

South Africa

Nelisiwe Mtshali, AHRI

Nompumelelo Mkwanazi, AHRI

Prof. Frank Tanser(Principal Investigator), AHRI

Prof Adrian Dobra, University of Washington

Prof Till Barnighausen, AHRI

**Sesikhona! (we are here): Use of smartphone-based GPS
technology to measure ultra-high resolution mobility
patterns of young adults in rural KwaZulu Natal**

Study Documentation

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Metadata Production

Metadata Producer(s)	Africa Health Research Institute (AHRI)
Identification	AHRI.Sesikhona.Phase3.Enrolment

Table of Contents

Overview	4
Scope & Coverage	4
Producers & Sponsors	5
Sampling	5
Data Collection	5
Data Processing & Appraisal	5
Accessibility	5
Files Description	7
AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0	7
Variables List	8
AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0	8
Variables Description	12
AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0	13

Sesikhona! (we are here): Use of smartphone-based GPS technology to measure ultra-high resolution mobility patterns of young adults in rural KwaZulu Natal

Overview	
Identification	AHRI.Sesikhona.Phase3.Enrolment
Version	v1.0.0
<p>Abstract</p> <p>This is a first of its kind study using smartphone-based GPS technology to record ultra-high resolution mobility patterns of approximately 800 young adults (comprising the Sesikhona! Cohort) aged 20-30 years in rural KwaZulu Natal.</p> <p>The Sesikhona! study aims to:</p> <ol style="list-style-type: none"> Determine typologies of movement in the age-group 20-30 in a HIV hyper-endemic population. Quantify movements in and out of known high HIV risk locations. <p>The long-term aim of the study is to design a location-intelligent smartphone intervention using real-time, precision messaging targeting those at high risk of HIV acquisition, transmission, and treatment failure.</p> <p>This study involves young adults aged 20-30 years who participated in the 2019 AHRI HIV survey and are resident members in Sothorn PIP area. The study collects longitudinal mobility data using a customized version of the Avicenna research platform, which uses Android location services to record the device's location at 30-minute intervals (initially every 5 minutes). Data are uploaded to a secure study server every hour. If location data were missing for 48-72 hours, participants were contacted by phone or visited at home) for troubleshooting. The study was conducted in 3 phases:</p> <p>Phase I (Jun 2021 - Aug 2022): participants who consented to join the study were provided a smartphone or could opt to use their own device (smartphone), provided it met the technical requirements of the study protocol. In October 2021, an AHRI Connector app was introduced, enabling data upload via a secure VPN without requiring an data bundle on the device. Participants were followed for 6 months and completed monthly surveys assessing their experience, attitudes towards the study and protocol adherence.</p> <p>Phase II (Jul 2022 - May 2023): all participants used their personal smartphones. To enhance study engagement, a gamified feature 'Wheel of Fortune' was introduced in October 2022, allowing participants to play daily for a chance to win prizes (data bundles, airtime and shopping vouchers). As in phase I, participants were followed for 6 months and completed the monthly surveys.</p> <p>Phase III (Nov 2023 - Jun 2025): participants from phases I and II were reconsented and followed for an additional 12-18 months. P During this phase, they completed a series of surveys covering sexual behaviour, mental health, mobility and travel, mHealth readiness, and adherence to the study protocol.</p> <p>Demographic data and consent were collected using REDCap. All mobility data and survey responses were collected via the Avicenna Research Platform app.</p>	
Kind of Data	Survey data
Unit of Analysis	Unique space-time records

Scope & Coverage	
Keywords	Human mobility, HIV, GPS technology, digital technology, sexual behaviour, mental health, mobile health
Topics	GPS technology, smartphone-based GPS, human mobility, young adults, HIV, mobile health, digital technology

<u>Time Period(s)</u>	2023-2025
<u>Countries</u>	South Africa
<u>Geographic Coverage</u> Movement patterns of Sesikhona! Participants anywhere in South Africa	
<u>Universe</u> A random sample of adults aged 20-30 years old who were resident in Southern PIPSA, participated in the 2019 HIV surveillance and consented to participate in the study	

Producers & Sponsors	
<u>Primary Investigator(s)</u>	Nelisiwe Mtshali, AHRI Nompumelelo Mkwanazi, AHRI Prof. Frank Tanser(Principal Investigator), AHRI Prof Adrian Dobra, University of Washington Prof Till Barnighausen, AHRI
<u>Other Producer(s)</u>	Africa Health Research Institute (AHRI)
<u>Funding Agency/ies</u>	National Institute of Health (NIH) , Funder German Science Foundation (DFG) , Funder Academy of Medical Sciences Newton Fund (NAF) , Funder

Sampling
<u>Sampling Procedure</u> Participants were randomly selected from the 2019 AHRI HIV surveillance program if they were aged 20-30 years old and had participated in the HIV survey in 2019 and were resident members in the southern PIP.

