Enhancing Animal Welfare by Integrating a Multidisciplinary One Health Approach in Training and Research: A Case Study of University of Nairobi Veterinary Training

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Introduction:
THE ONE HEALTH CONCEPT

Interaction:

ONE HEALTH

HEALTHY ENVIRONMENT

HEALTHY ANIMALS

HEALTHY PEOPLE
Animal welfare training through a transdisciplinary approach

• Influence of animal welfare on Animal, Human and Environmental health on a scale of 1-10 is on upper one third.

• Key players:

Education and training are the most effective tools to solving most of the animal welfare problems (Radeski et al, 2018)
Objectives

1) To evaluate the changes in the knowledge, attitudes and practices on animal welfare resulting from introduction of One Health and Animal Welfare modules in veterinary Curriculum.

2) To determine the constraints to effective practice of good animal welfare principles by the Kenyan rural communities and veterinary extension officers.

3) To determine the effectiveness of evidence-based One Health multidisciplinary approach in embracing animal welfare principles.
Objective 1: Methodology

• Evaluate changes in knowledge, attitudes and practices on animal welfare resulting from introduction of One Health and Animal Welfare modules in veterinary Curriculum.

• One Health Course unit--45 hours: Lectures, Practical, Examination

• Animal Welfare Course unit-45 hours: Lectures, Practical, Examination

• Self-administered questionnaire- 5th year veterinary students

• Pre-module and Post-module comparisons
Objective 2: Methodology

• *Determine the constraints to effective practice of good animal welfare principles by the Kenyan rural communities and veterinary extension officers.*

• Retrieval of data from animal welfare research.

• Previous data collected by questionnaires.

• Focusing on data related to constraints for good animal welfare practice (implementation).

• Animal owners, Stockpersons, Veterinarians, Animal care givers.

• Strategies for future research to improve animal welfare.
Objective 3: Methodology

• *Determine the effectiveness of evidence-based One Health multidisciplinary approach in embracing animal welfare principles*

• Multidisciplinary One Health-focused training with contribution of animal welfare in One Health

• Vet, Public health and Medical students.

• Outreach demo-sites with animal welfare seminars for community outreach coupled with vaccinations and treatment of animals

• Seminars focus on human-animal health interactions (zoonoses)
Demo-site training for community on OH/AW
Veterinarian trained by stop-gap induction on OH/AW—Giving practical experience vet and public health students
Student and oxen owners interaction
OUTCOMES/RESULTS: Knowledge, Attitude and practices

• Two cohorts of Veterinary students completed One Health and Animal Welfare Courses.
  • 2017/2018 a class of 78 students
  • 2018/2019 a class of 66 students

• Some Knowledge, attitude and practice on animal welfare:
  • Pre-module was 61%
  • Post-module was 100%
  • Improvement rate of 39%

• Main improvement for transdisciplinary training is on the attitude
Select number of students trained on One Health and Animal Welfare from each discipline as stop gap measure.

<table>
<thead>
<tr>
<th>Student Discipline</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary</td>
<td>171</td>
<td>55.9</td>
</tr>
<tr>
<td>Medical</td>
<td>52</td>
<td>17.0</td>
</tr>
<tr>
<td>Nursing</td>
<td>31</td>
<td>10.1</td>
</tr>
<tr>
<td>Public health</td>
<td>23</td>
<td>7.5</td>
</tr>
<tr>
<td>Dentistry</td>
<td>15</td>
<td>4.9</td>
</tr>
<tr>
<td>Environmental</td>
<td>14</td>
<td>4.6</td>
</tr>
<tr>
<td>Total</td>
<td>306</td>
<td>100</td>
</tr>
</tbody>
</table>
Main factors that hinder practice of good animal welfare among the Kenyan animal owners.

<table>
<thead>
<tr>
<th>Constraint factor</th>
<th>Number</th>
<th>Percentage (%) (n=80)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finances</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Dilapidated housing</td>
<td>33</td>
<td>41.3</td>
</tr>
<tr>
<td>Improper housing designs</td>
<td>48</td>
<td>60.0</td>
</tr>
<tr>
<td>Limited knowledge/ignorance</td>
<td>43</td>
<td>53.8</td>
</tr>
<tr>
<td>Cultural/Negative beliefs</td>
<td>20</td>
<td>25.0</td>
</tr>
<tr>
<td>Unavailable professional advice</td>
<td>20</td>
<td>25.0</td>
</tr>
<tr>
<td>Unconcerned</td>
<td>20</td>
<td>25.0</td>
</tr>
</tbody>
</table>
Other factors influencing students on animal welfare attitude

- Gender---------female more empathetic than males
- Geographical origin----urban more empathetic than rural
- Type of pre-university schools/institutions
- Exposure and contact to animals
- Pet/companion animals versus food/production animals
- Animal uses
Dilapidated cattle housing
Improper design of feed trough/bunk
Improper design
Effect of ignorance and attitude/lack of professional service
Normal feet
Zerograzing units with cow injuries and cows with injuries

<table>
<thead>
<tr>
<th>Body region</th>
<th>Cows with injuries (n=80)</th>
<th>Cows with injuries (n=306)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Carpal joint</td>
<td>77</td>
<td>96</td>
</tr>
<tr>
<td>Hock joint</td>
<td>76</td>
<td>95</td>
</tr>
<tr>
<td>Rib cage</td>
<td>76</td>
<td>95</td>
</tr>
<tr>
<td>Tuber coxae</td>
<td>72</td>
<td>91</td>
</tr>
<tr>
<td>Ischia area</td>
<td>61</td>
<td>76</td>
</tr>
<tr>
<td>Neck</td>
<td>52</td>
<td>65</td>
</tr>
<tr>
<td>brisket</td>
<td>51</td>
<td>64</td>
</tr>
<tr>
<td>Teat/udder</td>
<td>50</td>
<td>63</td>
</tr>
</tbody>
</table>
Strategy for improved attitude toward animal welfare

• Education/awareness, training and research
• Multidisciplinary/transdisciplinary professional interactions
• Direct/indirect benefits of good welfare
• Policy and law enforcement
References


• Magnani et al (2017): Knowledge and opinions of veterinary students in Italy toward animal welfare, science and law. Veterinary Record doi:10.1136/vr.103938.

• Hewson et al Approaches to teaching animal welfare at 13 veterinary schools world wide. JVME 32: 422-437

• Hristovski et al. 2010, Concept of One Health-a new professional imperative. Macedonian J. Medical Sciences 2010: 3 : 229-232
THANK YOU!
ASANTE SANA!