Qualitative assessment of precocious puberty-related user-created contents on YouTube

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Introductions

User-created content (UCC) has provided a considerable amount of medical information and become an important source. It is important that medical professionals warn patients about the potential risks of obtaining information from UCC. The **aim** of this study was to examine the quality and scientific accuracy of the information available on YouTube regarding precocious puberty.

Materials and Methods

The keywords "precocious puberty," "early puberty," "sexual precocity," and "precocity" were searched for on YouTube during June and July 2014. More than 1,500 UCC matched the keywords. According to the information provider, UCC was classified as medical, oriental, or commercial & others. We evaluated the quality and scientific accuracy of the information provided in UCC using the DISCERN instrument and information scores, respectively. The duration and the number of times that the UCC had been viewed were analyzed.
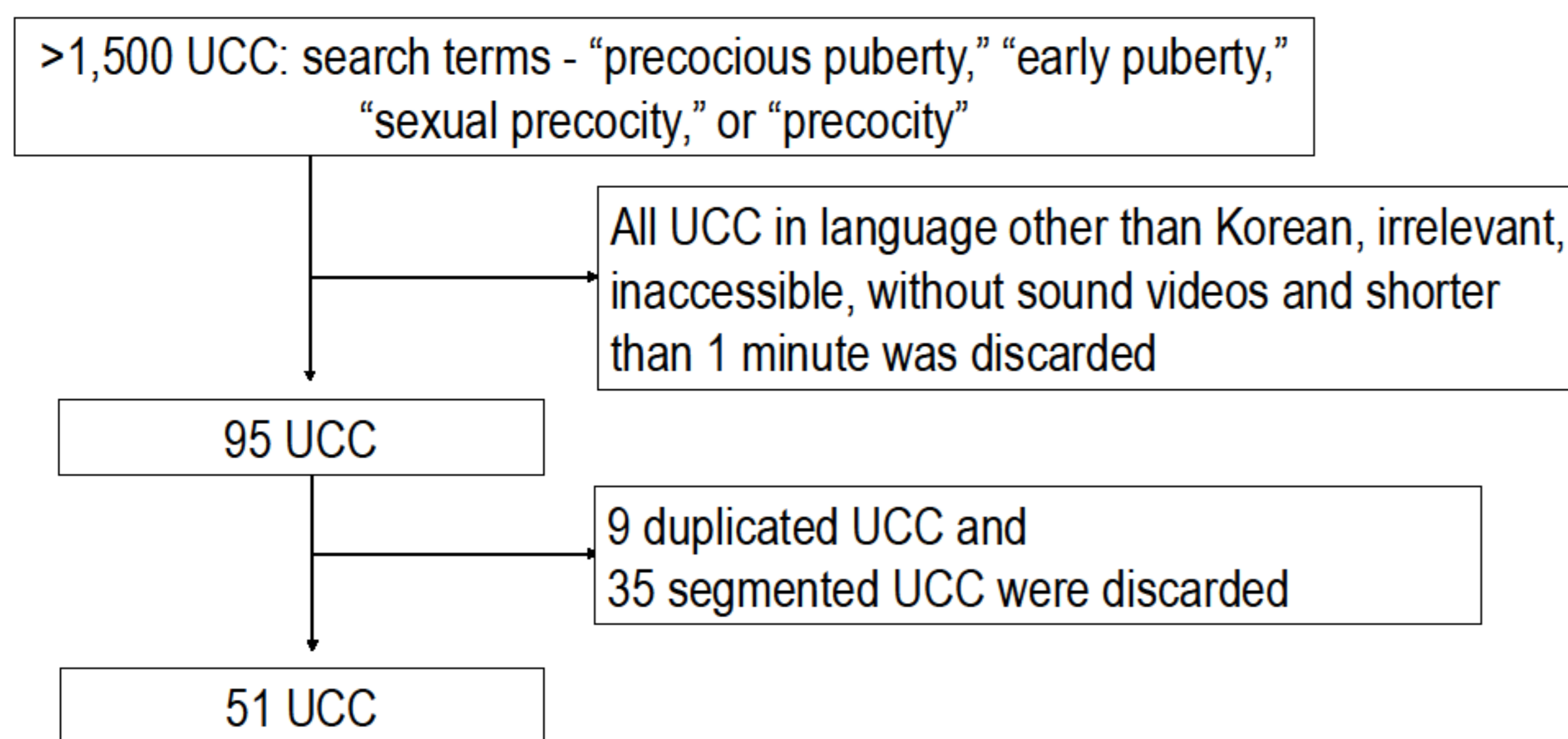
> >1,500 UCC: search terms - "precocious puberty," "early puberty," "sexual precocity," or "precocity"

> All UCC in language other than Korean, irrelevant, inaccessible, without sound videos and shorter than 1 minute was discarded

