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Does animal health and welfare of organic pigs differ between husbandry systems?



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Background & Aim

In the CORE Organic II project ProPIG, animal health and welfare (AHW) of organic pigs on 74 farms in 8 European countries was assessed to compare three husbandry systems:

- indoor with outside run (IN: n = 34 farms)
- outdoor (OUT: n = 12)
- partly outdoor (POUT: n = 28)

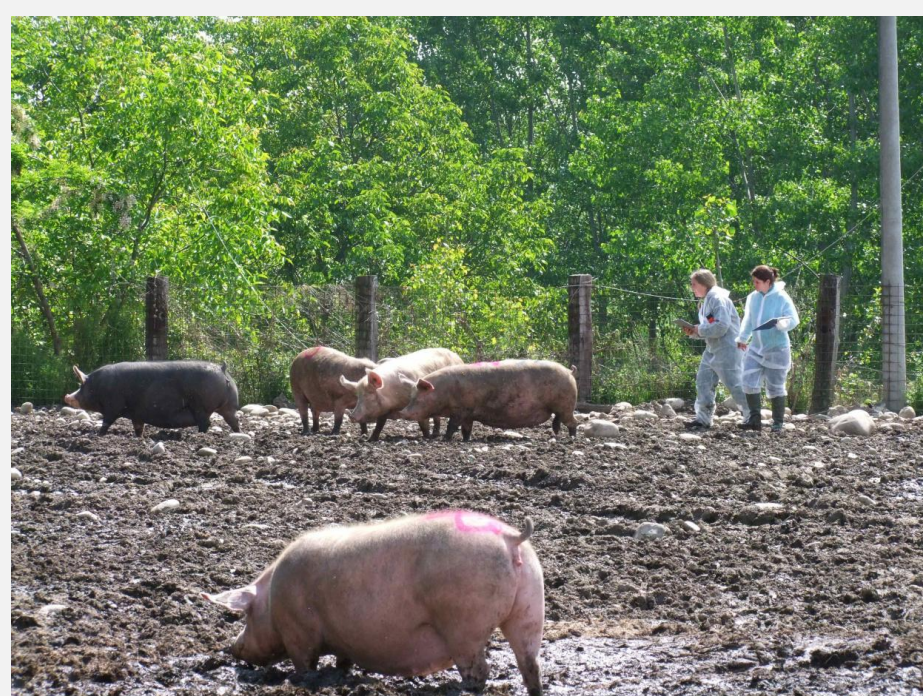
The hypothesis was that all three systems can deliver good AHW when well managed.

Conclusions

- Across systems prevalences of most AHW problems were low except respiratory problems in IN and POUT and diarrhoea in IN.
- OUT was beneficial with regard to several areas of AHW, which could be explained by the environmental conditions, e.g. respiratory problems (air quality), diarrhoea (exposure to faeces) and lameness (flooring).
- POUT farms in most cases kept SO outdoors and WE and FA similar to IN farms, and this was reflected in the results obtained for these animal categories.

Method

- 7 trained observers assessed pregnant sows (SO), weaners (WE) and fatteners (FA) using animal-based parameters
- during one-day farm visits



