

On publication of the paper, data associated with the published findings will be made available as raw data (without identifying information of participants) in a publicly accessible website following publication/data sharing requirements. The data will be secured on a drive that only authorized personnel have access to. There will be no audio or visual recordings. Verbal consent will be collected. The interview will not be administered if consent is not given. Data are collected on paper in Ethiopia, scanned, and transmitted to the PI at ASU via Dropbox, Google Drive, or another secure pathway. Data entry will be performed at ASU in the lab of the PI. The only personal data that will be stored on the ASU master google drive will be age, gender, and occupation.

Consent: Dr. Schneider-Crease and/or Dr. Fufa will be responsible for obtaining verbal consent in Ethiopia. Verbal consent will be used because of potential low levels of literacy in some communities that work with pigs. The script for consent is included below. The interview will not be administered if no consent is given.

Conflicts of Interest: There are no conflicts of interest.

Consent Script

You have been selected to participate in this interview about diseases in pigs because you work at a pig farm or abattoir in Ethiopia. Being in this study is up to you. You may only participate if you are above 18 years old. You can stop up until you submit the survey. After you submit the survey, we cannot remove your responses because your responses are anonymous. There are no right or wrong answers—just be honest about your experience and knowledge! This interview has 30 questions. Your answers are anonymous and cannot be traced back to you by anyone, including your employers. We will use the information you provide us to understand diseases in pigs in Ethiopia. Anonymous data from your interview may be compiled with other interviews and published in academic, veterinary, or public health journals.

Verbal consent information: If you have any questions or concerns about your rights as a participant or the survey, please contact Dr. India Schneider-Crease at indiasc@asu.edu, Dr. Fufa Abunna Kurra at fufa.abunna@aau.edu.et, or the Chair of the Human Subjects Institutional Review Board at Arizona State University, through the ASU Office of Research Integrity and Assurance, at +1 (480) 965-6788.

Do you consent to participate in this interview?

If you consent to participate in this interview, we will ask you the following questions now:

Interview (pig farmers)

Section 1. Personal information

- 1) Which sex are you?
 - A. Male
 - B. Female
- 2) How old are you? _____ years old

- 3) What is your highest educational level?
 - A. Primary school
 - B. Secondary school
 - C. Degree
 - D. None
- 4) Do you/have you owned/work/worked with pigs?
 - A. Yes
 - B. No
- 5) What is your current job position? _____

Section 2. General information

- 1) Where is your farm located (region)? _____
- 2) How many pigs do you sell weekly?
 - A. Between 1 and 10
 - B. Between 10 and 50
 - C. Between 50 and 100
 - D. Above 100
- 3) Are pigs slaughtered at your farm or sold live?
 - A. Slaughtered at farm
 - B. Sold
- 4) If sold, who are the pigs sold to? _____
 - A. Companies? Add more detail here _____
 - B. Personal? Add more detail here _____
- 5) What is the cost per kg for pigs? _____ (birr)
- 6) Do sold pigs stay in the town/region or are they exported?
 - A. Stay local
 - B. Export to _____
- 7) Do you know where pigs are butchered?
 - A. Yes _____
 - B. No
- 8) If yes, is meat inspection performed at your work?
 - A. Yes, always
 - B. Yes, sometimes
 - C. Yes, when the meat inspector is around
 - D. No, never
- 9) If yes, what parts of the pig are inspected? _____
- 10) If yes, who performs the inspection? _____

Section 3: Farm Sanitation and Pig Management

- 1) How much time per day do your pigs spend in an enclosed pen?

- i. Less than 25%
 - ii. 25% - 50%
 - iii. 50% - 75%
 - iv. 75% - 100%
- 2) How much time per day do your pigs spend free-roaming outside?
- a. Less than 25%
 - b. 25% - 50%
 - c. 50% - 75%
 - d. 75% - 100%
- 3) Which age category can free-roam?
- a. Infant
 - b. Adult
 - c. None
- 4) What foods do your pigs eat? Select all that apply
- a. Injera
 - b. Grains (rice, maize)
 - c. Meat
 - d. Assorted leftovers
 - e. Other _____
- 5) Where do your pigs feed?
- a. In an enclosed pen
 - b. Free-roaming
- 6) How often are pig pens cleaned?
- a. Daily
 - b. Every few days
 - c. Every few weeks
 - d. Rarely
 - e. Never
 - f. N/A (no pen)
- 7) Where do people who work at your farm go to the bathroom?
- a. Outside
 - b. Pit latrine
 - c. Flush toilet
 - d. Dig holes
 - e. Other _____
- 8) How close is the nearest place where people go to the bathroom to where pigs are kept?
- a. Less than 5 meters (estimate ____ m)
 - b. Between 5 – 10 meters (estimate ____ m)
 - c. Between 10 – 30 meters (estimate ____ m)
 - d. Greater than 30 meters (estimate ____ m)

