

Manuscript PUS-18-0133.R1: *The public uptake of information about antibiotic resistance in the Netherlands.*

Supplementary files

Appendix 1 Text of intervention

Source:

<https://www.youtube.com/watch?v=PcTrpumqXW8&feature=youtu.be>

Type: Film. **Duration:** 1:29m.

Translation of spoken text into English:

Title: “How does antibiotic resistance emerge?”

Bacteria are very small organisms that often multiply rapidly. Every person carries good and bad bacteria. The presence of bad bacteria can cause an infection which can make you sick. A bacterial infection can be combatted with antibiotics. The antibiotics destroy bacteria or slow them down in their growth. This provides your body the chance to recover. In some cases the bacteria are not sensitive to an antibiotic. These bacteria are resistant because they have protected themselves against the antibiotic. While the sensitive bacteria have been destroyed by the antibiotic, it leaves room for the resistant bacteria to multiply. Then the infection is caused by resistant bacteria. This type of infection is more difficult to treat because the usual antibiotics are no longer working and doctors have to choose for antibiotics of which there is less experience with or have more side effects. Too much or wrong use of antibiotics increases the chance that the bacteria become resistant. That is why it is important to carefully consider whether the use of antibiotics is necessary. This way, the treatment of infections remains also possible in the future.

Appendix 2. Measuring cultural predispositions and health beliefs

Cultural predisposition	Variable	Question	Answer categories	Remark
		Anomie	Strongly agree (1) - Strongly disagree (5)	Scores were recoded - higher score = higher level of anomie
	v1	These days you don't really know whom you can count on		
	v2	To get a better life you have to be lucky		
	v3	It is irresponsible to get children at this time in the world		
	v4	Nowadays, what you feel or think does not count anymore		
		Utilitarian individualism	Strongly agree (1) - Strongly disagree (5)	
	v5	I usually impose my self-interest above that of others		recoded
	v6	I enjoy it when I do other people a favour		recoded
	v7	If I do something for someone, then I want something in return		
	v8	I don't often think about the interests of others		recoded
	v9	I quickly attract the problems of others		
		Institutional trust	(1) No trust, (2) Low trust, (3) Neutral, (4) Trust, (5) A lot of trust	
		To what extent do you have trust in these institutions in the Netherlands?		
	v34	Politics		
	v35	Science		
	v36	Judiciary power		
	v37	Media		
	v38	RIVM (National Institute for Public Health and the Environment)		
		Environmental concern	(1) Strongly agree - (5) Strongly disagree	
	v25	It is just too difficult for someone like me to do much about the environment		
	v26	I do what is right for the environment, even when it costs more money or takes more time		recoded
	v27	We worry too much about the future of the environment and not enough about economic issues like employment		
	v28	People worry too much about economic progress harming the environment		

	v29	Modern science will solve our environmental problems with little change to our way of life		
	v30	In order to protect the environment, the Netherlands needs economic growth		
	v31	How willing would you be to pay much higher prices in order to protect the environment?	(1) Very willing – (5) Very unwilling	recoded
	v32	How willing would you be to pay much higher taxes in order to protect the environment?		recoded
	v33	How willing would you be to accept cuts in your standard of living in order to protect the environment?		recoded
Holism				
	v20	Body, spirit and mind are connected to each other	(1) Strongly agree - (5) Strongly disagree	recoded
	v21	The believe in the spiritual or in God is nothing for me, there is nothing outside our earthly existence		
	v22	Some alternative medicine work at least as well as regular treatment methods		recoded
	v23	There is a kind of spirit or life force that is present everywhere		recoded
	v24	The divine is not somewhere out there, but within every person		recoded
Measuring health beliefs about antibiotic resistance				
Health belief	Variable	Question	Answer categories	Remark
Perceived severity				
	v61	I think the threat of antibiotic resistance is ...		Total scale recoded - higher score = higher perceived severity
	v62	That people save leftovers from an antibiotic cure to take it at a later time on their own initiative, is ...		
	v63	That people prematurely and on their own initiative stop with an antibiotic cure without consulting a general practitioner, is ...		
	v64	That antibiotic resistance can pose great danger to public health is ...		
	v66	The reporting about the risks of antibiotic resistance is exaggerated	(1) Strongly agree - (5) Strongly disagree	
	v74	How likely do you think that antibiotic resistance will continue to pose a major public health risk in the future?	(1) Very unlikely - (5) Very likely	

