

Supplementary Materials

Household Fuel Use for Heating and Cooking and Respiratory Health in a Low-Income, South African Coastal Community

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Figure S1. Household and health survey questionnaire.

HOUSEHOLD AND HEALTH SURVEY QUESTIONNAIRE

PLEASE COMPLETE THE FOLLOWING CONTACT DETAILS:

SURNAME: _____

NAME: _____

NODE/ZONE: (Mark the applicable one)

Glebe
Node/Zone

1 Ezimbuzini
Node/Zone

2 Mangosuthu
KwaMnyandu
Node/Zone

3

OTHER (SPECIFY) _____

DATE ON WHICH THIS QUESTIONNAIRE IS COMPLETED:

YEAR:

--	--	--	--

MONTH:

--	--

DAY:

--	--

YOUR PERSONAL (RESPONDENT) INFORMATION (Demographic)

1. What is your gender?

- a) Male

1

 b) Female

2

2. What is your date of birth?

YEAR:

--	--	--	--

 MONTH:

--	--

 DAY:

--	--

3. What is your home language?

- | | | | | | |
|--------------|---|---|----------|---|---|
| a) Afrikaans | <table border="1"><tr><td>1</td></tr></table> | 1 | e) Zulu | <table border="1"><tr><td>5</td></tr></table> | 5 |
| 1 | | | | | |
| 5 | | | | | |
| b) English | <table border="1"><tr><td>2</td></tr></table> | 2 | f) Swazi | <table border="1"><tr><td>6</td></tr></table> | 6 |
| 2 | | | | | |
| 6 | | | | | |
| c) Sotho | <table border="1"><tr><td>3</td></tr></table> | 3 | g) Other | <table border="1"><tr><td>7</td></tr></table> | 7 |
| 3 | | | | | |
| 7 | | | | | |
| d) Xhosa | <table border="1"><tr><td>4</td></tr></table> | 4 | | | |
| 4 | | | | | |

4. How long have you been living in this town (where you now reside most of the time)?

- | | | | | | |
|----------------------|---|---|-----------------------|---|---|
| a) Since birth | <table border="1"><tr><td>1</td></tr></table> | 1 | d) 4 – 5 years | <table border="1"><tr><td>4</td></tr></table> | 4 |
| 1 | | | | | |
| 4 | | | | | |
| b) Less than 2 years | <table border="1"><tr><td>2</td></tr></table> | 2 | e) 5 – 10 years | <table border="1"><tr><td>5</td></tr></table> | 5 |
| 2 | | | | | |
| 5 | | | | | |
| c) 2 – 4 years | <table border="1"><tr><td>3</td></tr></table> | 3 | f) More than 10 years | <table border="1"><tr><td>6</td></tr></table> | 6 |
| 3 | | | | | |
| 6 | | | | | |

5. Where did you live before living in this town?

6. How long were you living there?

- | | | | | | |
|----------------------|---|---|-----------------------|---|---|
| a) Since birth | <table border="1"><tr><td>1</td></tr></table> | 1 | d) 4 – 5 years | <table border="1"><tr><td>4</td></tr></table> | 4 |
| 1 | | | | | |
| 4 | | | | | |
| b) Less than 2 years | <table border="1"><tr><td>2</td></tr></table> | 2 | e) 5 – 10 years | <table border="1"><tr><td>5</td></tr></table> | 5 |
| 2 | | | | | |
| 5 | | | | | |
| c) 2 – 4 years | <table border="1"><tr><td>3</td></tr></table> | 3 | f) More than 10 years | <table border="1"><tr><td>6</td></tr></table> | 6 |
| 3 | | | | | |
| 6 | | | | | |

THE FOLLOWING QUESTIONS PERTAIN TO YOUR CURRENT RESIDENCE

7. Which of the following best describes your home?

- | | | |
|--|---|---|
| a) A single family house, not attached to other houses | <table border="1"><tr><td>1</td></tr></table> | 1 |
| 1 | | |
| b) A single family house, attached to other houses | <table border="1"><tr><td>2</td></tr></table> | 2 |
| 2 | | |
| c) A flat | <table border="1"><tr><td>3</td></tr></table> | 3 |
| 3 | | |
| d) Pre-fabricated home (asbestos/wood) | <table border="1"><tr><td>4</td></tr></table> | 4 |
| 4 | | |
| e) A shack | <table border="1"><tr><td>5</td></tr></table> | 5 |
| 5 | | |
| f) Other (define) | | |