- 9) If pigs free-roam, do they roam in places where humans defecate?
 - a. Yes
 - b. No
- 10) Do your pigs have access to human waste or rubbish?
 - a. Yes
 - b. No
- 11) Do your pigs ever receive dewormers?
 - a. Yes
 - b. No
 - c. Don't know what dewormer is
 - d. Don't know/not sure
- 12) Where did/do you get the pigs at your farm? _____
- 13) What other animals can access the farm to search for food, etc? Select all that apply.
 - a. Dogs
 - b. Cats
 - c. Birds _____
 - d. Hyena
 - e. Cattle
 - f. Sheep/goats
 - g. Rodents
 - h. Monkeys _____
 - i. None

Section 4: Health & disease knowledge

- 1) Please indicate which of these diseases are found in pigs:
 - a. Lungworm ___Y/N
 - b. Leishmaniasis___Y/N
 - c. Roundworm___Y/N
 - d. Ringworm___Y/N
 - e. Lice___Y/N
 - f. Ticks___Y/N
 - g. Cysticercus cellulosae___Y/N
 - h. Cryptosporidium ___Y/N
 - i. Kosso___Y/N
 - j. Tapeworm ___Y/N
 - k. Toxoplasma___Y/N
 - l. Giardia___Y/N
 - m. Rabies___Y/N
 - n. Trichinella___Y/N
 - o. Taeniasis___Y/N

- 2) Do you have fear that you will contract disease from the pigs or the environment?
- Yes, from pigs
 - Yes, from environment
 - Yes, both
 - No, neither
- 3) What causes white cysts in the muscles of pigs? Select all that apply
- Worms (roundworm, lungworm) from contaminated feed
 - Tapeworms from humans
 - Tapeworm from contaminated feed
 - Trichinella from humans
 - Trichinella from contaminated feed
 - Poisoning
 - Other _____
 - Don't know/not sure
- 4) What is the disease that causes white cysts in the muscles of pigs called? Select all that apply
- Rabies
 - Cysticercus cellulosae
 - Lungworm
 - Kosso
 - Lice
 - Tapeworm
 - Ringworm
 - Taenia solium
 - Taenia saginata
 - Cysticercosis
 - Cryptosporidium
- 5) How do pigs get white cysts?
- From dirt getting into wounds
 - From eating human stool
 - From eating moldy maize bran or rice
 - From other pigs through touch, air, or mating
 - Other _____
 - Don't know/not sure
- 6) How can you test a pig for white cysts?
- By examination of the tongue
 - By feeling the belly
 - By checking the skin
 - Slaughtering the pig and looking in the muscle
 - Other _____
 - Don't know/not sure

- 7) What should be done with a live pig with white cysts?
- a. Isolate from other pigs
 - b. Treat pig with ash
 - c. Give specific medicine
 - d. No treatment needed before slaughter
 - e. Kill pig and discard meat
 - f. Kill pig and sell meat
- 8) Can people get the white cysts in muscle of pigs?
- a. Yes
 - b. No
 - c. Don't know/not sure
- 9) If yes, how?
- a. Touching an infected pig
 - b. Breathing near an infected pig
 - c. Eating infected pig meat- cooked
 - d. Eating infected pig meat- raw/undercooked
- 10) Select which diseases you have received training or information on?
- a. Rabies
 - b. *Cysticercus cellulosae*
 - c. Lungworm
 - d. Kosso
 - e. Lice
 - f. Tapeworm
 - g. Ringworm
 - h. *Taenia solium*
 - i. *Taenia saginata*
 - j. Cysticercosis
 - k. *Cryptosporidium*

Interview (abattoir workers)

Section 1. Personal information

- 6) Which sex are you?
 - A. Male
 - B. Female
- 7) How old are you? _____ years old
- 8) What is your highest educational level?
 - A. Primary school
 - B. Secondary school
 - C. Degree
 - D. None
- 9) Do you own/have you owned pigs?
 - A. Yes
 - B. No
- 10) What is your current job position? _____

Section 2. General information

- 11) Where is your abattoir located (city/town/region)?

