



A literature evaluation form supports critical reading

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Introduction

Skills in defining a clinical problem, retrieving and critically evaluating information from the literature, and developing independent critical thinking are not widely taught in the veterinary curriculum. Also supporting tools are hardly available.

The objective of this project was to develop and to test a literature evaluation form (LEF) designed to assist veterinary students in appraising the quality of literature on veterinary interventions.

Material and Methods

The LEF comprised statements about study design, information content, and objectivity, and determined rating

Results

The LEF group was able to more reliably assess the quality of the literature. The variability of the chosen evidence levels was higher in the CF group.

Literature Evaluation Form (LEF)

Author(s):	
Title:	
Reference:	
Step 1: Evidence Level	
Metaanalysis (statistical combination of the results of several studies)	5 points
Clinical Trial	3 points
Case Report	2 points
Expert's opinion or experience	1 point

litional quality criteria (regarding the corresponding evidence level)

→ Metaanalysis	agree	
The literature search was exhaustive and reproducible		2 points
The included trials were comparable form a clinical point of view		4 points
Trials of a high quality (randomised, controlled, blinded, trials) were included		2 points
Results are discussed objectively and critically including questions regarding comparability and publication bias		2 points

→ Clinical trial	agree	
The trial comprised a sufficient number of animals or samples		2 point
Essential information regarding the animals is given: number, breed, age, sex, inclusion criteria, housing, etc.		1 point
The trial comprised an adequate control group		3 point
The trial is randomised		1 point
The trial is blinded		1 point
Examinations and interventions are described in detail. Results are presented completely		1 point
Adequate statistic procedures were used. Data is complete or missing data is documented sufficiently.		1 point
Results are discussed critically		1 point
The bibliography is adequate (extent and up to date)		1 point
→ Case Report	agree	
Essential information regarding the animals is given: number, breed, age, sex, inclusion criteria, housing, etc.		2 point
Examinations and interventions are described in detail.		2 point
Results are discussed critically		2 point
The bibliography is adequate (extent and up to date)		1 point
→ Expert's opinion or experience	agree	

How to use the LEF 1: Determine the evidence level 2: Evaluate additional quality criteria 3: Sum up the rating points to obtain the overall rating score

Control Form (CF)