8. a) How many rooms are there in the home? (Don't count bathroom and toilet _____)

b) How many of these are bedrooms? _____

9. Do you use any of the following heating systems? (Mark Yes or No for each one)

- a) Wood / coal stove
- b) Fireplace
- c) Gas heater
- d) Asbestos heater
- e) Portable electric heater

Yes	No

f) Other (Specify) _____

10. If you do have a portable **gas heater** in your home, how often do you use it during the winter?

- a) About every day
- b) 2 to 3 times a week
- c) 2 to 3 times a month
- d) Seldom
- e) Never

1
2
3
4
5

11. If you do have a **coal stove** in your home, how often do you use it during the winter?

- a) About every day
- b) 2 to 3 times a week
- c) 2 to 3 times a month
- d) Seldom
- e) Never

1
2
3
4
5

12. If you do have a **fireplace** in your home, how often do you use it during the winter?

- a) About every day
- b) 2 to 3 times a week
- c) 2 to 3 times a month
- d) Seldom
- e) Never

1
2
3
4
5

13. What fuel do you **mostly** use for cooking? (Mark only one)

- a) Electricity
- b) Wood
- c) Gas
- d) Electricity and gas

1
2
3
4

e) Other (Specify) _____

14. Do you use any of the following equipment in your home? (Mark Yes or No for each one)

- a) Humidifier
- b) Air scrubber/cleaner
- c) Air conditioner

Yes	No
Yes	No
Yes	No

15. If yes (question 14), how often did you use this equipment the past summer?

- a) About every day

1

- b) 2 to 3 times a week

2

- c) 2 to 3 times a month

3

- d) Seldom

4

- e) Never

5

16. Where did you use the equipment specified in question 14?

- a) All the rooms

1

- b) Living room

2

- c) Bedroom(s)

3

- d) Other (Specify) _____

17. Do you open windows or doors to circulate fresh air into your home during the winter months?

- a) Yes

1

- b) No

2

18. How often did you open windows and doors during the previous winter?

- a) About every day

1

- b) 2 to 3 times a week

2

- c) 2 to 3 times a month

3

- d) Seldom

4

19. Have you ever had problems with leakages, flooding or water damage in your home?

- a) Yes

1

- b) No

2

20. Have you ever had mold or mildew growing on any surface inside your present home? (e.g. on walls, wallpaper, carpets, ceilings, shower, curtains, etc.)

- a) In the shower area (curtain, around bath)

Yes	No
-----	----
- b) In other areas in the home

Yes	No
-----	----
- c) Unknown

Yes	No
-----	----

21. Which of the following pets do you have? **(Mark more than one if necessary)**

- a) None

Yes	No
-----	----
- b) Dog(s)

Yes	No
-----	----
- c) Rabbit(s)

Yes	No
-----	----
- d) Cat(s)

Yes	No
-----	----
- e) Mice

Yes	No
-----	----
- f) Bird(s)/Doves

Yes	No
-----	----
- g) Guinea pig(2)

Yes	No
-----	----

h) Other (Specify) _____

22. Are any of these animals allowed in the home?

- a) Yes
b) No

22. Is the home in which you live used on a regular basis by anyone in your household for the following hobbies or crafts? (By regular we mean at least once a week or at least 50 hours per year). **(Mark more than one if necessary)**

- a) Pottery and ceramics
b) Painting (Oil)/spray painting
c) Dyes and fibers /fabrics
d) Jewelry and enameling
e) Metal work
f) Automotive (mechanical/electrical)
g) Stained glass soldering
h) Photography (Darkroom use only)
i) Print making
j) Furniture stripping
k) Wood working
l) Silk screening

Yes	No

m) Other, (Specify) _____

INFORMATION ON SMOKING HABITS

23. Have you ever smoked more than one cigarette per day?

- a) Yes (two or more cigarettes/day)
b) No (one or less cigarette/day)

24. If yes,

- a) Do you currently smoke? a) Yes b) No
b) How old were you when you started smoking? _____
c) How many cigarettes do you smoke per day? _____
d) If you have quit smoking, how old were you when you quitted? _____

25. Is there currently anyone who smokes cigarettes, cigars or pipe on a regular basis (daily) in the home where you live?