- 12) How many pigs do you slaughter weekly?
 - A. Between 1 and 10
 - B. Between 10 and 50
 - C. Between 50 and 100
 - D. Above 100
- 13) Which businesses purchase pig meat? _____
- 14) How often is pig meat inspection performed at your work?
 - E. Every pig is inspected
 - F. Some pigs are inspected
 - G. Pigs are only inspected when meat inspector is present
 - H. No, never
- 15) What parts of the pig are inspected?
 - A. Tongue
 - B. Belly
 - C. Muscle
 - D. Organs (which organs_____)
- 16) Who performs the inspection? _____

Section 4: Health & disease knowledge

11) Please indicate which of these diseases are found in pigs:

- a. Lungworm ___Y/N
- b. Leishmaniasis___Y/N
- c. Roundworm___Y/N
- d. Ringworm___Y/N
- e. Lice___Y/N
- f. Ticks___Y/N
- g. Cysticercus cellulosae___Y/N
- h. Cryptosporidium ___Y/N
- i. Kosso___Y/N
- j. Tapeworm ___Y/N
- k. Toxoplasma___Y/N
- l. Giardia___Y/N
- m. Rabies___Y/N
- n. Trichinella___Y/N
- o. Taeniasis___Y/N

12) What causes white cysts in the muscles of pigs? Select all that apply

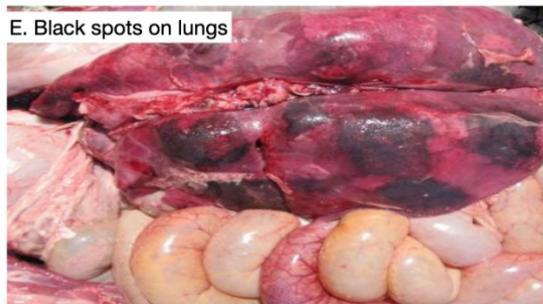
- a. Worms (roundworm, lungworm) from contaminated feed
- b. Tapeworms from humans
- c. Tapeworm from contaminated feed
- d. Trichinella from humans
- e. Trichinella from contaminated feed
- f. Poisoning
- g. Other _____
- h. Don't know/not sure

13) What is the disease that causes white cysts in the muscles of pigs called? Select all that apply

- a. Rabies
- b. Cysticercus cellulosae
- c. Lungworm
- d. Kosso
- e. Lice
- f. Tapeworm
- g. Ringworm
- h. Taenia solium
- i. Taenia saginata
- j. Cysticercosis
- k. Cryptosporidium

14) Which of the following have you seen in pigs?

a. Circle A, B, C, D, E, F



15) How do pigs get white cysts?

- a. From dirt getting into wounds
- b. From eating human stool
- c. From eating moldy maize bran or rice
- d. From other pigs through touch, air, or mating
- e. Other _____
- f. Don't know/not sure

16) How can you test a pig for white cysts?

- a. By examination of the tongue
- b. By feeling the belly
- c. By checking the skin
- d. Slaughtering the pig and looking in the muscle
- e. Other _____

- f. Don't know/not sure
- 17) What should be done with a live pig with white cysts?
 - a. Isolate from other pigs
 - b. Treat pig with ash
 - c. Give specific medicine
 - d. No treatment needed before slaughter
 - e. Kill pig and discard meat
 - f. Kill pig and sell meat
- 18) Can people get the white cysts in muscle of pigs?
 - a. Yes
 - b. No
 - c. Don't know/not sure
- 19) If yes, how?
 - a. Touching an infected pig
 - b. Breathing near an infected pig
 - c. Eating infected pig meat- cooked
 - d. Eating infected pig meat- raw/undercooked
- 20) Select which diseases you have received training or information on?
 - a. Rabies
 - b. *Cysticercus cellulosae*
 - c. Lungworm
 - d. Kosso
 - e. Lice
 - f. Tapeworm
 - g. Ringworm
 - h. *Taenia solium*
 - i. *Taenia saginata*
 - j. Cysticercosis
 - k. *Cryptosporidium*

Section 4: Specific knowledge

- 1) Have you heard of *C. cellulosae*/kosso?
 - A. Yes
 - B. No
- 2) How can *C. cellulosae*/kosso be diagnosed in a slaughtered pig?
 - A. By inspecting the stomach and intestines for worms.
 - B. By inspecting the lungs for black areas.
 - C. By inspecting carcass and organs for white cysts.