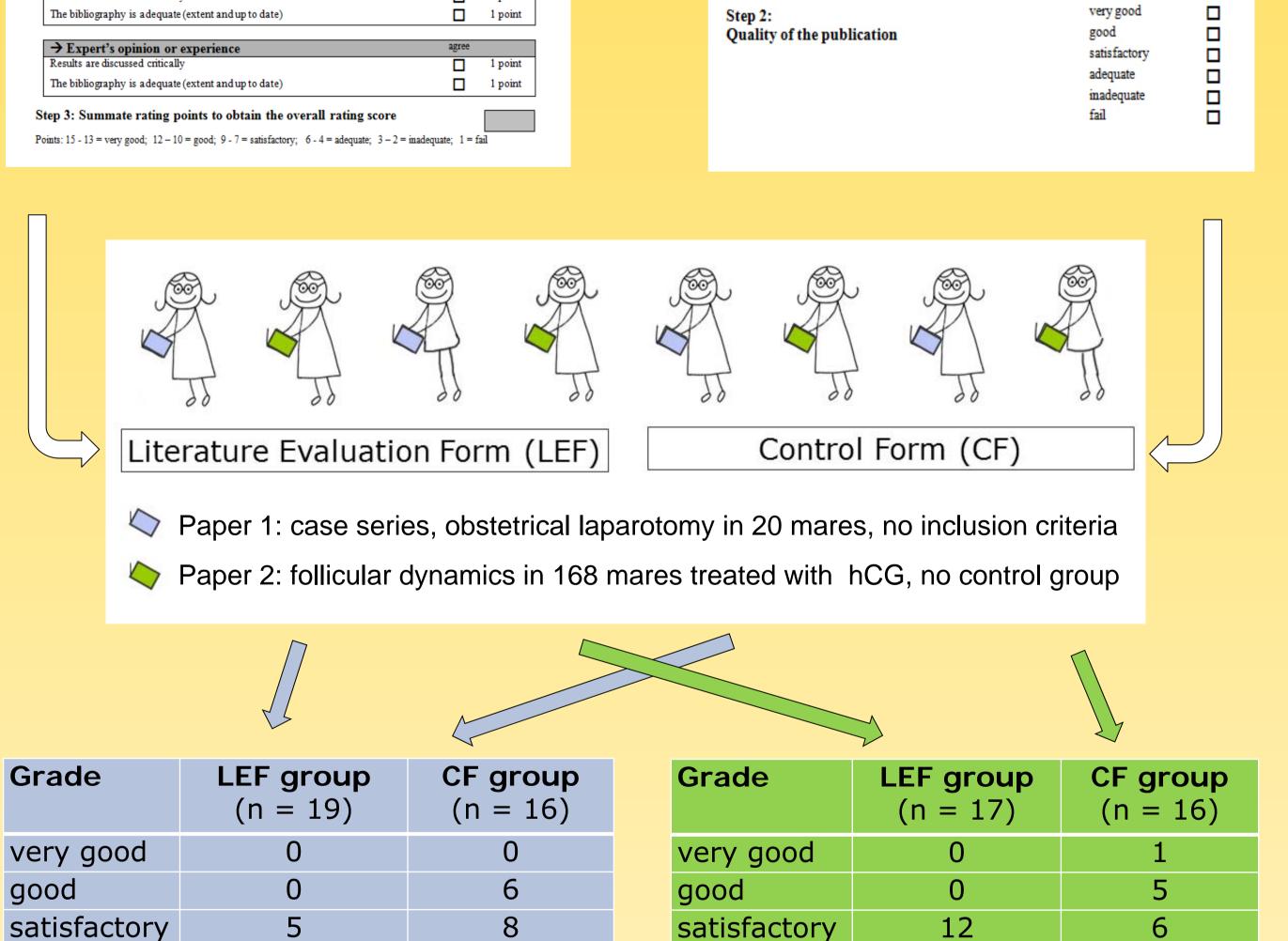
Author(s): Title:			
Reference:			
Step 1: Evidence Level			
Metaanalysis (statistical combination of the results of several studies) Clinical Trial Case Report Expert's opinion or experience			
Step 2: Quality of the publication	very good good satisfactory adequate		

points to obtain an overall score.

The 68 participants were in their fifth year of study and attended a clinical rotation at the Clinic for Animal Reproduction in 2010. Half of the students were provided with the LEF. As a control group, the other half of participants used a control form (CF) and ranked the quality of the article without assistance. Two German papers with some flaws were selected (paper 1 and 2).

Evaluation of the project (n = 61)	totally agree	agree	neutral	disagree	totally disagree
	number of answers				
By using the LEF it is easier to evaluate the quality of scientific information	10	38	10	3	0
By using the LEF I assessed criteria that I would have not considered otherwise	22	28	8	3	0

By using the LEF evaluation is more



Results of evaluation of	paper 1 (He	ospes et al. 2000)
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11

3

0

3.9

adequate

average

fail

inadequate

Results of evaluation of paper 2 (Bollwein and Braun 1999)

0

2.9

0

0

3.0

objective	7	35	18	1	0
Using the LEF facilitates the consideration whether information should be integrated into practice or not	4	25	26	5	1
Considering the quality of scientific information is important	29	29	2	1	0
Critical appraisal of information should be adequately trained in veterinary education	31	22	7	1	0

References

Arlt, S.; Heuwieser, W. (2011): Training Students to Appraise the Quality of Scientific Literature, Journal of Veterinary Medical Education, 38 (2), 135-140

Paper 1: Hospes et al. (2000): Erfahrungen mit der geburtshilflichen Laparotomie bei Zuchtstuten unter Berücksichtigung strenger Indikationsstellung. Tierarztl Prax, 28:159-165.

Paper 2:Bollwein H, Braun J. (1999): Follikeldynamik nach Anwendung von hCG für die Ovulationsinduktion bei der Stute. Tierarztl Prax 27:47-51.

Conclusions

0

2.8

adequate

average

fail

inadequate

The LEF was found to be a useful tool for the systematic assessment of the quality of publications within a reasonable period of time. Seventy-eight per cent of the participants agreed that the LEF helped them evaluate the quality and validity of scientific information. 87% of the students supported teaching of critical appraisal of information.