Supplementary material

Table 1: Search Terms Used to identify critical appraisal tools for cross sectional studies

Database	Number	
Medline 1948 to September Week 3 2011	71	Critical appraisal.mp. AND (exp Cross-Sectional Studies/ OR cross sectional.mp.)
CAB 1910 to 2011 Week 38	4	Critical appraisal.mp. AND cross sectional.mp.
Web of Science℠ (1899-present)	60	Topic=(Critical appraisal) AND Topic=(cross sectional)
BIOSIS Previews® (1969-present)	12	Topic=(Critical appraisal) AND Topic=(cross sectional)
Zoological Record® (1978-present)	0	Topic=(Critical appraisal) AND Topic=(cross sectional)
Embase 1974 to 2011 October 03	65	Critical appraisal.mp. AND (exp cross-sectional study/ OR cross sectional.mp.)
CINAHL® with Full Text	23	((MM "Cross Sectional Studies") OR "cross sectional") AND "Critical appraisal"
PsycINFO 1806 to September Week 4 2011	9	Critical appraisal.mp. AND cross sectional.mp.
Total	244	

Table 2. The 1st draft of a CA tool including components that were identified as relevant to critical appraisal of cross sectional studies post review of the literature.

	Question	**Yes**	**No**	**Don't know/ Comment**
Introduction				
1	Are the aims of the study clearly stated?			
Methods				
2	Is the type of study design appropriate for the stated aim?			
3	Is the sample size justified (based on pre-study considerations of statistical power)?			
4	Is the target or reference population clearly defined? (is it clear who the research was about)			
5	Is the sample frame taken from an appropriate population base so that it closely represents the overall population under investigation?			
6	In the selection process:			
	a. Were any inclusion/exclusion criteria used?			
	b. Was random selection used to obtain participants?			

7	Is the selection process likely to select subjects that were representative of the study population of interest?			
8	If appropriate, were measures undertaken to address and categorise non-responders?			
9	Do the variables measured, in the study, produce data that reflect the aims of the study? (Validity)			
	a. Are the outcomes of interest clearly measured?			
	b. Are the risk factors appropriately measured to be compared to the outcomes of interest?			
10	If appropriate, have the measurement instruments been trialled, piloted or published previously? (Reliability and reproducibility)			
11	Are the statistical methods clearly stated?			
12	If appropriate, is the means by which statistical significance is inferred stated?			
13	Are the methods sufficiently described to enable them to be repeated?			
Results				
14	Are the basic data adequately described?			
15	Is the response rate given, if appropriate?			
16	Is information about non-responders described, if appropriate?			
17	Are the results internally consistent?			
	a. Do the numbers add up?			
	b. Are any missing data acknowledged, or described?			
18	Are the results described objectively without author opinion?			
19	Are results pertaining to the study aim reported?			
20	If appropriate is the statistical significance level declared in the methods adhered to?			
21	Are the results of all tests described in the methods presented?			
Discussion				
22	Are all results pertaining to the study aim discussed?			
23	Are the limitations of the study discussed?			
24	Is selection bias addressed?			
25	Is non-response addressed?			
26	Do the authors address any relevant reasons for their findings, other than the tested hypothesis (Confounding)?			
27	If appropriate are non-significant results discussed?			
	a. Do the authors consider issues around study design when interpreting non-significant results?			
	b. Do the authors consider issues around sample size when interpreting non-significant results?			
Conclusions				
28	Are the authors' conclusions justified by the results?			
Other				
29	Are any conflicts of interest/funding declared in the text?			
30	Was ethical aspect approval or consent of participants attained?			

Table 3. The 2nd draft of a CA tool including components that were identified as relevant to critical appraisal of cross sectional studies post piloting with the Centre for Evidence-based Veterinary Medicine (UoN), the Population Health and Welfare group (UoN), the Centre for Veterinary Epidemiology and Risk Analyses (UCD) and the online forum of experts in evidence based veterinary medicine. This draft was used in the first round of the Delphi panel and the results of the consensus from the panel or each component are presented.

