

KENYA - Air Pollution and its effect on mortality and pregnancy outcomes in Nairobi's slums, na

African Population and Health Research Center - APHRC

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Overview

Identification

ID NUMBER

DDI-KEN-APHRC-AIRPOLLUTION-2014-v01.

Version

VERSION DESCRIPTION

PRODUCTION DATE

2020-10-05

NOTES

na

Overview

ABSTRACT

Air pollution (both outdoor and indoor) is an important public health challenge especially in the developing world where legislation on emissions control is either weak or non-existent. With these countries preparing for industrial take off, outdoor air pollution will continue to remain important as it concerns the health consequences, owing to possibly higher levels of emissions. In these countries, majority of households rely on biomass derived fuels for cooking and heating that have been classified as highly polluting and have been shown to have deleterious effects on human health. Studies have documented the negative effects of both outdoor and indoor air pollution on health; however, there have been very few studies in Africa. The objectives of this study are to assess the perceptions and attitudes of people living in two informal settlements in Nairobi regarding their exposure to air pollution; estimate the effect of indoor air pollution on pregnancy outcomes and model the effect of air pollution on mortality in the two settlements. The study shall use mixed methods approach where a qualitative study will be done to look at the perceptions and attitudes of residents regarding air pollution. In addition to this, a panel study measuring levels of outdoor air pollutants shall be done. This will be done in such a way that seasonal variations are accounted for. To assess the effect of air pollution on pregnancy outcomes, a follow up study of pregnant women will be done and measurements of indoor air pollution levels will be done in their homes. The study is expected to take 12 months.

UNITS OF ANALYSIS

The households.

Coverage

GEOGRAPHIC COVERAGE

Nairobi's slums (Korogocho and Viwandani)

UNIVERSE

Indoor air data covered households with pregnant women while outdoor air data was collected from various villages in each of the slum

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
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Name	Affiliation
African Population and Health Research Center	APHRC

OTHER PRODUCER(S)

Name	Affiliation	Role
Thaddaeus Egondi	African Population and Health Research Center	To oversee the overall activities of the proposed project and ensure the success of the whole project
Kanyiva Muindi	African Population and Health Research Center	Conducting the indoor air monitoring alongside the research team in the field. In addition, I will be in charge of quality control which involves visiting the teams and randomly spot-checking their work to ensure it is done ethically and correctly.

FUNDING

Name	Abbreviation	Role
African Population and Health Research Center		
Umea University		

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
African Population and Health Research Center	APHRC		Documentation of the DDI

DATE OF METADATA PRODUCTION

2020-10-05

DDI DOCUMENT VERSION

Version 1.0 (October 2020)

DDI DOCUMENT ID

DDI-KEN-APHRC-AIRPOLLUTION-2014-v01.

Sampling

Sampling Procedure

The qualitative study involved a total of eight focus group discussions with men and women living in Korogocho and Viwandani. In addition to this, outdoor air pollution was measured as panel data to ensure seasonal variations are accounted for. This part of the study involved assessment by the measurement team who were carrying the measuring equipment. The study on indoor air pollution and pregnancy outcomes was a prospective study of a cohort of pregnant women recruited during their first or early second trimester. They were followed up until they delivered and the birth weight of the newborn was taken. Measurement of indoor air pollution levels was done and other information on fuel and stove types used in the household collected. The study was nested on an ongoing intervention study following up 600 pregnant women and providing nutritional counseling pre- and post-pregnancy for optimal child health.

Deviations from Sample Design

na

Response Rate

na

Weighting

na

Questionnaires

Overview

Qualitative guide into the enquiry of people's perceptions of exposure to air pollution

1. Understand the perceptions, attitudes and beliefs of individuals regarding air pollution.
2. Assess the communities' understanding of the health risks associated with air pollution.

Questionnaire on IAP and pregnancy outcomes

Data Collection

Data Collection Dates

Start	End	Cycle
2014-05-05	2014-10-17	N/A

Data Collection Mode

Face-to-face [f2f]

Questionnaires

Qualitative guide into the enquiry of people's perceptions of exposure to air pollution

1. Understand the perceptions, attitudes and beliefs of individuals regarding air pollution.
2. Assess the communities' understanding of the health risks associated with air pollution.

Questionnaire on IAP and pregnancy outcomes

Supervision

The study shall had three teams based on the three components: the qualitative team had two moderators and two note-takers with either taking the role of team leader during the period when the focus groups was convened.