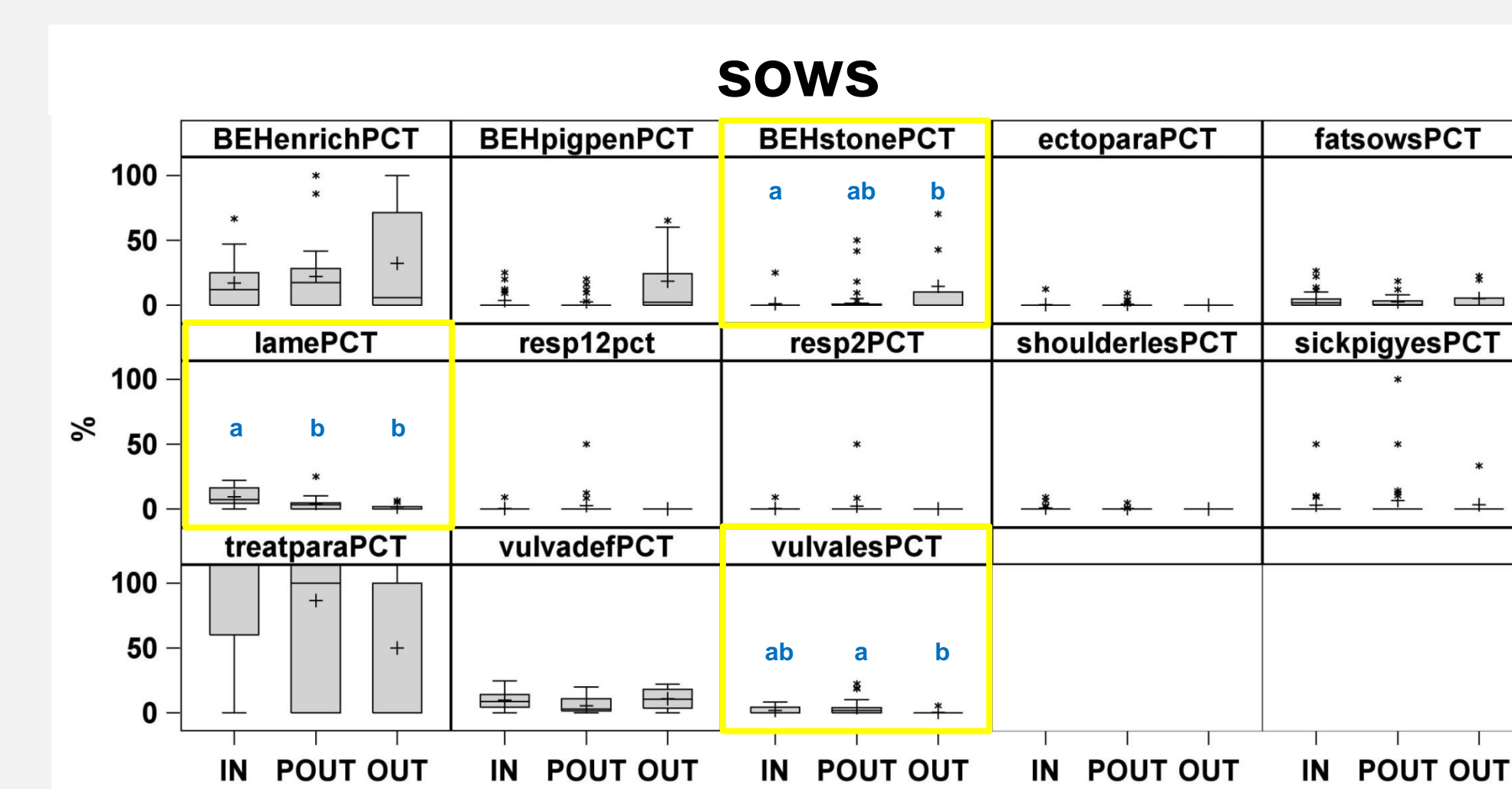
- using tablet PC and "PigSurfer"



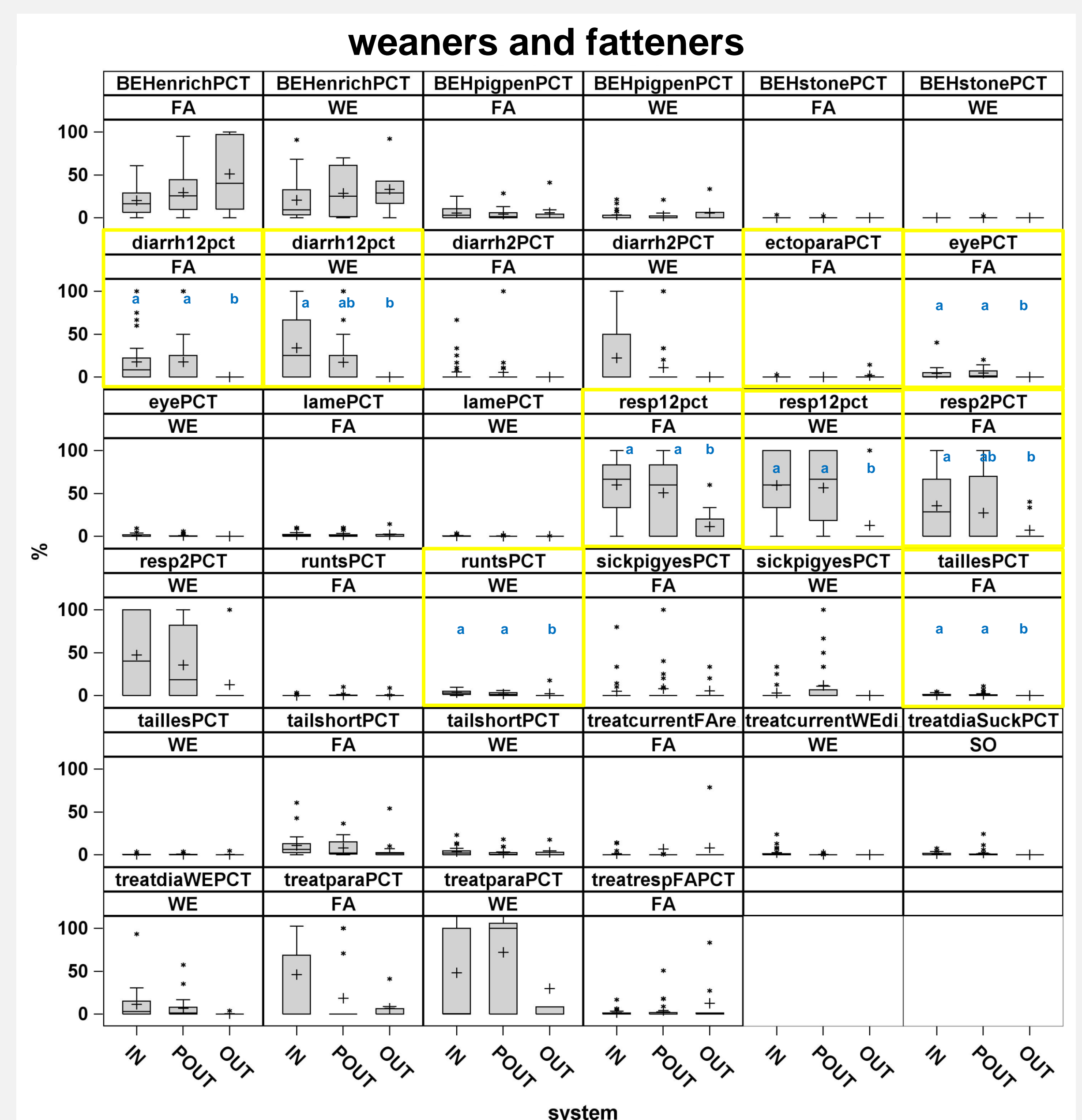
- system differences tested with global Kruskal-Wallis test; if significant ($p < 0.05$) followed by pairwise comparisons with Wilcoxon Rank Sum test (Bonferroni corrected)