- D. You cannot diagnose it in a slaughtered pig.
 - E. I don't know.
- 3) What must be done with a slaughtered pig with *C. cellulosae/kosso*?
- A. Nothing as the pig isn't contagious anymore.
 - B. Destruction of the whole carcass.
 - C. Cut out the infected part and sell what is left.
 - D. I don't know.
- 4) What should ideally be done with a live pig with *C. cellulosae/kosso*?
- A. Treat the pig with ash.
 - B. Give the pig specific medicine.
 - C. Isolate the pig from the other pigs.
 - D. No treatment is needed before slaughter.
 - E. Kill the pig as it is contagious.
 - F. I don't know.
- 5) How can you prevent pigs from getting *C. cellulosae*?
- A. Isolate the pigs that are infected.
 - B. Avoid pigs' access to human stool.
 - C. Don't feed moldy maize bran or rice.
 - D. Clean wounds regularly.
 - E. Prevent mating with infected pigs.
 - F. I don't know.
- 6) Can humans get infected by *C. cellulosae*?
- A. Yes
 - B. No
 - C. I don't know
- 7) If yes, how?
- A. By contact with pigs with infected wounds.
 - B. By contact with sick pigs or sick people.
 - C. By eating raw or undercooked infected pork.
 - D. By contact with pig stool
 - E. By contact with human stool
 - F. I don't know.
- 8) If yes, how could you diagnose infections in people?
- A. It cannot be diagnosed.
 - B. By looking at a stool sample under a microscope.

- C. By looking in the ear canal with a specialized tool.
 - D. By checking the skin for infected wounds or worms under the skin.
 - E. I don't know.
- 9) Have you heard of *Taenia solium*/taeniasis?
- A. Yes
 - B. No
- 10) A person with *Taenia solium*/taeniasis will spread tapeworm eggs through...
- A. ... coughing and sneezing.
 - B. ... defecating.
 - C. ... urinating.
 - D. ... sharing drinks or kissing.
 - E. ... open wounds or pus.
 - F. I don't know.
- 11) Can pigs be infected by people with *Taenia solium*/taeniasis?
- A. Yes
 - B. No
 - C. Don't know/not sure
- 12) If yes, how?
- A. Touching
 - B. Encountering stool
 - C. Rubbish
 - D. Air
- 13) How can *Taenia solium*/taeniasis be treated in people?
- A. It cannot be treated
 - B. By taking specific medicine.
 - C. By going to the traditional healer.
 - D. By only eating salted rice for 1 week.
 - E. I don't know.
- 14) How can you prevent *Taenia solium*/taeniasis in people?
- A. By eating a tablespoon of salt a day.
 - B. By cooking pork so it is well done.
 - C. By regularly cleaning open wounds.
 - D. By avoiding physical contact with sick people.
 - E. By avoiding physical contact with sick pigs.
 - F. By avoiding pig stool

- G. By avoiding human stool
- H. Do not know.

15) What is human neurocysticercosis?

- A. It is a disease that can cause skin wounds.
- B. It is a disease that can cause stomach cramps.
- C. It is a disease that can cause fever.
- D. It is a disease that can cause headaches and epilepsy.
- E. I don't know.

16) A person with neurocysticercosis/cysticercosis may have got the infection by....

- A. Eating vegetables contaminated with tapeworm eggs from human feces.
- B. Eating undercooked infected pork.
- C. Physical contact with an infected pig.
- D. Physical contact with a person with fever.
- E. I don't know.

17) What should a person who experiences seizures or severe chronic headache do?

- A. Seek assistance from the health center.
- B. Be isolated from others.
- C. Not share drinks with others.
- D. Seek assistance from a traditional healer.
- E. I don't know.

18) Can a person with neurocysticercosis transmit the disease to other people?

- A. Yes, via infected stool.
- B. Yes, via direct skin contact.
- C. Yes, via coughing and sneezing.
- D. Yes, via sharing drinks with others.
- E. No, it cannot be transmitted.
- F. I don't know.

19) Do you think meat inspection should be performed?

- A. Yes, but only if the meat will be sold.
- B. Yes, but only when the pig shows symptoms/is diseased.
- C. Yes, but only when the pig owner wants it/asks for it.
- D. Yes, always.
- E. No, never.