- a) No
b) Yes, mother/female guardian
c) Yes, father/male guardian
d) Yes, both parents/guardians
e) Yes, husband/wife
f) Yes, other (specify) _____

26. How many **cigarettes** in total are smoked in the home each day?

- a) None

1

 d) 21 – 40

4

 b) 1 – 10

2

 e) 41 – 60

5

 c) 11 – 20

3

 f) More than 60

6

27. How many **cigars** in total are smoked in the home each day?

- a) None

1

 c) 6 – 10

3

 b) 1 – 5

2

 d) More than 10

4

28. How many **times** in total is a **pipe** smoked in the home each day?

- a) None

1

 c) 6 – 10

3

 b) 1 – 5

2

 d) More than 10

4

 e) Other substances (specify)
-

GENERAL ACTIVITIES AND LIFESTYLE

29. Do you participate in any of the following activities twice or more per week (Mark Yes or No for each one?)

- | | | |
|---|-----|----|
| a) One or more of the following: soccer, rugby, hockey, netball | Yes | No |
| b) Aerobics | Yes | No |
| c) Exercise with weights | Yes | No |
| d) Jogging | Yes | No |
| e) Walking | Yes | No |
| f) Swimming | Yes | No |

h) Other (Specify) _____

EATING HABITS

30. Which of the following do you eat on a regular (at least weekly) basis?

- | | | |
|--|-----|----|
| a) Chicken/Fish | Yes | No |
| b) Red meat | Yes | No |
| c) Processed food (e.g. polony, meat pies) | Yes | No |
| d) Vegetables | Yes | No |
| e) Fruit | Yes | No |

31. How often do you eat food fried in oil or fat?

- a) Daily

1

 b) Weekly

3

 c) Seldom

2

 d) Never

4

Specify type of oil

32. Do you currently consume any form of alcohol?

- a) Yes

1

 b) No

2

33. If yes, how many drinks on average do you consume per week? (One glass of wine, one beer or one tot of spirits is considered as one drink)

- a) Less than 7

1

- b) 8 – 14

2

- c) 15 – 21

3

- d) More than 21

4

THE FOLLOWING QUESTIONS CONCERN YOUR HEALTH

34. How would you describe your health compared to that of others of the same age group?

- a) Excellent

1

- b) Good

2

- c) Poor

3

35. Do you have any allergies?

- a) No - **go to question 42**

1

- b) Yes, self-diagnosed

2

- c) Yes, diagnosed by a doctor

3

- d) Other

4

36. How often do you take medication for the allergy?

- a) Never

1

- b) Daily

2

- c) 2 x a week

3

- d) 3 x a week

4

- e) Do not know

5

f) Other (Specify) _____

37. What are you allergic to? (Mark each applicable one)

- a) Things I eat
Specify: _____
- b) Things I inhale
Specify: _____
- c) Skin contact
Specify: _____
- d) Medication, e.g. Aspirin
Specify: _____
- e) Other
Specify: _____

Yes	No

38. How many **days** over the last **2 weeks** have you been absent from work/studies because of illness?

--	--

39. During the **past 12 months**, how many **days** have you been absent from work/study due to illness?

- | | | | |
|-----------|--------------------------------|-----------------|--------------------------------|
| a) None | <input type="text" value="1"/> | d) 11 – 15 | <input type="text" value="4"/> |
| b) 1 – 5 | <input type="text" value="2"/> | e) 16 – 20 | <input type="text" value="5"/> |
| c) 6 – 10 | <input type="text" value="3"/> | f) More than 20 | <input type="text" value="6"/> |

40. Due mostly to which illness?
Specify _____

41. Have you ever had any of the following illnesses? (Mark No **or** Yes for every illness)

- | | | | |
|-----------------------|--|-----|----|
| a) Bronchitis | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |
| b) Pneumonia | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |
| c) Earache | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |
| d) Hay fever | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |
| e) Chronic bronchitis | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |
| f) Sinus trouble | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |
| g) Rhinitis | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |
| h) Running nose | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | |

42. How do you predominantly breathe?
a) Through the mouth b) Through the nose

Explain _____

43. When you have a cold, does it normally go to your chest?

- | | |
|--------|--------------------------------|
| a) Yes | <input type="text" value="1"/> |
| b) No | <input type="text" value="2"/> |

ASTHMA

44. Has your doctor ever said that you have asthma?

- | | |
|--------|--------------------------------|
| a) Yes | <input type="text" value="1"/> |
| b) No | <input type="text" value="2"/> |

If NO, go to question 54.

45. At what age did your asthma start?

- | | | | |
|----------------|--------------------------------|-----------------------|--------------------------------|
| a) 0 – 1 years | <input type="text" value="1"/> | e) 8 – 9 years | <input type="text" value="5"/> |
| b) 2 – 3 years | <input type="text" value="2"/> | f) 10 years and older | <input type="text" value="6"/> |
| c) 4 – 5 years | <input type="text" value="3"/> | g) Unknown | <input type="text" value="7"/> |
| d) 6 – 7 years | <input type="text" value="4"/> | | |

46. a) Do you still have asthma?