In the outdoor air pollution component, two field staff made up the team and they were supervised by the two investigators who acted as the team leaders.

The indoor air pollution component had two teams each having 8 interviewers and under the leadership of a supervisor. The research assistant on the larger study on which this component is nested provided coordination of the teams. The two investigators oversee the placement and retrieval of IAP monitors as well as uploading of data from the monitors.

Data Processing

Data Editing

Data collection for the quantitative study was done electronically using netbooks. This removed the need for data entry and therefore once data had been collected, the investigators obtained it for cleaning and analysis using Stata software. Descriptive analysis and multivariable regression analysis was applied as appropriate. Qualitative data was transcribed by the investigators and coded and thematic analysis conducted using Nvivo software.

Other Processing

na

Data Appraisal

Estimates of Sampling Error

na

File Description

Variable List

air_pollution_data

Content	The file contains indoor PM2.5 data
Cases	45153
Variable(s)	23
Structure	Type: Keys: ()
Version	Version(1.0)
Producer	AFrican population and health research center (APHRC)
Missing Data	na

Variables

ID	Name	Label	Type	Format	Question
V1	id	Id	contin	numeric	na
V2	start_date	Start_date	discrete	character	na
V3	start_time	Start_time	discrete	character	na
V4	time_sec	Time_sec	contin	numeric	na
V5	mass	Mass [mg/m3]	contin	numeric	na
V6	pm	PM25 levels	contin	numeric	na
V7	alarms	Alarms	discrete	character	na
V8	time	Time	discrete	character	na
V9	mainfuel	Main fuel	discrete	character	na
V10	otherfuel	Other fuel	discrete	character	na
V11	lighting	main source of light	discrete	character	na
V12	slum	slum	discrete	character	na
V13	mondate	monitor date	discrete	character	na
V14	montime	monitor time	contin	numeric	na
V15	starttime	monitor start time	contin	numeric	na
V16	endtime	monitor end time	contin	numeric	na
V18	fuel	Main fuel	discrete	numeric	na
V19	othfuel	Other fuel	discrete	numeric	na
V20	light	main source of light	discrete	numeric	na
V21	ctime	cooking time	contin	numeric	na
V22	cooktime	meal prep time	discrete	numeric	na
V23	time_hr	hourly monitoring intervals	discrete	numeric	na
V24	duration	monitoring duration	contin	numeric	na

Koch_gps_pm_activities

Content	This file contains outdoor PM2.5 data with GPS coordinates from Korogocho.
Cases	6076
Variable(s)	10
Structure	Type: Keys: ()
Version	Version(1.0)
Producer	AFrican population and health research center (APHRC)
Missing Data	na

Variables

ID	Name	Label	Type	Format	Question
V46	date	Date of measurement	discrete	character	na
V47	site	Study site:Korogocho=1;Viwandani=2	discrete	numeric	na
V48	pm25	The pm2.5 concentration	contin	numeric	na
V49	hh	Hours	discrete	numeric	na
V50	mm	Minutes	contin	numeric	na
V51	lat	lat	contin	numeric	na
V52	lon	lon	contin	numeric	na
V53	area	area	discrete	character	na
V54	location	location	discrete	character	na
V55	activity	activity	discrete	character	na

Viwa_gps_pm_activities

Content	This file contains outdoor PM2.5 data with GPS coordinates from Viwandani.
Cases	2844
Variable(s)	10
Structure	Type: Keys: ()
Version	Version(1.0)
Producer	AFrican population and health research center (APHRC)
Missing Data	na

Variables

ID	Name	Label	Type	Format	Question
V56	date	Date of measurement	discrete	character	na
V57	site	Study site:Korogocho=1;Viwandani=2	discrete	numeric	na
V58	pm25	The pm2.5 concentration	contin	numeric	na
V59	hh	Hours	discrete	numeric	na
V60	mm	Minutes	contin	numeric	na
V61	lat	lat	contin	numeric	na
V62	lon	lon	contin	numeric	na
V63	area	Site	discrete	character	na
V64	location	location	discrete	character	na
V65	activity	activity	discrete	character	na

Id (id)

File: air_pollution_data

Overview

Type: Continuous
 Format: numeric
 Width: 9
 Decimals: 0
 Range: 1-31091

Valid cases: 45153
 Invalid: 0
 Minimum: 1
 Maximum: 31091
 Mean: 12984.8
 Standard deviation: 8627.4

Description

Record ID

Universe

The households

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Start_date (start_date)

File: air_pollution_data

Overview

Type: Discrete
 Format: character
 Width: 10

Valid cases: 45153
 Invalid: 0

Description

The starting date for the recording.