Data Collection
<u>Data Collection Dates</u> start 2023-11-01 end 2025-06-30

Data Processing & Appraisal
<u>Data Editing</u> Raw uncleaned space-time data records obtained from Sesikhona! participants via the Avicenna app Survey responses from Sesikhona participants via the Avicenna app

Accessibility
<u>Access Conditions</u> Access to the data requires accurate completion of the online data access application form accessible on the AHRI Data repository(< https://data.ahri.org/ >). Data users are required to abide by the data use conditions stipulated on the application for access to the data. Failure to do so may result in their data access privileges being revoked by the Data Custodian. In order to recognise the effort and intellectual contributions of AHRI investigators in producing and curating the data, users of AHRI data must acknowledge the source of the data and abide by the terms and conditions under which the data is accessed and must cite the dataset in publication using the citation provided as part of this documentation. All analytical datasets published on the AHRI Data Repository are assigned digital object identifier (DOIs) and the DOIs can be found on the Data Repository under Study Description tab - Access policy. AHRI data users are required to always cite the dataset using the relevant DOI.
<u>Citation Requirements</u>

Mtshali, N., Mkwanazi, N., Tanser, F., Dobra, A., & Barnighausen, T. (2026). Sesikhona! (we are here): Use of smartphone-based GPS technology to measure ultra-high resolution mobility patterns of young adults in rural KwaZulu Natal [Dataset]. Africa Health Research Institute.

DOI: <https://doi.org/10.23664/AHRI.SESIKHONA.PHASE3.ENROLMENT>

Files Description

Dataset contains 1 file(s)

AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0	
# Cases	205
# Variable(s)	82

Variables List

Dataset contains 82 variable(s)

File AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0							
#	Name	Label	Type	Format	Valid	Invalid	Question
1	IintID	Participant ID	continuous	numeric-12.0	205	0	-
2	pi_sex	Sex	discrete	numeric-12.0	205	0	-
3	pi_dob	Date of Birth	discrete	character-11	205	-	-
4	pi_age	Current Age	continuous	numeric-12.0	205	0	-
5	userid1..	Ethica User ID	continuous	numeric-12.0	205	0	-
6	pi_dod	Date of death	discrete	character-11	1	-	-
7	prev_enr..	Participated	discrete	numeric-12.0	203	2	-
8	pc_attmp..	Conducting Telephone Contact: Attempt - One	discrete	numeric-12.0	200	5	-
9	pc_attmp..	Call Attempt Date and Time	discrete	character-11	200	-	-
10	pc_attmp..	Outcome of Contact Attempt	discrete	numeric-12.0	200	5	-
11	pc_attmp..	Do you still live in the AHRI surveillance area?	discrete	numeric-12.0	92	113	-
12	attempt1..	We need to know if you are still interested in the study?	discrete	numeric-12.0	95	110	-
13	pc_phone..	What type of phone are you currently using?	discrete	numeric-12.0	85	120	-
14	pc_phone..	Brand or model of the phone	discrete	numeric-12.0	77	128	-
15	pc_enoug..	Does the phone have space? Probe without leading (space to install the study apps)	discrete	numeric-12.0	66	139	-
16	pc_attmp..	Is the participant eligible and interested in the study?	discrete	numeric-12.0	64	141	-
17	pc_attmp..	Please schedule suitable date to enroll participant	discrete	character-11	63	-	-
18	pc_attmp..	If NO, find out if there is a better time to call?	discrete	numeric-12.0	3	202	-
19	pc_attmp..	Arranged Call Back Date	discrete	character-11	1	-	-
20	pc_attmp..	Can call using the same phone number?	discrete	numeric-12.0	1	204	-
21	pc_attmp..	Call Attempt Date and Time	discrete	character-11	81	-	-
22	pc_attmp..	Outcome of Contact Attempt	discrete	numeric-12.0	81	124	-
23	pc_attmp..	Do you still live in the AHRI surveillance area?	discrete	numeric-12.0	25	180	-
24	take_par..	We need to know if you are still interested in the study?	discrete	numeric-12.0	27	178	-
25	pc_phone..	What type of phone are you currently using?	discrete	numeric-12.0	22	183	-
26	pc_phone..	Brand or model of the phone	discrete	numeric-12.0	19	186	-
27	pc_enoug..	Does the phone have space? Probe without leading (space to install the study apps)	discrete	numeric-12.0	18	187	-

File AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0							
#	Name	Label	Type	Format	Valid	Invalid	Question
28	pc_attmp ..	Is the participant eligible and interested in the study?	discrete	numeric-12.0	18	187	-
29	pc_attmp ..	Please schedule suitable date to enroll participant	discrete	character-11	17	-	-
30	pc_attmp ..	If NO, find out if there is a better time to call?	discrete	numeric-12.0	1	204	-
31	pc_attmp ..	Arranged Call Back Date	discrete	character-11	1	-	-
32	pc_attmp ..	Can call using same phone number?	discrete	numeric-12.0	1	204	-
33	pc_attmp ..	Conducting Telephone Contact: Attempt - Three	discrete	numeric-12.0	52	153	-
34	pc_attmp ..	Call Attempt Date and Time	discrete	character-11	46	-	-
35	pc_attmp ..	Outcome of Contact Attempt	discrete	numeric-12.0	46	159	-
36	pc_attmp ..	Do you still live in the AHRI surveillance area?	discrete	numeric-12.0	9	196	-
37	take_part3	We need to know if you are still interested in the study?	discrete	numeric-12.0	9	196	-
38	pc_phone ..	What type of phone are you currently using?	discrete	numeric-12.0	8	197	-
39	pc_phone ..	Brand or model of the phone	discrete	numeric-12.0	7	198	-
40	pc_enoug ..	Does the phone have space? Probe without leading (space to install the study apps	discrete	numeric-12.0	6	199	-
41	pc_attmp ..	Is the participant eligible and interested in the study?	discrete	numeric-12.0	6	199	-
42	pc_attmp ..	Please schedule suitable date to enroll participant	discrete	character-11	6	-	-
43	hms_cont ..	Conducting Contact Attempt - One?	discrete	numeric-12.0	134	71	-
44	hms_date ..	Attempt Date and Time	discrete	character-11	134	-	-
45	hms_was ..	Was the participant contacted?	discrete	numeric-12.0	134	71	-
46	hms_wasn ..	Why not?	discrete	numeric-12.0	18	187	-
47	hms_veri ..	Please confirm that you are speaking to the correct Participant	discrete	numeric-12.0	116	89	-
48	hms_recr ..	Have you introduced the study to the participant over the phone?	discrete	numeric-12.0	116	89	-
49	hms_attm ..	Is the participant interested in the study?	discrete	numeric-12.0	116	89	-
50	hms_attm ..	Why not?	discrete	numeric-12.0	7	198	-
51	hms_resc ..	Reschedule next visit date	discrete	character-11	8	-	-
52	hms_cont ..	Conducting Contact Attempt - Two?	discrete	numeric-12.0	10	195	-
53	hms_date ..	Attempt Date and Time	discrete	character-11	7	-	-
54	hms_was ..	Was the participant contacted?	discrete	numeric-12.0	8	197	-

File AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0							
#	Name	Label	Type	Format	Valid	Invalid	Question
55	hms_wasn..	Why not?	discrete	numeric-12.0	5	200	-
56	hms_veri..	Please confirm that you are speaking to the correct Participant	discrete	numeric-12.0	3	202	-
57	hms_recr..	Have you introduced the study to the participant over the phone?	discrete	numeric-12.0	3	202	-
58	hms_attm..	Is the participant interested in the study?	discrete	numeric-12.0	3	202	-
59	hms_attm..	Why not?	discrete	numeric-12.0	1	204	-
60	hms_resc..	Reschedule next visit date	discrete	character-11	5	-	-
61	hms_cont..	Conducting Contact Attempt - Three?	discrete	numeric-12.0	6	199	-
62	hms_date..	Was the participant contacted?	discrete	character-11	6	-	-
63	hms_was..	Was the participant contacted?	discrete	numeric-12.0	6	199	-
64	hms_wasn..	Why not?	discrete	numeric-12.0	4	201	-
65	hms_veri..	Please confirm that you are speaking to the correct Participant	discrete	numeric-12.0	2	203	-
66	hms_recr..	Have you introduced the study to the participant over the phone?	discrete	numeric-12.0	2	203	-
67	hms_attm..	Is the participant interested in the study?	discrete	numeric-12.0	2	203	-
68	hms_attm..	Why not?	discrete	numeric-12.0	0	205	-
69	par_path..	Participant pathways	discrete	numeric-12.0	136	69	-
70	ic_stora..	Free storage space percentage	continuous	numeric-12.0	102	103	-
71	ic_netwo..	Network Coverage	discrete	numeric-12.0	101	104	-
72	app_ram..	RAM Size	discrete	numeric-12.0	102	103	-
73	cal_cont..	Conducting Contact Attempt - One?	discrete	numeric-12.0	15	190	-
74	cal_date..	Attempt Date and Time	discrete	character-11	13	-	-
75	cal_was..	Was the participant contacted?	discrete	numeric-12.0	13	192	-
76	cal_wasn..	Why not?	discrete	numeric-12.0	0	205	-
77	cal_veri..	Please confirm that you are speaking to the correct Participant	discrete	numeric-12.0	13	192	-
78	cal_recr..	Have you introduced the study to the participant over the phone?	discrete	numeric-12.0	15	190	-
79	cal_attm..	Is the participant interested in the study?	discrete	numeric-12.0	13	192	-
80	cal_attm..	Why not?	discrete	numeric-12.0	3	202	-
81	cal_path..	Participant pathways	discrete	numeric-12.0	13	192	-

File AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0							
#	Name	Label	Type	Format	Valid	Invalid	Question
82	terminat..	Date of Termination	discrete	character-11	14	-	-

Variables Description

Dataset contains 82 variable(s)

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

IintID: Participant ID

Information [Type= continuous] [Format=numeric] [Range= 1294-231046] [Missing=*]

Statistics [NW/ W] [Valid=205 /-] [Invalid=0 /-] [Mean=79371.546 /-] [StdDev=52327.1 /-]

pi_sex: Sex

Information [Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]

Statistics [NW/ W] [Valid=205 /-] [Invalid=0 /-]

Value	Label	Cases	Percentage
1	Male	73	35.6%
2	Female	132	64.4%

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pi_dob: Date of Birth

Information [Type= discrete] [Format=character] [Missing=*]

Statistics [NW/ W] [Valid=205 /-]

pi_age: Current Age

Information [Type= continuous] [Format=numeric] [Range= 2-33] [Missing=*]

Statistics [NW/ W] [Valid=205 /-] [Invalid=0 /-] [Mean=27.098 /-] [StdDev=4.255 /-]

userid1_ethica: Ethica User ID

Information [Type= continuous] [Format=numeric] [Range= 39636-63072] [Missing=*]

Statistics [NW/ W] [Valid=205 /-] [Invalid=0 /-] [Mean=48507.893 /-] [StdDev=6383.619 /-]

pi_dod: Date of death

Information [Type= discrete] [Format=character] [Missing=*]

Statistics [NW/ W] [Valid=1 /-]

prev_enrolled: Participated

Information [Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]

Statistics [NW/ W] [Valid=203 /-] [Invalid=2 /-]

Value	Label	Cases	Percentage
1	Phase 1	160	78.8%
2	Phase 2	43	21.2%
Sysmiss		2	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp1_phonecnt: Conducting Telephone Contact: Attempt - One

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=200 /-] [Invalid=5 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	200	100.0%
Sysmiss		5	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp1_phonecntdatetime: Call Attempt Date and Time

Information [Type= discrete] [Format=character] [Missing=*]

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

pc_attmp1_phonecntdatetime: Call Attempt Date and Time

Statistics [NW/ W] [Valid=200 /-]

pc_attmp1_phonecntoutcome: Outcome of Contact Attempt

Information [Type= discrete] [Format=numeric] [Range= 1-4] [Missing=*]

Statistics [NW/ W] [Valid=200 /-] [Invalid=5 /-]

Value	Label	Cases	Percentage
1	Call was answered	96	48.0%
2	Call gone to Voicemail	54	27.0%
3	Phone remains unanswered	33	16.5%
4	Number does not exist	17	8.5%
Sysmiss		5	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp1_resident: Do you still live in the AHRI surveillance area?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=92 /-] [Invalid=113 /-]

Value	Label	Cases	Percentage
0	No	18	19.6%
1	Yes	74	80.4%
Sysmiss		113	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

attempt1_part: We need to know if you are still interested in the study?

Information [Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]

Statistics [NW/ W] [Valid=95 /-] [Invalid=110 /-]

Value	Label	Cases	Percentage
1	Yes	89	93.7%
2	No	6	6.3%
Sysmiss		110	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_phone_type1: What type of phone are you currently using?

Information [Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]

Statistics [NW/ W] [Valid=85 /-] [Invalid=120 /-]

Value	Label	Cases	Percentage
1	Smartphone	77	90.6%
2	Non-smartphone	8	9.4%
Sysmiss		120	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_phone_brand: Brand or model of the phone

Information [Type= discrete] [Format=numeric] [Range= 1-98] [Missing=*]

Statistics [NW/ W] [Valid=77 /-] [Invalid=128 /-]

Value	Label	Cases	Percentage
1	Samsung	32	41.6%
2	Huawei	9	11.7%

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

pc_phone_brand: Brand or model of the phone

Value	Label	Cases	Percentage
3	Nokia	5	6.5%
4	Xiaomi	3	3.9%
98	Other	28	36.4%
Sysmiss		128	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_enough_space1: Does the phone have space? Probe without leading (space to install the study apps)

Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]
Statistics [NW/ W]	[Valid=66 /-] [Invalid=139 /-]

Value	Label	Cases	Percentage
0	No	2	3.0%
1	Yes	64	97.0%
Sysmiss		139	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp1_willing_discuss: Is the participant eligible and interested in the study?

Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]
Statistics [NW/ W]	[Valid=64 /-] [Invalid=141 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	64	100.0%
Sysmiss		141	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp1_scedulevst_date: Please schedule suitable date to enroll participant

Information	[Type= discrete] [Format=character] [Missing=*]
Statistics [NW/ W]	[Valid=63 /-]

pc_attmp1_arrange_callback: If NO, find out if there is a better time to call?

Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]
Statistics [NW/ W]	[Valid=3 /-] [Invalid=202 /-]

Value	Label	Cases	Percentage
0	No	2	66.7%
1	Yes	1	33.3%
Sysmiss		202	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp1_callback_date: Arranged Call Back Date

Information	[Type= discrete] [Format=character] [Missing=*]
Statistics [NW/ W]	[Valid=1 /-]

pc_attmp1_callback_sameornot: Can call using the same phone number?

Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]
Statistics [NW/ W]	[Valid=1 /-] [Invalid=204 /-]

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

pc_attmp1_callback_sameornot: Can call using the same phone number?

Value	Label	Cases	Percentage
0	No	0	
1	Yes	1	100.0%
Sysmiss		204	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp2_phonecntdatetime: Call Attempt Date and Time

Information	[Type= discrete] [Format=character] [Missing=*]
Statistics [NW/ W]	[Valid=81 /-]

pc_attmp2_phonecntoutcome: Outcome of Contact Attempt

Information	[Type= discrete] [Format=numeric] [Range= 1-4] [Missing=*]
Statistics [NW/ W]	[Valid=81 /-] [Invalid=124 /-]

Value	Label	Cases	Percentage
1	Call was answered	28	34.6%
2	Call gone to Voicemail	40	49.4%
3	Phone remains unanswered	11	13.6%
4	Number does not exist	2	2.5%
Sysmiss		124	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp2_resident: Do you still live in the AHRI surveillance area?

Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]
Statistics [NW/ W]	[Valid=25 /-] [Invalid=180 /-]

Value	Label	Cases	Percentage
0	No	6	24.0%
1	Yes	19	76.0%
Sysmiss		180	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

take_part_2: We need to know if you are still interested in the study?

Information	[Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]
Statistics [NW/ W]	[Valid=27 /-] [Invalid=178 /-]

Value	Label	Cases	Percentage
1	Yes	24	88.9%
2	No	3	11.1%
Sysmiss		178	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_phone_type2: What type of phone are you currently using?

Information	[Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]
Statistics [NW/ W]	[Valid=22 /-] [Invalid=183 /-]

Value	Label	Cases	Percentage
1	Smartphone	20	90.9%
2	Non-smartphone	2	9.1%
Sysmiss		183	

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

pc_phone_type2: What type of phone are you currently using?

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_phone_brand2: Brand or model of the phone

Information [Type= discrete] [Format=numeric] [Range= 1-98] [Missing=*]

Statistics [NW/ W] [Valid=19 /-] [Invalid=186 /-]

Value	Label	Cases	Percentage
1	Samsung	7	36.8%
2	Huawei	1	5.3%
3	Nokia	0	
4	Xiaomi	2	10.5%
98	Other	9	47.4%
Sysmiss		186	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_enough_space2: Does the phone have space? Probe without leading (space to install the study apps)

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=18 /-] [Invalid=187 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	18	100.0%
Sysmiss		187	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp2_willing_discuss: Is the participant eligible and interested in the study?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=18 /-] [Invalid=187 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	18	100.0%
Sysmiss		187	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp2_scedulevst_date: Please schedule suitable date to enroll participant

Information [Type= discrete] [Format=character] [Missing=*]

Statistics [NW/ W] [Valid=17 /-]

pc_attmp2_arrange_callback: If NO, find out if there is a better time to call?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=1 /-] [Invalid=204 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	1	100.0%
Sysmiss		204	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp2_callback_date: Arranged Call Back Date

Information [Type= discrete] [Format=character] [Missing=*]

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

pc_attmp2_callback_date: Arranged Call Back Date

Statistics [NW/ W] [Valid=1 /-]

pc_attmp2_callback_sameornot: Can call using same phone number?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=1 /-] [Invalid=204 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	1	100.0%
Sysmiss		204	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp3_phonecnt: Conducting Telephone Contact: Attempt - Three

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=52 /-] [Invalid=153 /-]

Value	Label	Cases	Percentage
0	No	6	11.5%
1	Yes	46	88.5%
Sysmiss		153	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp3_phonecntdatetime: Call Attempt Date and Time