- a) Yes

1

- b) No

2

- c) Not sure

3

b) If yes, how frequent

- Weekly

1

- Monthly

2

- Occasionally

3

47. Do you currently take medicine or get treatment for asthma?

- a) Yes

1

- b) No

2

48. If you no longer have asthma, at what age did you last have asthma?

- a) 0 - 1 years

1

- b) 2 - 3 years

2

- c) 4 - 5 years

3

- d) 6 - 7 years

4

- e) 8 - 9 years

5

- f) 10 years and older

6

- g) Unknown

7

49. Which months of the year do you have asthma? (Mark each applicable one)

- | | | | | | | | |
|-------------|--|-----|----|--------------|--|-----|----|
| a) January | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No | g) July | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | | | | | |
| Yes | No | | | | | | |
| b) February | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No | h) August | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | | | | | |
| Yes | No | | | | | | |
| c) March | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No | i) September | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | | | | | |
| Yes | No | | | | | | |
| d) April | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No | j) October | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | | | | | |
| Yes | No | | | | | | |
| e) May | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No | k) November | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | | | | | |
| Yes | No | | | | | | |
| f) June | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No | l) December | <table border="1"><tr><td>Yes</td><td>No</td></tr></table> | Yes | No |
| Yes | No | | | | | | |
| Yes | No | | | | | | |

CHEST COUGH

50. Do you cough when you wake up in the morning? (Mark one)

- a) No - **go to question 56**

1

- b) Yes, the previous 3 months

2

- c) Yes, longer than the previous 3 months

3

- d) Yes, the previous year

4

- e) Yes, longer than the previous year

5

51. When do you cough mostly? (Mark one)

- a) During the day

1

- b) During the night

2

- c) During the day and the night

3

- d) Only when I wake up/go to bed

4

PHLEGM

52. Do you usually have phlegm on the chest? (Mark one)

- a) No - **go to question 58**

1

- b) Yes, with colds

2

- c) Yes, without colds

3

- d) Yes, with and without colds

4

f) Other, Specify _____

53. If "Yes", has this phlegm been present for longer than 3 months of the year?

- a) No

1

- b) Yes, previous year

2

- c) Yes, previous and other years

3

WHEEZE OF THE CHEST

54. Does your chest sound wheezy or whistling when you inhale?

- a) Yes

1

- b) No

2

If NO, go to question 66.

55. Does this wheeze of the chest occur with colds?

- a) No

1

- b) Yes, previous year

2

- c) Yes, previous and other years

3

56. Does this occasionally happen other than with colds?

- a) No

1

- b) Yes, previous year

2

- c) Yes, previous and other years

3

57. When does your chest wheeze mostly, when you **don't** have a cold?

- a) During the day

1

- b) During the night

2

- c) During the day and the night

3

58. During which month(s) of the year do you usually have an episode of wheezing? (Mark each applicable one)

a) January	Yes	No	h) August	Yes	No
b) February	Yes	No	i) September	Yes	No
c) March	Yes	No	j) October	Yes	No
d) April	Yes	No	k) November	Yes	No
e) May	Yes	No	l) December	Yes	No
f) June	Yes	No	m) Unknown	Yes	No
g) July	Yes	No			

59. Have you had attacks of shortness of breath when your chest wheezes?

- a) No 1
- b) Yes, previous year 2
- c) Yes, previous and other years 3

60. Do you ever get attacks of wheezing during or after you have been exercising?

- a) Yes 1
- b) No 2

61. Have you ever taken any medication for these attacks?

- a) Yes 1
- b) No 2

62. Have you ever been hospitalized for **respiratory** ailments?

- a) Yes 1
- b) No 2

If yes, please provide the following information:

- c) How many times? _____
- d) If possible, specify month and year of **each** admittance:
- i) _____
- ii) _____
- iii) _____
- iv) _____
- v) _____
- vi) _____
- e) List reasons for admittance:
-

OTHER ILLNESSES AND CONDITIONS

63. Are you currently using any medication prescribed by a doctor?

- a) Yes 1
- b) No 2

If yes, please specify _____

64. Within the past **year**, have you had any of the following? (Mark Yes **or** No for each one)

a) Bronchitis	Yes	No
b) Pneumonia	Yes	No
c) Running nose	Yes	No
d) Earache	Yes	No
e) Hay fever	Yes	No
f) Sinusitis	Yes	No
g) Asthma	Yes	No

65. Have you had any other major illnesses or accidents that kept you home or prevented you from participating in any activities during the past year?