Results

Parameter [median (Q1-Q3)]		indoor	partly outdoor	outdoor
total pigs observed [n]	SO	24 (18 - 54; 23)	68.5 (29.5 - 94; 28)	43 (29 - 57; 10)
	WE	83 (40 - 142; 23)	171.5 (72 - 250; 26)	52.5 (29 - 142; 8)
	FA	148 (90 - 262; 27)	111 (91 - 227; 26)	94 (49 - 154; 10)
piglets born / litter (life + still born) [n, 1yr mean]	SO	13 (12 - 14;) ^a	13.4 (12 - 14) ^a	8.8 (7 - 12) ^b
piglets weaned per litter [n, 1yr mean]	SO	9.7 (9 - 10.3) ^a	9.8 (9 - 11) ^a	7.3 (5 - 9.6) ^b
litters per sow [n, 1yr mean]	SO	2 (1.9 - 2.1)	2 (1.9 - 2)	2 (1.7 - 2)
piglets weaned per sow per year [n, 1yr mean]	SO	19.4 (16.6 - 21)	19 (16 - 21)	13.5 (10 - 18.6)
suckling piglet losses [%, 1yr mean]	SO	21.3 (19.6 - 32.1)	21.6 (16.5 - 28.6)	19.2 (14.9 - 27.3)
MMA treatments [%sows]	SO	16.5 (8 - 43.8) ^a	1.6 (0 - 5.3) ^b	0 (0 - 0) ^c
sow replacement rate [%, 1yr mean]	SO	30 (20 - 33) ^{ab}	31 (25 - 45) ^a	17 (10 - 35) ^b
culling age [n farrowings]	SO	6 (5 - 7)	5 (4 - 8)	7 (2 - 8)
losses [%, 1yr mean]	WE	3.5 (1.5 - 5)	5 (3 - 5)	4 (3 - 5)
	FA	1 (1 - 3) ^a	3 (2 - 4) ^b	3.5 (1 - 5) ^{ab}
feed conversion rate	FA	3.2 (2.9 - 3.6)	3.3 (3 - 3.9)	4.4 (2.9 - 6.5)



sows, weaners and fatteners	
BEHenrichPCT	manipulating enrichment [%a]
BEHpigpenPCT	manipulating pig, pen or muck [%a]
BEHstonePCT	manipulating stones [%a]
diarrh12pct	diarrhoea score 1 or 2 [%g]
diarrh2PCT	diarrhoea score 2 [%g]
ectoparaPCT	ectoparasites [%a]
eyePCT	eye inflammation [%a]
fatsowsPCT	fat sows [%a]
lamePCT	lame animals [%a]
resp12pct	respiratory problems score 1 or 2 [%g]
resp2PCT	respiratory problems score 2 [%g]
runtsPCT	runts [%a]
shoulderlesPCT	shoulder lesions [%a]
sickpigyesPCT	pigs needing hospitalisation [%g]
taillesPCT	tail lesions [%a]
tailshortPCT	short tail [%a]
treatcurrentFArespPCT	respiratory problems, % of current FA treated
treatcurrentWEdiaPCT	diarrhoea, % of current WE treated
treatdiaSuckPCT	diarrhoea, % of total born suckling piglets treated
treatdiaWEpct	diarrhoea, % of weaners raised treated
treatparaPCT	anti-parasite treatment [%a]
treatrespFAPCT	respiratory problems, % of slaughtered pigs treated
vulvadePCT	vulva deformation [%a]
vulvalesPCT	vulva lesions [%a]



Parameters are identified via abbreviations above the respective boxplot, which in turn are explained in the table. Different letters indicate differences with $p < 0.05$

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