Information [Type= discrete] [Format=character] [Missing=*]

Statistics [NW/ W] [Valid=46 /-]

pc_attmp3_phonecntoutcome: Outcome of Contact Attempt

Information [Type= discrete] [Format=numeric] [Range= 1-4] [Missing=*]

Statistics [NW/ W] [Valid=46 /-] [Invalid=159 /-]

Value	Label	Cases	Percentage
1	Call was answered	9	19.6%
2	Call gone to Voicemail	31	67.4%
3	Phone remains unanswered	6	13.0%
4	Number does not exist	0	
Sysmiss		159	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp3_resident: Do you still live in the AHRI surveillance area?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=9 /-] [Invalid=196 /-]

Value	Label	Cases	Percentage
0	No	2	22.2%
1	Yes	7	77.8%
Sysmiss		196	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

take_part3: We need to know if you are still interested in the study?

Information [Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

take_part3: We need to know if you are still interested in the study?

Statistics [NW/ W] [Valid=9 /-] [Invalid=196 /-]

Value	Label	Cases	Percentage
1	Yes	8	88.9%
2	No	1	11.1%
Sysmiss		196	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_phone_type3: What type of phone are you currently using?

Information [Type= discrete] [Format=numeric] [Range= 1-2] [Missing=*]

Statistics [NW/ W] [Valid=8 /-] [Invalid=197 /-]

Value	Label	Cases	Percentage
1	Smartphone	7	87.5%
2	Non-smartphone	1	12.5%
Sysmiss		197	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_phone_brand3: Brand or model of the phone

Information [Type= discrete] [Format=numeric] [Range= 1-98] [Missing=*]

Statistics [NW/ W] [Valid=7 /-] [Invalid=198 /-]

Value	Label	Cases	Percentage
1	Samsung	2	28.6%
2	Huawei	1	14.3%
3	Nokia	0	
4	Xiaomi	0	
98	Other	4	57.1%
Sysmiss		198	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_enough_space3: Does the phone have space? Probe without leading (space to install the study apps)

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=6 /-] [Invalid=199 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	6	100.0%
Sysmiss		199	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

pc_attmp3_willing_discuss: Is the participant eligible and interested in the study?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=6 /-] [Invalid=199 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	6	100.0%
Sysmiss		199	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

pc_attmp3_scedulevst_date: Please schedule suitable date to enroll participant

Information [Type= discrete] [Format=character] [Missing=*]

Statistics [NW/ W] [Valid=6 /-]

hms_contact_attmp1: Conducting Contact Attempt - One?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=134 /-] [Invalid=71 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	134	100.0%
Sysmiss		71	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

hms_datetime_attmp1: Attempt Date and Time

Information [Type= discrete] [Format=character] [Missing=*]

Statistics [NW/ W] [Valid=134 /-]

hms_was_contacted_attmp1: Was the participant contacted?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=134 /-] [Invalid=71 /-]

Value	Label	Cases	Percentage
0	No	18	13.4%
1	Yes	116	86.6%
Sysmiss		71	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

hms_wasnt_contacted_attmp1: Why not?

Information [Type= discrete] [Format=numeric] [Range= 0-98] [Missing=*]

Statistics [NW/ W] [Valid=18 /-] [Invalid=187 /-]

Value	Label	Cases	Percentage
0	Participant not available	8	44.4%
1	Outmigrated	7	38.9%
2	Dead	1	5.6%
98	Other	2	11.1%
Sysmiss		187	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

hms_verify_attmp1: Please confirm that you are speaking to the correct Participant

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=116 /-] [Invalid=89 /-]

Value	Label	Cases	Percentage
0	No	0	
1	Yes	116	100.0%
Sysmiss		89	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

File : AHRI.Sesikhona.Phase3.Enrolment.2025.v1.0

hms_recruitment_attmp1: Have you introduced the study to the participant over the phone?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=116 /-] [Invalid=89 /-]

Value	Label	Cases	Percentage
0	No	23	19.8%
1	Yes	93	80.2%
Sysmiss		89	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

hms_attmp1_interested: Is the participant interested in the study?

Information [Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]

Statistics [NW/ W] [Valid=116 /-] [Invalid=89 /-]

Value	Label	Cases	Percentage
0	No	7	6.0%
1	Yes	109	94.0%
Sysmiss		89	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

hms_attmp1_notcontacted: Why not?