Perceived susceptibility		(1) Very unlikely - (5) Very likely	Scale recoded - higher score = higher perceived susceptibility
	How likely do you think you can get an antibiotic-resistant bacterium by ...		
v75	physical contact with a person who is already infected		
v76	hospitalization		
v77	physical contact with an animal		
v78	bad hand hygiene		
Awareness of risk of non-prudent antibiotic use to antibiotic resistance		(1) Strongly disagree - (5) Strongly agree	
v79	When I use antibiotics unnecessarily, excessively or incorrectly, the risk of developing antibiotic resistance is increased		
v80	When others use antibiotics unnecessarily, excessively or incorrectly, the risk of developing antibiotic resistance is increased		
v81	When I'm feeling ill, I'm willing to wait not to use an antibiotic unnecessarily		
v82	When I use antibiotics unnecessarily, excessively or incorrectly, then I endanger public health		
v83	When others use antibiotics unnecessarily, excessively or incorrectly, then they endanger public health		
Proxy on prudent use of antibiotics		(1) Strongly disagree - (5) Strongly agree	
v84	It is useful to save leftovers from an antibiotic cure for a later moment in time		recoded
v85	When I experience side-effects during an antibiotic treatment, I will stop the antibiotic treatment on my own initiative, without consulting with the GP		recoded
v86	When I feel better during the antibiotic treatment, it is unnecessary to finish the course		recoded
v87	I decide on for myself whether I need antibiotics		recoded
v88	I will accept the decision made by the GP when the GP tells me I don't need antibiotics		

Note: Original survey is in Dutch

Appendix 3: Pearson *r* correlation coefficients between cultural predispositions, level of knowledge on antibiotics and antibiotic resistance, and on health beliefs towards antibiotic resistance

<i>Variables</i>		(1)	(2)	(3)	(4)	(5)	(6)
<i>Cultural predisposition</i>	Holism (1)	1	0.127***	-0.081**	0.006	-0.249***	0.057*
	Environmental concern (2)	0.127***	1	0.231***	-0.289***	-0.229***	0.190***
	Institutional trust (3)	-0.081**	0.231***	1	-0.443***	-0.046	0.140***
	Anomie (4)	0.006	-0.289***	-0.443***	1	0.151***	-0.170***
	Utilitarian Individualism (5)	-0.249***	-0.229***	-0.046	0.151***	1	-0.169***
<i>Knowledge</i>	On antibiotics and resistance (6)	0.057*	0.190***	0.140***	-0.170***	-0.169***	1
<i>Health beliefs</i>	Perceived severity (7)	0.103***	0.220***	0.118***	-0.074**	-0.269***	0.398***
	Awareness on risk of non-prudent use (8)	0.065**	0.264***	0.165***	-0.116***	-0.176***	0.376***
	Proxy on prudent use (9)	-0.007	0.077**	0.169***	-0.138***	-0.235***	0.280***
	Perceived susceptibility (10)	-0.013	0.083***	-0.027	0.053*	-0.011	0.012
<i>Dependent</i>	General awareness about antibiotic resistance (11)	0.066**	0.236***	0.191***	-0.139***	-0.281***	0.440***

<i>Variables</i>		(7)	(8)	(9)	(10)	(11)
<i>Cultural predisposition</i>	Holism (1)	0.103***	0.065**	-0.007	-0.013	0.066**
	Environmental concern (2)	0.220***	0.264***	0.077**	0.083***	0.236***
	Institutional trust (3)	0.118***	0.165***	0.169***	-0.027	0.191***
	Anomie (4)	-0.074**	-0.116***	-0.138***	0.053*	-0.139***
	Utilitarian Individualism (5)	-0.269***	-0.176***	-0.235***	-0.011	-0.281***
<i>Knowledge</i>	On antibiotics and resistance (6)	0.398***	0.376***	0.280***	0.012	0.440***
<i>Health beliefs</i>	Perceived severity (7)	1	0.520***	0.502***	0.051*	0.826***
	Awareness on risk of non-prudent use (8)	0.520***	1	0.348***	0.0151	0.798***
	Proxy on prudent use (9)	0.502***	0.348***	1	-0.060*	0.769***
	Perceived susceptibility (10)	0.051*	0.151***	-0.060*	1	0.063**
<i>Dependent</i>	General awareness about antibiotic resistance (11)	0.826***	0.798***	0.769***	0.063**	1

Note: N = 1779 for cultural predispositions, N = 1780 for knowledge and health beliefs

Appendix 4. Cluster analysis on cultural predispositions (N=1779)

	Institutional trust		Utilitarian individualism		Anomie		Environmental concern	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Trusting	3.70	0.44	2.20	0.36	2.27	0.44	3.36	0.50
Apathetic	2.73	0.66	2.51	0.49	3.27	0.58	2.54	0.41
Worried	2.69	0.50	2.01	0.40	2.97	0.59	3.40	0.40
Average	3.09	0.72	2.25	0.46	2.80	0.69	3.09	0.60