Universe

The households

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Start_time (start_time)

File: air_pollution_data

Overview

Start_time (start_time)

File: air_pollution_data

Type: Discrete
 Format: character
 Width: 11

Valid cases: 45153
 Invalid: 0

Description

The start time for recording

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Time_sec (time_sec)

File: air_pollution_data

Overview

Type: Continuous
 Format: numeric
 Width: 10
 Decimals: 0
 Range: 60-256740

Valid cases: 45153
 Invalid: 0
 Minimum: 60
 Maximum: 256740
 Mean: 18238.8
 Standard deviation: 11507.4

Description

Recording time in seconds

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Mass [mg/m3] (mass)

File: air_pollution_data

Overview

Mass [mg/m³] (mass)

File: air_pollution_data

Type: Continuous
 Format: numeric
 Width: 10
 Decimals: 0
 Range: 4-64800

Valid cases: 45153
 Invalid: 0
 Minimum: 4
 Maximum: 64800
 Mean: 263.1
 Standard deviation: 1111.7

Description

The mass

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

PM25 levels (pm)

File: air_pollution_data

Overview

Type: Continuous
 Format: numeric
 Width: 9
 Decimals: 0
 Range: 1-20088

Valid cases: 45153
 Invalid: 0
 Minimum: 1
 Maximum: 20088
 Mean: 81.1
 Standard deviation: 344.7

Description

The PM25 levels

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Alarms (alarms)

File: air_pollution_data

Overview

Alarms (alarms)

File: air_pollution_data

Type: Discrete
Format: character
Width: 6

Valid cases: 0
Invalid: 0

Description

The alrms

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Time (time)

File: air_pollution_data

Overview

Type: Discrete
Format: character
Width: 8

Valid cases: 45153
Invalid: 0

Description

The time

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Main fuel (mainfuel)

File: air_pollution_data

Overview

Type: Discrete
Format: character
Width: 12

Valid cases: 28306
Invalid: 0

Description

The main fuel used by the household

Main fuel (mainfuel)

File: air_pollution_data

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Other fuel (otherfuel)

File: air_pollution_data

Overview

Type: Discrete

Format: character

Width: 12

Valid cases: 3157

Invalid: 0

Description

The other fuel used by the household

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

main source of light (lighting)

File: air_pollution_data

Overview

Type: Discrete

Format: character

Width: 11

Valid cases: 11365

Invalid: 0

Description

the main source of light in the household

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

main source of light (lighting)

File: air_pollution_data

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

slum (slum)

File: air_pollution_data

Overview

Type: Discrete

Valid cases: 45153

Format: character

Invalid: 0

Width: 1

Description

The slum where the household is located

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

monitor date (mondate)

File: air_pollution_data

Overview

Type: Discrete

Valid cases: 45153

Format: character

Minimum: NaN

Width: 11

Maximum: NaN

Description

The household monitoring date

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

monitor date (mondate)

File: air_pollution_data

Post question

na

Interviewer instructions

na

monitor time (montime)

File: air_pollution_data

Overview

Type: Continuous	Valid cases: 45153
Format: numeric	Invalid: 0
Width: 11	Minimum: 6180000
Decimals: 0	Maximum: 85800000
Range: 6180000-85800000	Mean: 53048961.5
	Standard deviation: 12567553.7

Description

The household monitoring time

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

monitor start time (starttime)

File: air_pollution_data

Overview

Type: Continuous	Valid cases: 45153
Format: numeric	Invalid: 0
Width: 11	Minimum: 6120000
Decimals: 0	Maximum: 52500000
Range: 6120000-52500000	Mean: 34097400.7
	Standard deviation: 6721451.6

Description

The household monitoring start time

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

monitor start time (starttime)

File: air_pollution_data

Post question

na

Interviewer instructions

na

monitor end time (endtime)

File: air_pollution_data

Overview

Type: Continuous	Valid cases: 45153
Format: numeric	Invalid: 0
Width: 11	Minimum: 38160000
Decimals: 0	Maximum: 85800000
Range: 38160000-85800000	Mean: 72130152.1
	Standard deviation: 6904805.7

Description

The household monitoring end time

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Main fuel (fuel)

File: air_pollution_data

Overview

Type: Discrete	Valid cases: 28306
Format: numeric	Invalid: 16847
Width: 12	
Decimals: 0	
Range: 1-4	

Description

The main fuel used by the household

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

Main fuel (fuel)