Information [Type= discrete] [Format=numeric] [Range= 4-98] [Missing=*]

Statistics [NW/ W] [Valid=7 /-] [Invalid=198 /-]

Value	Label	Cases	Percentage
4	Refused	4	57.1%
98	Other	3	42.9%
Sysmiss		198	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

# hms_resch_vsdate_attmp1: Reschedule next visit date			
Information	[Type= discrete] [Format=character] [Missing=*]		
Statistics [NW/ W]	[Valid=8 /-]		
# hms_contact_attmp2: Conducting Contact Attempt - Two?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=10 /-] [Invalid=195 /-]		
Value	Label	Cases	Percentage
0	No	3	30.0%
1	Yes	7	70.0%
Sysmiss		195	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_datetime_attmp2: Attempt Date and Time			
Information	[Type= discrete] [Format=character] [Missing=*]		
Statistics [NW/ W]	[Valid=7 /-]		
# hms_was_contacted_attmp2: Was the participant contacted?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=8 /-] [Invalid=197 /-]		
Value	Label	Cases	Percentage
0	No	5	62.5%
1	Yes	3	37.5%
Sysmiss		197	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_wasnt_contacted_attmp2: Why not?			
Information	[Type= discrete] [Format=numeric] [Range= 0-98] [Missing=*]		
Statistics [NW/ W]	[Valid=5 /-] [Invalid=200 /-]		
Value	Label	Cases	Percentage
0	Participant not available	5	100.0%
1	Outmigrated	0	
2	Dead	0	
98	Other	0	
Sysmiss		200	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_verify_attmp2: Please confirm that you are speaking to the correct Participant			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=3 /-] [Invalid=202 /-]		
Value	Label	Cases	Percentage
0	No	0	
1	Yes	3	100.0%
Sysmiss		202	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_recruitment_attmp2: Have you introduced the study to the participant over the phone?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=3 /-] [Invalid=202 /-]		

# hms_recruitment_attmp2: Have you introduced the study to the participant over the phone?			
Value	Label	Cases	Percentage
0	No	0	
1	Yes	3	100.0%
Sysmiss		202	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_attmp2_interested: Is the participant interested in the study?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=3 /-] [Invalid=202 /-]		
Value	Label	Cases	Percentage
0	No	1	33.3%
1	Yes	2	66.7%
Sysmiss		202	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_attmp2_notcontacted: Why not?			
Information	[Type= discrete] [Format=numeric] [Range= 4-98] [Missing=*]		
Statistics [NW/ W]	[Valid=1 /-] [Invalid=204 /-]		
Value	Label	Cases	Percentage
4	Refused	0	
98	Other	1	100.0%
Sysmiss		204	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_resch_vsdate_attmp2: Reschedule next visit date			
Information	[Type= discrete] [Format=character] [Missing=*]		
Statistics [NW/ W]	[Valid=5 /-]		
# hms_contact_attmp3: Conducting Contact Attempt - Three?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=6 /-] [Invalid=199 /-]		
Value	Label	Cases	Percentage
0	No	0	
1	Yes	6	100.0%
Sysmiss		199	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_datetime_attmp3: Was the participant contacted?			
Information	[Type= discrete] [Format=character] [Missing=*]		
Statistics [NW/ W]	[Valid=6 /-]		
# hms_was_contacted_attmp3: Was the participant contacted?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=6 /-] [Invalid=199 /-]		
Value	Label	Cases	Percentage
0	No	4	66.7%
1	Yes	2	33.3%
Sysmiss		199	

# hms_was_contacted_attmp3: Was the participant contacted?			
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_wasnt_contacted_attmp3: Why not?			
Information		[Type= discrete] [Format=numeric] [Range= 0-98] [Missing=*]	
Statistics [NW/ W]		[Valid=4 /-] [Invalid=201 /-]	
Value	Label	Cases	Percentage
0	Participant not available	4	100.0%
1	Outmigrated	0	
2	Dead	0	
98	Other	0	
Sysmiss		201	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_verify_attmp3: Please confirm that you are speaking to the correct Participant			
Information		[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]	
Statistics [NW/ W]		[Valid=2 /-] [Invalid=203 /-]	
Value	Label	Cases	Percentage
0	No	0	
1	Yes	2	100.0%
Sysmiss		203	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_recruitment_attmp3: Have you introduced the study to the participant over the phone?			
Information		[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]	
Statistics [NW/ W]		[Valid=2 /-] [Invalid=203 /-]	
Value	Label	Cases	Percentage
0	No	1	50.0%
1	Yes	1	50.0%
Sysmiss		203	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_attmp3_interested: Is the participant interested in the study?			
Information		[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]	
Statistics [NW/ W]		[Valid=2 /-] [Invalid=203 /-]	
Value	Label	Cases	Percentage
0	No	0	
1	Yes	2	100.0%
Sysmiss		203	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# hms_attmp3_notcontacted: Why not?			
Information		[Type= discrete] [Format=numeric] [Range= 4-98] [Missing=*]	
Statistics [NW/ W]		[Valid=0 /-] [Invalid=205 /-]	
Value	Label	Cases	Percentage
4	Refused	0	
98	Other	0	
Sysmiss		205	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			