	Consensus
Introduction	
1. Is it clear what the aims of the study were?	94.12
Methods	
2. Was the type of study design appropriate for the stated aim?	94.12
3. Was the sample size justified (based on pre-study considerations of statistical power)?	76.47
4. Was the target or reference population clearly defined? (is it clear who the research was about?)	100.00
5. Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?	88.24
6.a. In the selection process: Were any inclusion/exclusion criteria used?	82.35
6.b. In the selection process: Was random selection used to obtain participants?	70.59
7. Was the selection process likely to select subjects that were representative of the study population of interest?	93.33
8. If appropriate, were measures undertaken to address and categorise non-responders?	87.50
9. Did the variables measured in the study, produce data that reflected the aims of the study? (Validity)	68.75
9.a. Were the outcomes of interest clearly measured?	86.67
9.b. Were the risk factors measured appropriate to the outcomes of interest?	66.67
10. If appropriate, had the measurement instruments been trialled, piloted or published previously?	93.33
11. Is it clear what statistical methods were used?	86.67
12. If appropriate is it possible to determine the means by which the statistical significance was inferred? (p-values, confidence intervals)	64.29
13. Were the methods sufficiently described to enable them to be repeated?	87.50
Results	
14. Were the basic data adequately described?	75.00
15. If appropriate, was the response rate sufficient to base conclusions on?	93.75
16. If appropriate, was information about non-responders described?	93.75
17. Were the results internally consistent?	57.14
17.a. Did the numbers add up?	56.25
17.b. Were any missing data acknowledged, or described, if appropriate?	93.75

18. Were the results described objectively without author opinion?	43.75
19. Were the results pertaining to the study aim reported?	81.25
20. If appropriate, was the statistical significance level declared in the methods adhered to?	68.75
21. Were the results of all tests described in the methods presented?	93.75
22. Were all results pertaining to the study aim discussed?	56.25
Discussion	
23. Were the limitations of the study discussed?	81.25
24. Was selection bias discussed appropriately?	62.50
25. Was non-response discussed appropriately?	68.75
26. Did the authors address any relevant reasons for their findings, other than the tested hypothesis (Confounding)?	53.33
27. If appropriate, were non-significant results discussed?	50.00
27.a. Did the authors consider issues around study design when interpreting non-significant results?	50.00
27.b. Did the authors consider issues around sample size when interpreting non-significant results?	50.00
28. Were the authors' conclusions justified by the results?	93.75
Other	
29. Were any conflicts of interest/funding declared in the text?	93.75
30. Was ethical approval or consent of participants attained?	81.25

Table 4. The 3rd draft of a CA tool created following round 1 of the Delphi study after comments and consensus was taken into account. Results on consensus for each question from the round 2 of a Delphi panel are presented.

	Consensus*
Introduction	
1. Is it clear what the aims of the study were?	
Methods	
2. Was the type of study design appropriate for the stated aim?	
3. If appropriate, was the sample size justified?	68.75
4. Was the target or reference population clearly defined? (Is it clear who the research was about?)	
5. Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?	
6. Was the selection process likely to select subjects that were representative of the study population of interest?	
7. Were measures undertaken to address and categorise non-responders?	81.25
8. Would the variables measured in the study produce data that reflected the aims of the study? (Validity)	62.5
9. Is it clear what statistical methods were used?	50
10. Is it clear how statistical significance was determined? (eg: p-values, confidence intervals)	62.5
11. Were the methods sufficiently described to enable them to be repeated?	
Results	
12. Were the basic data adequately described?	
13. If appropriate, was the response rate sufficient to enable sound conclusions to be drawn?	56.25
14. If appropriate, was information about non-responders described?	
15. Were the results internally consistent?	
16. Were all the results of the analyses described in the methods presented?	60
17. If a statistical significance level was declared in the methods, was it adhered to in the results?	31.25
Discussion	
18. Were the authors' discussions and conclusions justified by the results?	87.5
19. Were the limitations of the study discussed?	
Other	
20. Were there any funding sources or conflicts of interest that were likely to affect the authors' interpretation of the results?	75
21. Was ethical approval or consent of participants attained?	

**Where no consensus figure is given, consensus was reached on this question in the previous round.*