- a) Yes

1

 b) No

2

If yes, please specify _____

66. Have you **ever** had any of the following? (Mark Yes **or** No for each one)

a) Learning disability	Yes	No
b) Hyperactivity	Yes	No
c) Hepatitis	Yes	No
d) Cancer	Yes	No
e) Gastro-intestinal diseases	Yes	No
f) Heart disease	Yes	No
g) High blood pressure	Yes	No
h) Stroke	Yes	No
i) High cholesterol	Yes	No
j) Diabetes	Yes	No
k) Painful joints (arthritis/gout)	Yes	No

67. During the past **12 months** how often have you been bothered by any of the following?

- a) Eye problems _____ times
 b) Nose problems _____ times
 c) Ear problems _____ times
 d) Throat problems _____ times
 e) Chest/lung problems _____ times
 f) Skin problems _____ times
 g) Stomach/abdomen problems _____ time

68. Has anyone in your immediate family ever had any of the following? (Mark Yes **or** No for each one)

a) High blood pressure	Yes	No
b) Stroke	Yes	No
c) Heart attack/angina/chest pain while exercising	Yes	No

d) If yes in c above, was it before age 50?

Yes	No
-----	----

69. Do you consider yourself as?

- | | |
|------------------|---|
| a) Overweight | 1 |
| b) Underweight | 2 |
| c) Normal weight | 3 |
| d) Unknown | 4 |

INFORMATION ON OCCUPATION

70. How many years of schooling or other education have you completed?

- | | |
|---|---|
| a) Did not complete std. 8 (Grade 10) | 1 |
| b) Completed std. 8 (Grade 10) | 2 |
| c) Completed std. 10 (Grade 12) | 3 |
| d) Completed Degree Diploma | 4 |
| e) Completed Post-graduate qualifications | 5 |

71. What is your current employment status?

- | | | | |
|-----------------------|---|---------------|---|
| a) Employed full time | 1 | d) Student | 4 |
| b) Employed part time | 2 | e) Unemployed | 5 |
| c) Self-employed | 3 | f) Other | 6 |

72. What is your current occupation or job?

- a) Job or occupation (please be specific)

- b) Type of business or industry

- c) Number of years worked at this job

73. Have you ever worked in a dusty environment for more than a year?

- | | |
|--------|---|
| a) Yes | 1 |
| b) No | 2 |

c) If yes, please specify

74. Have you ever been exposed to gases and/or chemicals in the work place?

- | | |
|--------|---|
| a) Yes | 1 |
| b) No | 2 |

c) If yes, please specify

PERSONAL VIEWS

75. In your opinion, what factor(s) has the biggest influence on your respiratory health status?

76. Do you perceive the air pollution in the KZN as serious?

- a) Yes

1

 c) Not critical

3

 b) No

2

 d) Unknown

4

77. If you do not live in..... any more, do you perceive air pollution levels in the area where you currently live as serious?

- a) Yes

1

 c) Not critical

3

 b) No

2

 d) Unknown

4

78. What do you consider the most important source of air pollution in your area? (Mark one)

- a) Motor vehicles

1

 b) Industries and mines

2

 c) Cigarette smoke

3

 d) Open fires (from areas without electricity)

4

 e) Other (Specify) _____

79. Have you noticed unusual odours in your neighbourhood?

- a) Yes

1

 b) No

2

80. If "Yes" for how long have you noticed these odours? (Complete only one)

- a)

--	--

 Years
 b)

--	--

 Months
 c)

--	--

 Days

81. Do you feel that these odours are affecting your health?

- a) Yes

1

 b) No

2

 c) Unknown

3

82. If "Yes" how severely do you feel these odours are affecting your health?

- a) A great deal

1

 c) Very little

3

 b) Fairly

2

 d) Unknown

4

¹ This questionnaire was based on several other questionnaires used in epidemiological studies on respiratory diseases. These are the ATS-DLD-78-A questionnaire, used for respondents of 13 or more years of age (Ferris, B.G. *Epidemiology Standardization Project. Contract No 1-HR-5-3028. Report HR-53028-F.* Division of Lung Diseases, National Heart, Lung and Blood Institute: city, state abbrev, USA, 1978), the Canadian Air Quality and Health Study questionnaire (NHW/HPB-190-03040), the Harvard School of Public Health's

Children's Health Study Questionnaire (NHW/HPB-190-03210) and the Vaal Triangle Air Pollution and Health Study (VAPS) questionnaire. All of these questionnaires have been extensively tested and reviewed by a large body of experts.