File: air_pollution_data

na

Interviewer instructions

na

Other fuel (othfuel)

File: air_pollution_data

Overview

Type: Discrete
 Format: numeric
 Width: 12
 Decimals: 0
 Range: 1-3

Valid cases: 3157
 Invalid: 41996

Description

The other fuel used by the household

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

main source of light (light)

File: air_pollution_data

Overview

Type: Discrete
 Format: numeric
 Width: 8
 Decimals: 0
 Range: 1-2

Valid cases: 3798
 Invalid: 41355

Description

The main source of light in the household

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

main source of light (light)

File: air_pollution_data

Interviewer instructions

na

cooking time (ctime)

File: air_pollution_data

Overview

Type: Continuous
 Format: numeric
 Width: 10
 Decimals: 0
 Range: 20-2350

Valid cases: 29421
 Invalid: 15732
 Minimum: 20
 Maximum: 2350
 Mean: 1247.8
 Standard deviation: 586.1

Description

The cooking time

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

meal prep time (cooktime)

File: air_pollution_data

Overview

Type: Discrete
 Format: numeric
 Width: 16
 Decimals: 0
 Range: 1-4

Valid cases: 45153
 Invalid: 0

Description

The meal preparation time

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

meal prep time (cooktime)

File: air_pollution_data

na

hourly monitoring intervals (time_hr)

File: air_pollution_data

Overview

Type: Discrete
 Format: numeric
 Width: 9
 Decimals: 0
 Range: 1-19

Valid cases: 4484
 Invalid: 40669

Description

The hourly monitoring intervals

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

monitoring duration (duration)

File: air_pollution_data

Overview

Type: Continuous
 Format: numeric
 Width: 9
 Decimals: 0
 Range: 7.28333330154419-19.2999973297119

Valid cases: 45153
 Invalid: 0
 Minimum: 7.3
 Maximum: 19.3
 Mean: 11.2
 Standard deviation: 2.7

Description

The monitoring duration

Universe

Indoor air data covered households with pregnant women

Source of information

The recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Date of measurement (date)

File: Koch_gps_pm_activities

Overview

Type: Discrete	Valid cases: 6076
Format: character	Minimum: NaN
Width: 11	Maximum: NaN

Description

The date when the measurement was conducted.

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Study site:Korogocho=1;Viwandani=2 (site)

File: Koch_gps_pm_activities

Overview

Type: Discrete	Valid cases: 6076
Format: numeric	Invalid: 0
Width: 9	
Decimals: 0	
Range: 1-2	

Description

The site where the measurement was conducted from.

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

The pm2.5 concentration (pm25)

File: Koch_gps_pm_activities

Overview

The pm2.5 concentration (pm25)

File: Koch_gps_pm_activities

Type: Continuous	Valid cases: 6076
Format: numeric	Invalid: 0
Width: 10	Minimum: 2.8
Decimals: 0	Maximum: 13237
Range: 2.79-13237	Mean: 145.1
	Standard deviation: 510.3

Description

The pm2.5 concentration

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Hours (hh)

File: Koch_gps_pm_activities

Overview

Type: Discrete	Valid cases: 6076
Format: numeric	Invalid: 0
Width: 9	
Decimals: 0	
Range: 7-20	

Description

Hours

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Minutes (mm)

File: Koch_gps_pm_activities

Overview

Minutes (mm)

File: Koch_gps_pm_activities

Type: Continuous
 Format: numeric
 Width: 9
 Decimals: 0
 Range: 0-59

Valid cases: 6076
 Invalid: 0
 Minimum: 0
 Maximum: 59
 Mean: 31.1
 Standard deviation: 17.3

Description

Minutes

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

lat (lat)

File: Koch_gps_pm_activities

Overview

Type: Continuous
 Format: numeric
 Width: 10
 Decimals: 0
 Range: -1.25601666666667--1.24696666666667

Valid cases: 6076
 Invalid: 0
 Minimum: -1.3
 Maximum: -1.2
 Mean: -1.3
 Standard deviation: 0

Description

The latitudes of the location

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

lon (lon)

File: Koch_gps_pm_activities

Overview

lon (lon)

File: Koch_gps_pm_activities

Type: Continuous

Format: numeric

Width: 10

Decimals: 0

Range: 36.88538333333333-36.89275

Valid cases: 6076

Invalid: 0

Minimum: 36.9

Maximum: 36.9

Mean: 36.9

Standard deviation: 0

Description

The longitude of the location

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

area (area)

File: Koch_gps_pm_activities

Overview

Type: Discrete

Format: character

Width: 17

Valid cases: 6076

Invalid: 0

Description

The exact area in the site where the measurements were taken from

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

location (location)

File: Koch_gps_pm_activities

Overview

Type: Discrete

Format: character

Width: 12

Valid cases: 6076

Invalid: 0

location (location)

File: Koch_gps_pm_activities

Description

The geographical location

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

activity (activity)

File: Koch_gps_pm_activities

Overview

Type: Discrete

Format: character

Width: 23

Valid cases: 6076

Invalid: 0

Description

The activity that was in progress.