# par_pathways: Participant pathways			
Information	[Type= discrete] [Format=numeric] [Range= 0-2] [Missing=*]		
Statistics [NW/ W]	[Valid=136 /-] [Invalid=69 /-]		
Value	Label	Cases	Percentage
0	New Participant	1	0.7%
1	Participant from phase 1	106	77.9%
2	Participant from phase 2	29	21.3%
Sysmiss		69	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# ic_storage_percent: Free storage space percentage			
Information	[Type= continuous] [Format=numeric] [Range= 2-84] [Missing=*]		
Statistics [NW/ W]	[Valid=102 /-] [Invalid=103 /-] [Mean=24.765 /-] [StdDev=19.601 /-]		
# ic_network_coverage: Network Coverage			
Information	[Type= discrete] [Format=numeric] [Range= 1-3] [Missing=*]		
Statistics [NW/ W]	[Valid=101 /-] [Invalid=104 /-]		
Value	Label	Cases	Percentage
1	Strong	74	73.3%
2	Fair	23	22.8%
3	Weak	4	4.0%
Sysmiss		104	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# app_ram_size: RAM Size			
Information	[Type= discrete] [Format=numeric] [Range= 1-3] [Missing=*]		
Statistics [NW/ W]	[Valid=102 /-] [Invalid=103 /-]		
Value	Label	Cases	Percentage
1	Less than 1GB	4	3.9%
2	Between 1 and 2 GB	68	66.7%
3	More than 2GB	30	29.4%
Sysmiss		103	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# cal_contact_attmp1: Conducting Contact Attempt - One?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		
Statistics [NW/ W]	[Valid=15 /-] [Invalid=190 /-]		
Value	Label	Cases	Percentage
0	No	1	6.7%
1	Yes	14	93.3%
Sysmiss		190	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# cal_datetime_attmp1: Attempt Date and Time			
Information	[Type= discrete] [Format=character] [Missing=*]		
Statistics [NW/ W]	[Valid=13 /-]		
# cal_was_contacted_attmp1: Was the participant contacted?			
Information	[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]		

# cal_was_contacted_attmp1: Was the participant contacted?			
Statistics [NW/ W]		[Valid=13 /-] [Invalid=192 /-]	
Value	Label	Cases	Percentage
0	No	0	
1	Yes	13	100.0%
Sysmiss		192	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# cal_wasnt_contacted_attmp1: Why not?			
Information		[Type= discrete] [Format=numeric] [Range= 0-98] [Missing=*]	
Statistics [NW/ W]		[Valid=0 /-] [Invalid=205 /-]	
Value	Label	Cases	Percentage
0	Participant not available	0	
1	Outmigrated	0	
2	Dead	0	
98	Other	0	
Sysmiss		205	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# cal_verify_attmp1: Please confirm that you are speaking to the correct Participant			
Information		[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]	
Statistics [NW/ W]		[Valid=13 /-] [Invalid=192 /-]	
Value	Label	Cases	Percentage
0	No	0	
1	Yes	13	100.0%
Sysmiss		192	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# cal_recruitment_attmp1: Have you introduced the study to the participant over the phone?			
Information		[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]	
Statistics [NW/ W]		[Valid=15 /-] [Invalid=190 /-]	
Value	Label	Cases	Percentage
0	No	2	13.3%
1	Yes	13	86.7%
Sysmiss		190	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# cal_attmp1_interested: Is the participant interested in the study?			
Information		[Type= discrete] [Format=numeric] [Range= 0-1] [Missing=*]	
Statistics [NW/ W]		[Valid=13 /-] [Invalid=192 /-]	
Value	Label	Cases	Percentage
0	No	3	23.1%
1	Yes	10	76.9%
Sysmiss		192	
<i>Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.</i>			
# cal_attmp1_notcontacted: Why not?			
Information		[Type= discrete] [Format=numeric] [Range= 4-98] [Missing=*]	
Statistics [NW/ W]		[Valid=3 /-] [Invalid=202 /-]	

cal_attmp1_notcontacted: Why not?

Value	Label	Cases	Percentage
4	Refused	0	
98	Other	3	100.0%
Sysmiss		202	

Warning: these figures indicate the number of cases found in the data file. They cannot be interpreted as summary statistics of the population of interest.

cal_pathways: Participant pathways

Information	[Type= discrete] [Format=numeric] [Range= 1-1] [Missing=*]
Statistics [NW/ W]	[Valid=13 /-] [Invalid=192 /-]

termination_date: Date of Termination

Information	[Type= discrete] [Format=character] [Missing=*]
Statistics [NW/ W]	[Valid=14 /-]