> 95 UCC

> 9 duplicated UCC and 35 segmented UCC were discarded

> 51 UCC

Fig. 1. Flow diagram showing method of UCC selection

Results

Table 1. DISCERN score according to information provider

DISCERN questions	Mean score			Total score	P-value
	medical (n=17)	oriental (n=17)	commercial & others (n=17)		
1. Explicit aims	3.8 ± 1.5	4.5 ± 0.9	2.7 ± 1.0	3.7 ± 1.4	<0.001
2. Aims achieved	4.4 ± 1.4	5.0 ± 0.0	4.0 ± 1.1	4.5 ± 1.1	0.021
3. Relevance to patients	4.2 ± 1.5	1.4 ± 0.5	1.5 ± 1.0	2.4 ± 1.7	<0.001
4. Source of information	3.0 ± 0.7	3.0 ± 0.0	2.9 ± 1.2	3.0 ± 0.8	0.679
5. Currency (date) of information	1.0 ± 0.0	1.1 ± 0.2	1.3 ± 1.0	1.1 ± 0.6	0.345
6. Bias and balance	4.7 ± 1.0	2.1 ± 1.0	2.1 ± 0.9	2.9 ± 1.5	<0.001
7. Additional sources of information	1.6 ± 1.2	1.7 ± 1.6	1.9 ± 1.5	1.8 ± 1.4	0.827
8. Reference to areas of uncertainty	3.5 ± 1.5	2.3 ± 1.4	1.9 ± 1.2	2.6 ± 1.5	0.007
9. How treatment works	4.4 ± 1.2	2.2 ± 1.4	2.6 ± 1.6	3.0 ± 1.7	<0.001
10. Benefits of treatment	3.8 ± 1.2	3.7 ± 1.0	2.2 ± 1.4	3.2 ± 1.3	0.001
11. Risks of treatment	2.3 ± 1.8	1.3 ± 0.8	1.0 ± 0.0	1.5 ± 1.3	0.010
12. No treatment options	4.3 ± 1.2	4.2 ± 1.6	3.5 ± 1.4	4.0 ± 1.4	0.226
13. Quality of life	3.4 ± 1.6	4.2 ± 1.2	3.3 ± 1.4	3.6 ± 1.4	0.097
14. Other treatment options	3.0 ± 1.7	2.0 ± 0.0	1.6 ± 0.8	2.2 ± 1.2	0.004
15. Shared decision making	3.1 ± 1.7	3.5 ± 1.4	2.0 ± 1.7	2.8 ± 1.7	0.029
16. Overall quality	3.4 ± 0.8	2.8 ± 0.5	2.3 ± 0.5	2.8 ± 0.7	<0.001

Table 2. Information score according to information provider

Subheading and questions		Mean score			Total score	P-value
		medical (n=17)	oriental (n=17)	commercial & others (n=17)		
Definition		6.9 ± 3.5	5.1 ± 3.8	1.1 ± 2.6	4.4 ± 4.0	<0.001
Cause and classification	HPG axis	0.7 ± 1.3	0.2 ± 0.7	0.0 ± 0.0	0.3 ± 0.9	0.056
	Central & peripheral PP	0.8 ± 1.3	0.4 ± 0.9	0.0 ± 0.0	0.4 ± 1.0	0.054
	Influencing factors	2.4 ± 1.0	1.2 ± 0.8	0.7 ± 0.9	1.4 ± 1.1	<0.001
Diagnosis	Clinical features	2.3 ± 1.3	1.9 ± 1.0	0.8 ± 1.3	1.6 ± 1.4	0.002
	Bone age	1.5 ± 1.5	1.1 ± 1.5	0.0 ± 0.0	0.8 ± 1.3	0.002
	GnRH stimulation test	1.1 ± 1.2	0.4 ± 0.7	0.0 ± 0.0	0.5 ± 0.8	0.156
Treatment	GnRH agonist	5.3 ± 4.6	0.0 ± 0.0	0.0 ± 0.0	1.8 ± 3.6	<0.001
	Underlying disease	1.0 ± 1.5	0.6 ± 1.0	0.2 ± 0.8	0.7 ± 1.1	0.150
	Duration of treatment	0.7 ± 1.3	0.2 ± 0.4	0.0 ± 0.0	0.3 ± 0.8	0.105
	Efficacy of treatment	0.5 ± 1.2	0.1 ± 0.3	0.0 ± 0.0	0.2 ± 0.7	0.204
	Complications	0.8 ± 1.3	0.0 ± 0.0	0.0 ± 0.0	0.2 ± 0.8	0.003
	Conservative management	1.4 ± 1.5	1.3 ± 0.8	0.9 ± 1.1	1.2 ± 1.2	0.433
Prognosis		5.3 ± 2.0	3.4 ± 2.4	1.4 ± 2.2	3.4 ± 2.7	<0.001
Total score		30.7 ± 16.6	15.9 ± 9.0	5.1 ± 5.0	17.2 ± 15.3	<0.001

Values are mean ± SD

Table 3. Comparison of views, duration, information score and DISCERN score according to information provider

	Medical (n=17)	Oriental (n=17)	Commercial & others (n=17)	Total	P-value
Views	4,344	269	475	1,696	0.086
Duration (mm'ss")	7'50"	29'44"	4'38"	14'04"	<0.001
Information score	30.7	15.9	5.1	17.2	<0.001
DISCERN score	3.4	2.8	2.3	2.8	<0.001

Summary

- We selected 51 UCC, which were categorized into three types: medical (n=17), oriental (n=17), or commercial & others (n=17).
- The overall quality score for medical UCC (3.4) was significantly higher relative to those of oriental and commercial & others UCC (2.8 and 2.3, respectively).
- In the assessment of scientific accuracy, the mean information score for medical UCC (30.7) was significantly higher than those of oriental and commercial & others UCC (15.9 and 5.1, respectively).
- The mean duration of oriental UCC was the longest, however, it was viewed less frequently among them.

Conclusions

The quality and accuracy of precocious puberty-related health information in UCC were variable and often unreliable. The overall quality of UCC regarding precocious puberty was moderate. Only medical UCC provided scientifically accurate information. As UCC becomes a popular source of health information, it is important to provide reliable, scientifically accurate information.