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Date of measurement (date)

File: Viwa_gps_pm_activities

Overview

Type: Discrete	Valid cases: 2844
Format: character	Minimum: NaN
Width: 11	Maximum: NaN

Description

The date when the measurement was conducted.

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Study site:Korogocho=1;Viwandani=2 (site)

File: Viwa_gps_pm_activities

Overview

Type: Discrete	Valid cases: 2844
Format: numeric	Invalid: 0
Width: 9	
Decimals: 0	
Range: 1-2	

Description

The site where the measurement was conducted from.

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

The pm2.5 concentration (pm25)

File: Viwa_gps_pm_activities

Overview

The pm2.5 concentration (pm25)

File: Viwa_gps_pm_activities

Type: Continuous	Valid cases: 2844
Format: numeric	Invalid: 0
Width: 10	Minimum: 3.7
Decimals: 0	Maximum: 694.4
Range: 3.72-694.4	Mean: 52.4
	Standard deviation: 75.6

Description

The pm2.5 concentration

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Hours (hh)

File: Viwa_gps_pm_activities

Overview

Type: Discrete	Valid cases: 2844
Format: numeric	Invalid: 0
Width: 9	
Decimals: 0	
Range: 8-20	

Description

Hours

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Minutes (mm)

File: Viwa_gps_pm_activities

Overview

Minutes (mm)

File: Viwa_gps_pm_activities

Type: Continuous
 Format: numeric
 Width: 9
 Decimals: 0
 Range: 0-59

Valid cases: 2844
 Invalid: 0
 Minimum: 0
 Maximum: 59
 Mean: 28
 Standard deviation: 17.2

Description

Minutes

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

lat (lat)

File: Viwa_gps_pm_activities

Overview

Type: Continuous
 Format: numeric
 Width: 10
 Decimals: 0
 Range: -1.31361666666667--1.30135

Valid cases: 2844
 Invalid: 0
 Minimum: -1.3
 Maximum: -1.3
 Mean: -1.3
 Standard deviation: 0

Description

The latitudes of the location

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

lon (lon)

File: Viwa_gps_pm_activities

Overview

lon (lon)

File: Viwa_gps_pm_activities

Type: Continuous
 Format: numeric
 Width: 10
 Decimals: 0
 Range: 36.86283333333333-36.88753333333333

Valid cases: 2844
 Invalid: 0
 Minimum: 36.9
 Maximum: 36.9
 Mean: 36.9
 Standard deviation: 0

Description

The longitude of the location

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Site (area)

File: Viwa_gps_pm_activities

Overview

Type: Discrete
 Format: character
 Width: 14

Valid cases: 2844
 Invalid: 0

Description

The exact area in the site where the measurements were taken from

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

location (location)

File: Viwa_gps_pm_activities

Overview

Type: Discrete
 Format: character
 Width: 21

Valid cases: 2844
 Invalid: 0

location (location)

File: Viwa_gps_pm_activities

Description

The geographical location

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

activity (activity)

File: Viwa_gps_pm_activities

Overview

Type: Discrete

Format: character

Width: 23

Valid cases: 2844

Invalid: 0

Description

The activity that was in progress.

Universe

Outdoor air data collected from various villages in each of the slum

Source of information

Recordings

Pre question

na

Literal question

na

Post question

na

Interviewer instructions

na

Related Materials

Other materials

Approval Letter

Title Approval Letter
Author(s) APHRC
Date 2012
Country Kenya
Language English
Filename Approval Letter.pdf

Exposure to Outdoor Particles

Title Exposure to Outdoor Particles
Author(s) APHRC
Date 2012
Country Kenya
Language English
Filename Exposure to Outdoor Particles (PM2.5) and Associated Child Morbidity and Mortality in Socially Deprived Neighborhoods of Nairobi, Kenya. Atmosphere 2018, 9, 351.pdf
