  - Educational activities were based on ecological approach involving community groups applying Theory of Freeing (Freire, 1973; 1974)

- The course was implemented to 27 groups during 2 years
  - 320 peasants selves enrolled
- They completed evaluation questionnaires about knowledge and conduct related with Brucellosis contamination at the first and the last day of the course and also 3 months later
FINDINGS

Increase knowledge/consciousness about Brucellosis contamination and shepherd’s safety behaviour

– The main results showed a significant increase in knowledge about Brucellosis contamination and about risk factors ($p > 0.0000$), at the end of the course.

– Three months later 83% refer changes in pasturing and cheese production conducts due to the knowledge acquired:
  • More accuracy to personal hygiene and wound protection;
  • More carefully with animal’s corral conditions and cheese production
Explain what brucelosis is...

Explique o que é a Brucelose

- Other answer
  - Diagnostic Evaluation: 10
  - Final Evaluation: 110

- No answer
  - Diagnostic Evaluation: 20
  - Final Evaluation: 100

- Animal disease
  - Diagnostic Evaluation: 60
  - Final Evaluation: 140

- Pathogenesis
  - Diagnostic Evaluation: 80
  - Final Evaluation: 120

- Human disease
  - Diagnostic Evaluation: 100
  - Final Evaluation: 100

- Ethiology
  - Diagnostic Evaluation: 60
  - Final Evaluation: 100
How can we catch Brucelosis?

Como é que as pessoas “apanham” a brucelose?

- Other answer
- No answer/Don’t know
- Hand’s wound
- Lamb’s birth
- Food-borne
- Animal contact

Diagnostic Evaluation
Final Evaluation
How can we avoid human Brucellosis?

Como é que se evita a brucelose nas pessoas?

- Other answer
- No answer/Don’t know
- Food hygiene
- Don't eat unpasteurized fresh cheese or curd
- Pasteurizing milk to made fresh cheese
- Use gloves during parturition or treatment
- Personal hygiene
- Avoid contact with infected/suspicious animals
- Corral hygiene/destroy abortion
- Doing blood test every year

Diagnostic Evaluation
Final Evaluation

Other answer
No answer/Don’t know
Food hygiene
Don't eat unpasteurized fresh cheese or curd
Pasteurizing milk to made fresh cheese
Use gloves during parturition or treatment
Personal hygiene
Avoid contact with infected/suspicious animals
Corral hygiene/destroy abortion
Doing blood test every year
How can we avoid animal Brucellosis?

Como se evita a brucelose nos animais?

- Other answer
- No answer/Don’t know
- Water hygiene
- Destroy abortions
- Avoid contact with infected animals
- Don’t load males for reproduction
- Only buy animal with B3 or B4 classification
- Corral hygiene
- Doing blood test every year

Diagnostic Evaluation
Final Evaluation
Why should we do the flock’s blood test every year?

Porque se faz controlo sanitário/deve “tirar o sangue” anualmente?

No answer /Don't know

Because it’s an obligation

Because it’s necessary

To know the health status of the flock

- Diagnostic Evaluation
- Final Evaluation
Who should be more responsible in the battle against brucellosis?

Quem deve ter mais responsabilidade no combate à brucelose?

- **Not responsible**
  - Veterinarian, Govern, others
- **Co-responsible**
  - Shepherd and veterinarian, govern or others
- **Self responsible**
  - Shepherd

Diagnostic Evaluation
- 0
- 50
- 100
- 150
- 200
- 250
- 300

Final Evaluation
- 0
- 50
- 100
- 150
- 200
- 250
- 300
CONCLUSIONS

- To improve adherence to preventive measures related with animal brucellosis control
- To improve safety behaviour related with human contact with animals and their products

The results showed that educational intervention allowed to the reflection on knowledge and beliefs related with the human/animal Brucellosis and the risk/protection attitudes.

Also increase the adoption of preventive behaviours face to the Brucellosis: self responsibility
CONCLUSIONS

• In view of the obtained results we believe that is important to implement community’s interventions who promote the discussion about the public problems as Brucellosis, because they increase community involvement
  – The best way to eradicate the illness related with animals and to prevent the human contamination, is to reach each person/ shepherd self responsible

• The ecological vision shows greater promise of reaching beyond environmental determinants of health that are under the direct control of individual.
  – It thus avoid putting all the burden of change on the individual (or veterinarian) and possibly escapes the victim-blaming” criticism and “revolving door” complaint often associate with individual-centred approaches.
  – The ecological approach also reach the issues of equity and social justice because it’s seen as more relevant to this clientele’s environment and lifestyle realities.

• This approach could offer financial incentives for individuals and organizations because is an structural intervention who seams more cost-effective than a series of isolated efforts.
BIBLIOGRAPHY

• BRITO, Irma. *Brucelose: Contribuição para a vigilância epidemiológica em áreas endémicas* [Texto policopiado], Coimbra, Dissertação de mestrado em Saúde Pública apresentada à Faculdade de Medicina de Coimbra, 1997


• HUMBERT, Colette; CHONCHOL, Jacques, pref.; RABAÇA, Ana Maria, trad. *Consciencialização : a experiência e a investigação de Paulo Freire*, Psicologia e pedagogia , Lisboa : Moraes, 1977


• MCKENZIE, James F ; NEIGER, Brad L. ; SMELTZER, Jan L. . *Planning, implementing & evaluating health promotion programs*, Edições A PRIMER, San Francisco, 2005
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